

University of Southampton

Faculty of Social Sciences

Southampton Business School

Transformation of the Higher Education systems of Eastern European developing countries through organisational learning: the case of Bulgaria”.

by

Daniela Petrova Bariakova

ORCID ID: <https://orcid.org/0000-0001-7304-0730>

Thesis for the degree of Doctor of Philosophy

November 2019

University of Southampton

Abstract

Faculty of Social Sciences
Southampton Business School
Thesis for the degree of Doctor of Philosophy
Transformation of the Higher Education systems of Eastern European developing countries through organisational learning: the case of Bulgaria".
by
Daniela Petrova Bariakova

Purpose

This thesis aims to fill the gap in the existing literature of organisational learning and social innovation by examining the transformation of the HE systems in the Eastern European developing countries.

Design/methodology/approach

Data was collected from system actors within the Bulgarian higher education system. Forty-six semi-structure in-depth interviews were conducted with three groups of participants: top-middle university management, academics and policy makers/experts in 2016-2017. Three methods of analysis were applied for answering the three research questions: thematic analysis, multi-level analysis and cause-effect analysis. Results were validated by data triangulation.

Findings

The results of the study suggest that the lack of shared vision is the primary cause that leads to the other challenges faced by the HE system in Bulgaria. Surprisingly, the individual and system barriers are associated with organisational learning, while the organisational barriers are associated with the globalisation and the inequality. Result suggests that the economic and the political are the external factors that have the greatest impact on the transformation of the system, while the collaboration and interaction are the internal factors with the greatest impact.

Research limitations/implications

This study fills the gap in the literature on social innovation by providing qualitative empirical research, which is deficiency as most of the studies that examine social innovation are mainly review or conceptual. However, this paper uses a single-case study approach,

which makes this research less generalizable to wider populations of the developing countries.

Practical implications

The findings of this study also offer strong implications for the potential to use the organisational learning theory to make predictions on the both system and organisational transformations in the real world, which might go beyond the HE context.

Originality/value

This thesis provides a holistic approach in examining the transformation of the higher education system. It offers deep understanding of both the phenomenon and the context.

Keywords

Organisational learning, social innovation, higher education, multi-level analysis

Table of Contents

Table of Contents	<i>i</i>
Table of Tables	<i>v</i>
Table of Figures	<i>v</i>
Research Thesis: Declaration of Authorship	<i>vii</i>
Acknowledgements	<i>ix</i>
Definitions and Abbreviations	<i>xi</i>
Chapter 1 Introduction	<i>13</i>
1.1 Introduction of the chapter	<i>13</i>
1.2 Context – the Higher Education system in Bulgaria	<i>15</i>
1.3 Research aims, contributions and originality of the study	<i>16</i>
1.4 Research design	<i>21</i>
1.5 Structure of thesis	<i>21</i>
Chapter 2 Literature review	<i>25</i>
2.1 Chapter introduction	<i>25</i>
2.2 Higher education in Eastern Europe	<i>28</i>
2.2.1 Higher education quality and its evaluation	<i>30</i>
2.2.2 Funding and governance	<i>33</i>
2.2.3 Academic and student migration	<i>35</i>
2.2.4 Research and development – Academic perspective	<i>37</i>
2.3 Learning organization: role of culture, structure and processes	<i>41</i>
2.3.1 Universities as learning organization	<i>46</i>
2.3.2 Learning culture	<i>47</i>
2.4 Systems thinking	<i>48</i>
2.4.1 Definitions and concepts	<i>48</i>
Theoretical foundations	<i>50</i>
2.4.2	<i>50</i>
2.4.2.1 General systems theory	<i>50</i>
2.4.2.2 Systems concept in Problem Solving	<i>51</i>
2.4.2.2.1 Hard systems thinking	<i>51</i>
2.4.2.2.2 Soft systems thinking	<i>51</i>
2.4.2.2.3 Critical systems thinking	<i>52</i>
2.4.3 Theoretical influences of systems thinking	<i>53</i>
2.4.3.1 Operational Research	<i>53</i>
2.4.3.2 Complexity	<i>54</i>
2.5 Innovation	<i>55</i>
2.5.1 Brief overview of innovation concepts and principles	<i>55</i>
2.5.2 Radical and fundamental innovations	<i>57</i>
2.5.3 Open and closed innovation	<i>57</i>
2.5.4 Social innovation	<i>58</i>
2.5.4.1 Social innovation in Higher Education	<i>61</i>
2.6 Systems thinking for social innovation	<i>63</i>

2.7	RESEARCH GAP	65
Chapter 3	Methodology	71
3.1	Chapter Introduction	71
3.2	Research Paradigm	72
3.3	Research philosophy	74
3.4	Research strategy	74
3.5	Case study	75
3.6	Research methods	78
3.6.1	Semi-structured interviews	81
3.6.2	Sampling	83
3.6.2.1	Case study selection	83
3.6.2.2	Selection of participants	84
3.6.3	Conduct of the interviews	86
3.7	Methods of analysis	89
3.7.1	Transcription of interview data	89
3.7.2	Analysis of transcriptions	90
3.7.3	Coding	93
3.7.4	Thematic analysis	95
3.7.5	Multi-level analysis	97
3.7.6	Cause-effect relationships	97
3.7.6.1	Deductive coding framework	98
3.7.6.2	Application of the coding framework	99
3.7.6.3	In-depth inductive coding	100
3.7.6.4	Data validation strategies	101
3.7.6.5	Presentation of findings	102
3.8	Ethics	102
3.9	Limitations of research design and methods	103
Chapter 4	Data analysis and findings	107
4.1	Chapter introduction	107
4.1.1	Participants	107
4.2	The main systemic challenges of the higher education system in Bulgaria	110
4.2.1	Strategy and vision	110
4.2.1.1	Fragmentation	112
4.2.2	Governance	115
4.2.2.1	Autonomy	115
4.2.2.2	Corruption	117
4.2.2.3	Regulations and control	118
4.2.3	Number of HEIs	119
4.2.4	Funding	122
4.2.5	Material resources	127
4.2.5.1	Financial resources	128
4.2.5.2	Facilities	129
4.2.5.3	Human resources	130
4.2.6	Standardization of higher education between Bulgaria and European Union	132
	Application of EU models	133
4.2.6.1		133
4.2.6.2	Commercialisation of higher education	135
4.2.6.3	Poor link between HEIs and industry	137

4.2.7	Demographic crisis	141
4.2.7.1	Brain Drain	142
4.2.8	Research and development	144
4.2.9	Quality	147
4.3	Barriers and drivers for the implementation of strategic reforms and innovations in the higher education system in Bulgaria	151
4.3.1	Higher Education: sector specifics	151
4.3.2	Reforms in the Higher Education system	153
4.3.2.1	Resistance to change	155
4.3.3	Innovations in Higher Education	157
4.3.3.1	Aspects of higher education mostly need innovation	164
4.3.3.2	Experience related to innovation	168
4.4	The internal and external factors shaping the transformation of the higher education system	170
4.4.1	Internal factors	171
4.4.1.1	Collaboration	171
4.4.1.1.1	Lack of business-orientated collaborations	171
4.4.1.1.2	Scepticism toward the role of collaborations	172
4.4.1.1.3	Good collaborations	173
4.4.1.2	Interactions	174
4.4.1.2.1	Poor interactions	176
4.4.1.3	Organisational structure and decision making	177
4.4.1.3.1	Organisational structure	177
4.4.1.3.2	Decision making	178
4.4.2	External factors	180
4.4.2.1	Economic	180
4.4.2.2	Political	184
4.4.2.2.1	Uncertainty	185
4.4.2.2.2	Politicised education system	187
4.4.2.3	Governance	189
4.4.2.3.1	The role of the government	190
4.4.2.3.2	Is higher education a priority of the government?	194
4.4.2.4	Cultural and historic background	195
4.4.2.4.1	Transition period	196
4.4.2.4.2	Bologna framework	197
Chapter 5	Further Analysis, Interpretation and Discussion	200
5.1	Chapter Introduction	200
5.2	What are the main challenges of the higher education system in Bulgaria?	202
5.3	What are the barriers and drivers for the implementation of strategic reforms and innovations in the higher education system in Bulgaria?	207
5.3.1	Barriers for strategic reforms and innovations	207
5.3.2	Drivers for strategic reforms and innovations	213
5.4	What are the main internal and external factors that influence strategic reforms and innovations?	216
5.4.1	Internal factors	218
5.4.1.1	Collaborations	218
5.4.1.2	Interactions	219
5.4.1.3	Organisational structure and decision-making	219
5.4.2	External factors	220
5.4.2.1	Economic	220

5.4.2.2	Political	221
5.4.2.3	Governmental	222
5.4.2.4	Cultural and historic background	223
5.5	Theoretical framework: individual, organisational and system obstacles for the transformation of the HEIs into Learning Organisations	225
5.6	Summary	228
Chapter 6	<i>Research outcomes, reflections and conclusions</i>	234
6.1	Chapter Introduction	234
6.2	Review of the main findings and the theoretical contribution of this thesis	235
6.2.1	The main challenges that impact the HE system	237
6.2.2	Barriers and drivers of strategic innovations and reforms	239
6.2.3	The internal and external factors impacting the transformation of the HE system through the implementation of reforms and innovations.	240
6.3	Implications for academic careers	243
6.4	Contributions to the methodology	244
6.5	Contributions to practice	245
6.6	Research limitations	245
6.6.1	Research bias	245
6.6.2	Context based limitations	246
6.6.3	Recommendations for future research	247
6.6.4	Chapter summary	247
	<i>Semi-structured interview questions</i>	249
Appendix A		249
	<i>Coding and evidence table</i>	251
Appendix B		251
Appendix C	<i>Data structure (Drivers and Barriers to the transformation of the HE system in Bulgaria)</i>	255
C.1	Drivers	255
C.2	Barriers	256
List of References		257

Table of Tables

Table 1 Summary of the main issues in the Bulgarian higher education systems	31
Table 2. Summary of the strengths and weaknesses of the qualitative research.	79
Table 3. Data analysis process	91
Table 4. Illustration of codes derived from the findings of the literature review	99
Table 5. Full list of interview participants	107
Table 6. Classification of barriers for reforms and innovations	209
Table 7. Classification of drivers for reforms and innovations.....	216
Table 8. Coding and evidence table	251

Table of Figures

Figure 1 Research skeleton _____	19
Figure 2 Thesis's structure _____	23
Figure 3 Percentage of population, engaged in research & development _____	41
Figure 4 Summary of types and categories of innovation _____	56
Figure 5. Research gap in the literature examining social innovations. _____	71
Figure 6. The research 'onion'. _____	72
Figure 7. Main challenges of the HE system in Bulgaria and their relationships. _____	203
Figure 8. The internal and external factors influencing strategic reforms and innovations. _____	217
Figure 9. Theoretical framework: individual, institutional and governmental obstacles for the transformation of the HEIs into Learning Organisations. _____	225

Research Thesis: Declaration of Authorship

Print name: Daniela Petrova Bariakova

Title of thesis: Transformation of the Higher Education systems of Eastern European developing countries through organisational learning: the case of Bulgaria”.

I declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. Parts of this work have been published as:

Bariakova, DP (2019). A SYSTEMATIC REVIEW OF SOCIAL INNOVATION IN HIGHER EDUCATION SYSTEMS AS A DRIVER OF STUDENT EMPLOYABILITY. *Innovate Higher Education in Education: Rethinking the Possibilities* , 44.

Bariakova, D., Baruch, Y., and Klein, J., (2019). How do higher education systems of developing countries respond to the push for implementing reforms and innovation? The Case of Bulgaria. BAM Annual Conference, Birmingham 2019. (Conference paper, not published by journal yet)

Signature:

Date:

Acknowledgements

Firstly, I would like to express my sincere gratitude to my advisors Prof. Yehuda Baruch and Dr. Jonathan Klein for the continuous support of my Ph.D study and related research, for their patience, motivation, professional approach and immense knowledge. Their guidance helped me to become an independent researcher capable of producing high-quality research. Both of them supported me through the whole process of researching and writing the thesis. I could not have imagined having better advisors and mentors for my Ph.D study.

Besides my advisors, I would like to thank my former Ph.D mentor Dr. Hong Bui for seeing an academic potential in me and inspiring me to do a Ph.D.

My sincere appreciation also goes to my mother, my husband, and all my family members and friends, who supported and encouraged me during the whole long and difficult Ph.D journey. I would have never succeeded without their support and understanding.

Last but not least, I would like to express my gratitude to all interview participants for their willingness to spend some of their valuable time in participating in my research.

Definitions and Abbreviations

Abbreviation

HE
HEIs
EE developing countries
EU
RQ
OL
LO
SI
ST
BG
R&D

Full term

Higher Education
Higher Education Institutions
Eastern European Developing
Countries
European Union
Research question
Organisational learning
Learning organisation
Social innovation
Systems thinking
Bulgaria
Research & Development

Chapter 1 Introduction

1.1 Introduction of the chapter

The current global dynamic environment has shaken the economies of many countries around the globe, which has inspired scholars to develop research that support states, sectors and organizations to survive and cope up with the growing uncertainty. Therefore, the field of social innovation has become a subject of a great interest from both policy makers and scholars during the last decade (Adams and Hess, 2010), because it involves: 1. organizational and citizens' engagement in the innovation process; 2. differentiation from the currently leading business models and narrow economic outlooks on development; 3. another application of innovation related to solving complex social problems. Moreover, social innovation process has the capability to encourage institutional change (Heiskala & Hamalainen, 2007; Mair and Martí, 2006, Chalmers and Balan-Vnuk, 2012). When it comes to social innovation at national level, Van Waarden (2001) suggests that it completely depends on the innovative capacity of the institution within the state. Thus, this research project studies social innovation through organizational learning, because learning organization is of an equal importance for both public and private organizations (Bak, 2012), as it involves knowledge creation and is a fundamental base of innovation - crucial for surviving during times of uncertainty (Örtenblad and Koris, 2014).

Learning organization is a 'system' that has the capability to transform information into valuable knowledge based on actions, actors, symbols and processes in order to achieve a competitive advantage and long-term sustainability (Arumugam, Idris and Munusamy, 2015:155). Hence, managerial tools like organizational learning, started to receive more academic attention, as it is commonly believed that organization's success and survival completely depends on their ability to operate as 'learning organizations' (Senge et al. 2000; Alavi and McCormick, 2004; Dahanayake and Gamlath, 2013). This study explores both social innovations and learning organization theories, as they are fundamentally related, as they involve learning that is a never-ending process, which has a vital contribution organizational growth, performance and survival (Zappa and Robins, 2016). The review of the literature outlines the need of studying and explaining both social innovation and learning organization in a variety of contexts (Shaw and Bruin, 2013) to contribute to the existing knowledge and theory.

The secondary research indicated that both learning organization and social innovation theories are mainly examined in industrial and business contexts (Patnaik, Beriha, Mahapatra and Singh, 2013). Research conducted on both disciplines in educational context is insufficient, although higher education sector is not an exception of other sectors, which have become under a constantly increasing pressure to enhance competitiveness and adapt to the fast-changing environment (Bui and Baruch, 2010b). Moreover, higher education systems are influenced by the fast social, political and economic transitions, which challenges the management team in educational and governmental institutions. For this reason, Senge et al. (2000) propose that organizational learning (OL) can be used as a managerial tool supporting education systems to enhance their capacity to adapt to social changes and improve their quality (Alavi and McCormick, 2004).

Higher education context is extremely interesting for examination, for two reasons:

- Although, the main purpose of higher education institutions is knowledge creation, but at the same time this does not make them learning organizations by default (Patterson, 1999).
- The examination of social innovations in the context of higher education, involves consideration within the limitation of two mainstream bodies (Hasanefendic, et al., 2017): one seeing innovations in higher education as a process of institutional adjustment to the environmental challenges (Chatterton and Goddard, 2000), and other seeing IHE as reliant on the internal features of HEIs (Kezar and Eckel, 2002).

The report of The World Bank shows that there is a growing tendency for researching on innovation in educational context since the progress of both public and private services in in both developed and developing countries (The World Bank Group, 2015). As a result of this growth, an overlapping between organizational learning and social innovations has occurred, as the process and methods of learning, imported in the learning organization concept, are fundamental when it comes to innovation, change management and performance improvement (Ponnuswamy and Manohar, 2016). In addition, social innovation and organizational learning can be easily studied together theoretically, as they both require the same approaches. First, both social innovation and organizational learning are highly impacted by the context, in which they are observed and examined (Bratianu, 2007; Shaw and Bruin, 2013). Second, it is necessarily for these two theoretical bodies to be

examined from both the internal and external perspective by exploring all the factors impacting them.

The literature already outlined learning organization and its tools: systems thinking and design thinking as a source of innovation and competitive advantage. In fact, this thesis looks at learning organization theory, which is considered to be sources of innovation and sustainable development (Bianchi, 2011; Martin-de Castro, 2015; Beckman and Barry, 2007; Fellin and Zinger, 2014; Mele, Pels and Polese, 2010; Dougherty, 2008; Blizzard and Klotz, 2012; Vianna et al., 2012; Leavy, 2010 Halecker and Hartmann, 2013). Systems thinking and other components of the learning organisation are organisational tools that are considered to deliver the promise of improving organisational performance by bringing innovation and sustainable development together through combining both narrative and analytical methods (Shapira, Ketchie and Nehe, 2015). Systems thinking is a discipline orientated toward 'the whole', providing an understanding of complex problems, and prompt changes that may generate significant improvement with minimum effort (Waks and Frank, 2000; Johansson- Sköldberg, Woodilla and Çetinkaya, 2013).

1.2 Context – the Higher Education system in Bulgaria

Higher education has been chosen as a context of this study, as it is globally recognized that educational organizations (HEI) play a major role in the development of the advanced knowledge economies (Ponnuswamy and Manohar, 2016), as they are building the intellectual capacity of every nation, which also influences their economies by generating new knowledge and updating the knowledge and the people skills. Yet, the fact that they are also required to function and adapt to the changes of the dynamic environment is somehow unnoticed (Middlehurst and Woodfield, 2006). Furthermore, Charpman (2009) proposes worldwide governments have introduced changes, reforms and innovation in higher education systems as their top priority as a strategy for social and economic sustainable development (Chapman, 2009). However, universities have a natural capacity to handle the dynamic and challenging environment, as they have the advantage to employ, explore and develop the concept of organisational learning in their unique way (Franklin, Hodgkinson and Stewart, 1998), which involves the presence of systemic approach and perspective (Askling, Lycke and Stave, 2004 in Bui and Baruch, 2010b). In addition, Patterson (1999)

claims that universities have a potential to create cross-sectorial partnerships and collaborations with non-university organisations, but as already mentioned this doesn't mean that all universities are automatically learning organizations.

The reason why exactly the higher education system in Bulgaria is the case study of this research project, is because the state has gone through three catalytic periods of transformation, which have significantly influenced the higher education system: 'the fall of communism in 1989'; 'expansion and diversification'; and 'the alignment with the Bologna framework' (Slantcheva- Durst, 2010). The regular report of the European commission for the period 2014-2020 shows that there can be seen a mismatch between the quality and compatibility of the Bulgarian higher education system and European higher education systems (Strategy for Development of Higher Education in The Republic of Bulgaria for the 2014-2020 period, 2016). Despite the critical problems in the higher education systems in Bulgaria and the other Eastern European countries that are sharing the same context, there are not enough studies focusing on higher education systems of countries in Eastern Europe. Researching social innovation in the context of developing countries is of a significant importance, as there can be seen plenty of case studies, when social innovations have benefited large groups in the developed countries (Ims and Zsolnai, 2014), but at the same time there is not a sufficient research to prove that social innovations can create the same societal benefits in the context of developing countries as well.

1.3 Research aims, contributions and originality of the study

More research on innovation outside of the traditional science and technology is necessary, as there is vital need for exploring innovation within social settings with consideration of both the context and theory (Shaw and Bruin, 2013). Studies of innovation have evolved and gone beyond product and service innovations. A whole new research area has been introduced concentrating on more complex forms of innovation such as social, organisational, environmental etc. Hence, there can be seen that innovation and organizational theories are overlapping, as at organizational level these more advanced forms of innovation are dynamic and shaped by both external and internal factors (Nelson and Winter, 1982). Phillips et al. (2006) adds also innovation cannot occur in isolation, because it is not only an inner process, but an interactive one relating to the involvement of a range of actors and influences from both internal and external audiences. This research project chose to study exactly social innovation, as it is a form of innovation that offers

possible solutions to big societal issues and problems, most of which resulted from global problems that have not been addressed adequately until now (Chalmers and Balan-Vnuk, 2013).

On that account, this thesis seeks to develop a deep understanding of social innovation through organizational learning in the context of higher education systems in developing countries. The examination of relevant literature suggests that both organisational learning and social innovations have to be examined in a variety of contexts (Shaw and Bruin, 2013). Both disciplines have been predominantly examined in business and industrial contexts (Patnaik, Beriha, Mahapatra and Singh, 2013), although other sectors such as the higher education is also very noteworthy for researching because of the profound changes and challenges that they are facing all around the world as a result of the spreading globalisation (Dobbins Knill, and Vögtle, 2011; Popescu, 2015). The Bulgarian higher education system is the context of this study, as the review of the existing literature shows that the context of the developing countries and the Eastern European one in particular is understudied (Bariakova, 2019). Moreover, in contrast to prior studies, the focus of this thesis is social innovation in a higher education context from a system perspective to explain what influences the phenomenon of social innovation, where both internal and external factors are considered. In addition, learning organisation theory and its related components (shared vision, personal mastery, mental models, team learning and systems thinking) are also examined and used to help the researcher to explain the phenomenon of social innovation and drawing the 'big picture'. In this regard, Herrera (2016) proposes that a quality research on social innovation involves researching from multiple perceptions (e.g. policymakers, leaders of social change, educators, and researcher).

Despite the rising interest among scholars and researchers about social innovation, there is a deficit of empirical research studying it. Research efforts are needed in this field, as social innovation theory suffers from mis-measurement, as most of the studies examining social innovation are predominantly conceptual and review (Windrum et al., 2016). This evaluation is also made by Adams and Hess (2010), who argue that there is a great mismatch between the theory and the practice in developing knowledge understanding of the social phenomenon. Moreover, they argue that currently practice, which is led by innovative community sector and public managers is much more advanced compared to the theory. For this reason, public managers, policy makers and experts have been chosen as a target audience of this study. Presently, theoretical research on social innovation has been criticized for being 'fragmented' and 'non-cumulative' (Cajaiba-Santana, 2014). Yet, there must be

taken into consideration that social innovation has a quite new and unsettled history, which emphasizes on the importance of both inter and multidisciplinary approaches (van der Have and Rubalcaba, 2016). Therefore, this study is trying to translate their practical knowledge into theoretical models and framework, which will contribute to the existing literature.

The following research questions guided the research inquiry:

Research questions

1. What are the main challenges of the higher education system in Bulgaria?
2. What are the barriers and drivers for the implementation of strategic reforms and innovations in the higher education system in Bulgaria?
3. What are the internal and external factors that influences the transformation of the higher education system in Bulgaria?
4. What prevents HEIs in Bulgaria to transform into learning organisations examined multi-level perspectives?

Research aims

1. To diagnose the Bulgarian higher education system by identifying its main challenges and their relationships.
2. To construct the main drivers and barriers of transformation at each level (individual, organisational and system).
3. To identify the internal and externa factors that impact the implementation of innovation and reforms.
4. To outline the obstacles of universities to transform into learning organisations by applying the five components of the learning organisations.

Research objectives

1. Developing a deep understanding of both the phenomenon of social innovation and the context into which it is examined.
2. Creating theoretical framework based on the five components of the learning organisation, illustrating the main obstacles of HEIs to transform into learning organisations.

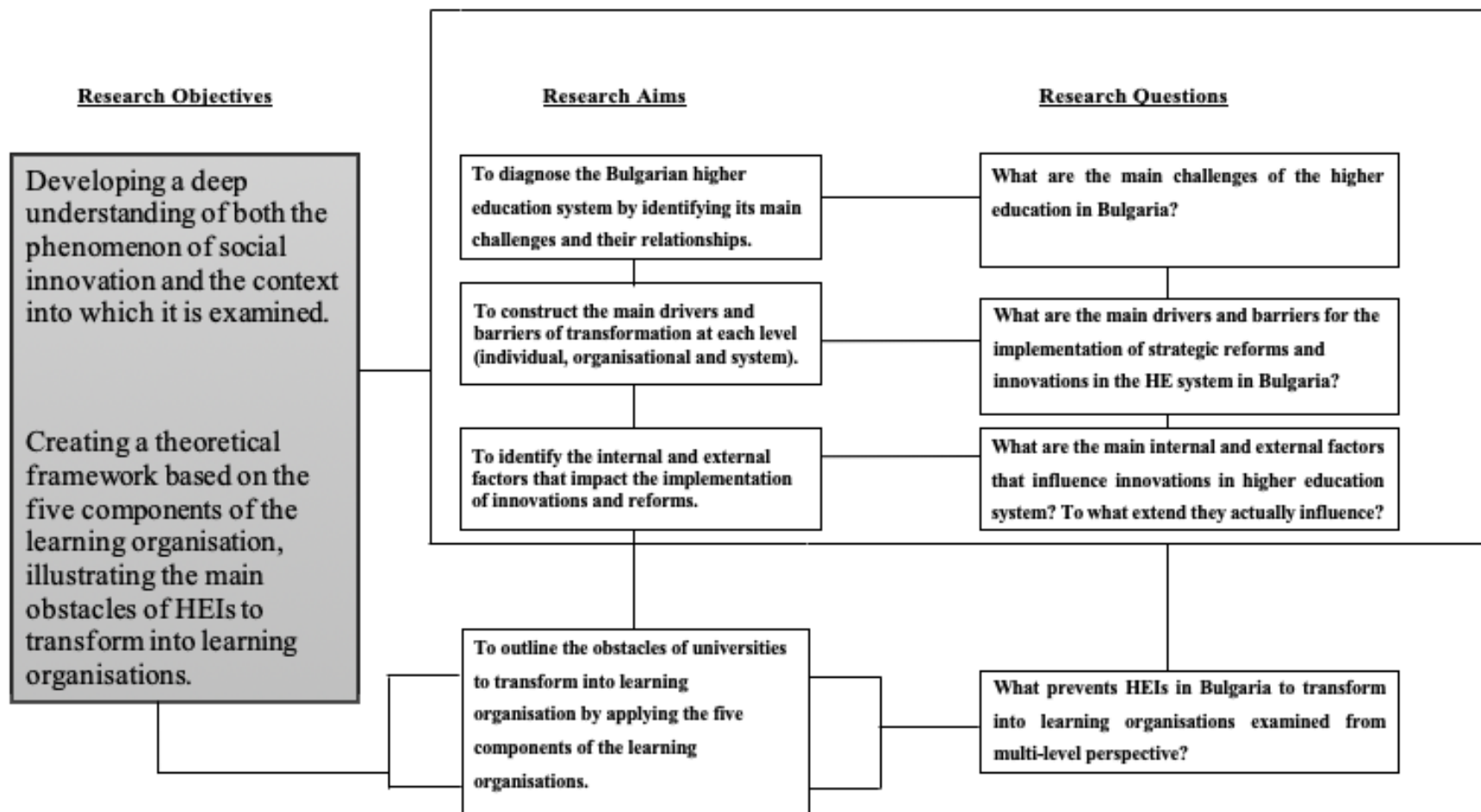


Figure 1 Research skeleton

This figure summarises the research skeleton upon which this study is built. Moreover, it shows the research aims, objectives and questions, as well as the link between them.

1.4 Research design

Philliber et al. (1980) describe research design as a plan that provides the ‘blueprint’ for research, addressing the four issues of what questions to study, what data is relevant, what data should be collected and how the findings should be analysed and interpreted. This research was designed in a way to provide deep understanding of both the subject and the context from a system perspective. The initial goal of this thesis is to draw a big picture of the complex phenomenon examined in the full setting of the interconnecting elements. Therefore, a qualitative research design was adopted to examine a single case study although in this case this means a whole system. The adoption of a single-case study strategy was reasoned with its multi-level approach that examines the interactions between organisations, groups and individuals (Zivkovic, 2012). Forty-six in-depth semi-structured interviews were conducted with 53 participants (42 individual, 3 double and 1 focus group) that are representatives of 15 universities and two governmental bodies. Additionally, all types and sizes of HEIs were approached (i.e. public and private universities; small, middle and large-sized; hard or soft science-oriented; at the top, middle or bottom of the national ranking system). In order to be obtained a more objective picture about the situation, representatives from diverse branches of science were approached: humanities, arts, social sciences, law, applied sciences, natural sciences, engineering, IT, medicine and journalism.

1.5 Structure of thesis

Stage 1

The first stage of the research involves a critical review of the relevant and up-to date literature. First, this thesis reviews the Bulgarian and Eastern European Contexts, as well as, the main contemporary issue of the higher education as suggested by both the report of the EU Commission and the existing literature. Second, relevant literature on organisational learning and its sub-topics was also revised. Third, this study offers a brief literature overview of the main principles and fundamentals of innovation was offered as an essential base for understanding the social innovation phenomenon. Last but not least, social

innovation and organisational learning theories were examined within the higher education context.

Stage 2

The second stage of the research involves the identifying of relevant methodology to fulfil the aims of the study. For this purpose, it was designed to present the frames and lenses through which social innovations and learning organization in higher education context have been examined and interpreted. It summarises the key research philosophies, strategies and methods upon which this thesis is based. Likewise, the second stage illustrates the research methods and techniques that have been employed to gather and generate the data in the single case study of this project. Issues and concerns related to data analysis, quality and validity are addressed as well as ethical considerations are summarized. Lastly, the research design is presented in detail together with the processes and phases in which the researcher was involved to explore organizational learning for social innovation. This stage critically evaluates the research challenges and discusses how they can be overcome or minimised.

Stage 3

This stage of the research project illustrates and reports the research findings resulting from the case study data. It answers the research questions set by this study and identifies: a) the main challenges of the HE system and their relationships; b) the barriers and drivers to the transformation of the system from multi-level perspective (individual, organisational and system); c) the internal and external factors that impact the transformation process of the HE system in Bulgaria. In addition, this thesis offers a theoretical framework that builds on the Senge's learning organisation theory in order to explain what prevents universities in Bulgaria to transform into learning organisations. Finally, the last stage also proposes the final reflections, contributions, limitations and directions for future research of this study.

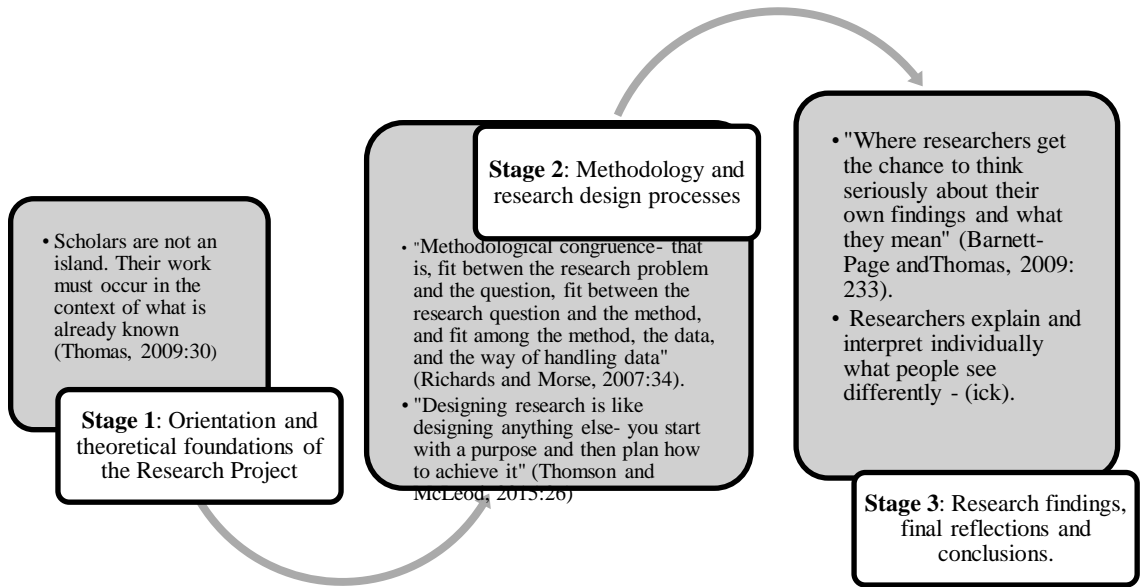


Figure 2 Thesis's structure

Chapter 2 Literature review

2.1 Chapter introduction

The higher education (HE) sector is a subject of intense changes and transformations all around the world, as an outcome of the economic growth, technological innovations, and the increased competitive pressures resulting from globalization (Dobbins et al. 2011). In general, organizations all over the world are facing the challenge to survive and flourish in a highly competitive economic market, which requires them to develop the capacity to learn, adapt and change. Therefore, it is not surprising that the ‘learning organisation’ theory (Senge, 1990) has been attracting a lot of attention in the past decades, as it is seen to be a source of achieving a sustainable change and competitive advantage (Farrukh and Waheed, 2015). Likewise, Kuratko et al., (2014) argue that the fundamental purpose of innovation is to bring all types of change (i.e. product, service, strategy, organisational, cultural, social etc.). This thesis chose ‘social innovation’ and ‘organisational learning’ theories to examine the transformation of the higher education system in Bulgaria. This is reasoned with the literature findings that suggest that the ability of organisations to produce innovations and to operate as learning organisations is crucial for their survival (Senge, 1990; Marsick and Watkins, 2003; Weldy and Gillis, 2010; Dahanayake and Gamlath, 2013).

This is especially valid for the educational organisations (HEI), which play a significant role in the progression of the advanced knowledge economies (Kong, et al., 2010 in Ponnuswamy and Manohar, 2016). The primary role of HEIs is foundational for building the intellectual capacity of every nation, which also influences their economies by generating new knowledge and updating the knowledge and the skills of people (Ponnuswamy and Manohar, 2016). Nevertheless, the fact that they are also required to operate and adapt to the changes of the dynamic environment is somehow ignored (Middlehurst and Woodfield, 2006). At the same time, governments all over the world have set changes, reforms and innovations in higher education systems as their top priority as a strategy for social and economic sustainable development (Chapman, 2009).

This thesis examines the transformation of the higher education system in Bulgaria through the lens of organisational learning and social innovation theories. This approach contrasts with the conventional ones, which would rather choose the institutional and organisational change theories to explain the transformational social phenomenon occurring in Bulgaria. This would be a logical assumption as the process of transformation and modernisation of the higher education system directly refers to ‘change’. Change is defined

as ‘substitution of one thing for another,’ Oxford English Dictionary, 2009). In organisational context, change is seen as ‘the turnaround that modifies the organisation and its parts’ (French, Bell and Zwacki, 2000 in Schwarz, 2012:344). Organisational change theory is philosophically based the assumption that the old is ‘bad’ and the change is ‘good’ (Schwarz, 2009).

The most logical theoretical choice for examining the transformation of the Bulgarian higher education system would logically be the ‘organisational change theory’ (OCT). However, this thesis does not apply the organisational change theory due to the specifics of the topic examined. This study addresses the phenomenon of transformation at a level of scale (individual, organisational/institutional and system), which is rarely done by the organisational change theory (Schwarz, 2009). Theorists rather choose organisational learning theories to examine and conceptualise change, development and transformation (Lundberg, 1989; Woodman, 1989). The theoretical choice of this thesis is to examine the change of the HE system in Bulgaria through the lenses of organisational learning and social innovation theories rather than employing simply organisational change theory.

This is reasoned by the fact that the HE system in Bulgaria has to not only adjust itself, but also to ‘adapt’ to the global trends and economic conditions. Moreover, this thesis studies political factors as change determining, which according to Greiner and Schein (1988) is an approach associated with the organisational development field rather than the field of organisational change. Furthermore, according to Woodman (1989) the most appropriate methodology choice for studying organisational change theory is the action research, as it involves high levels of collaboration which are critical for ‘problem diagnosing, action planning and change implementation’ (Woodman, 1989:208). The usage of action research was not possible in the case of this study, which is elaborated in detail in the methodology chapter.

Another common theoretical choice that could alternatively be applied to examine this topic is the one of institutional theory (IT). Literature search shows that institutional theory has been recognised a dominant perspective in the macro organisational studies (Greenwood, Oliver, Sahlin and Suddaby, 2008). However, this thesis does not choose the institutional theory to examine the transformation of the higher education system in Bulgaria in virtue of reasons. Firstly, institutional theory is so commonly used that scholars lose the diversity and complexity of the empirical examination of organisations by constantly observing them through the same theoretical lenses (Suddaby, 2010:14; Lok,2020). Second, institutional theory perceives change as rather a desired outcome rather than a complex process where the focus is on the stability rather than the motion (Suddaby, 2010; Hwang and Colyvas, 2020; Aksom and

Tymchenko,2020). This theoretical philosophy contrasts with the idea that both the external environment and organisations are changing over time (Cooper at el., 2009; Dacin, Goodstein and Scott, 2002). Third, institutional theory mostly applies to orthodox economics case studies where rationalist analysis can be applied (Munir, 2015). Next, the institutional theory studies ‘power’, ‘structure’ and ‘logics’ within organisations from a top down perspective only (Willmott, 2015). It theorizes how institutions impact individuals and their actions (Munir, 2015) but it fails to recognise how individuals and their actions also influence institutions. Last, institutional theory has been criticised by theorists for predominantly being used to explain the persistence and homogeneity of phenomena (Dacin, Goodstein and Scott, 2002:45).

Thus, this thesis chose to examine the transformation of the HE system in Bulgaria through the lenses of organisational learning and social innovation theories rather than to organisational change and institutional theories due to the following reasons:

- a) It is not possible for the action research strategy to be applied (will be elaborated in the methodology chapter).
- b) This thesis examines the transformation phenomenon at a level of scale (individual, organisational/institutional and system).
- c) This thesis seeks to enrich empirically organisational research by choosing less common and novel perspectives (those of OL and SI).
- d) This study perceives the transformation phenomenon as a process rather than an outcome.
- e) Institutional theory privileges top down models that generate stability while social innovation privileges bottom up, agentic change process.

Thus, the theoretical contribution of this research project is in the building on innovation and organisational theories, as well as examining them together in the context of the developing countries from the Eastern Block. Therefore, this chapter starts with a review of the context of this study – ‘higher education in Eastern Europe’, and continues with the main relevant issues in higher education, emerging from the review of the literature: governance and funding; research and development; academic and student migration; and quality and evaluation. Next, organisational learning literature is reviewed, followed by the review of systems thinking and design thinking literature, continuing with innovation literature and ending with the review of systems thinking and design thinking in relation to social innovation. Several research questions emerged from the review of the literature:

- 1) What are the main challenges of the higher education system in Bulgaria?

- 2) What are the barriers and drivers for the implementation of strategic reforms and innovations in the higher education system in Bulgaria?
- 3) What are the internal and external factors that influences the transformation of the higher education system in Bulgaria?
- 4) What are the individual, organisational and system obstacles for the transformation of the HEIs into learning organisations?

2.2 Higher education in Eastern Europe

Higher education system is defined as ‘national systems that gather together a good share of those individuals who develop and disseminate the intellectual heritage of the world’ (Clark, 1983:1). The purpose and the function of higher education systems have changed in the past decades as nowadays higher education is perceived as a stimulator for individuals with entrepreneurial spirit for producing knowledge and manpower (Erdem, 2000). In addition, the literature shows that there are numerous functions of higher education institutions in the higher education system, but the main ones are: instruction, scientific research and public service (Yilmaz and Kesik, 2010; Sari, Firat and Karaduman, 2016) Higher education institutions/systems have various direct and indirect contributions in the country to strengthen the economy by generating knowledge (Sari et al. 2016).

The European Council set a new vision related to the role of the higher education institutions (HEIs) according to which HEIs have to prepare students for sustainable employment; to prepare them to be active citizens living in a democratic society; personal development; protection and development of a wide and advanced database through teaching, learning and research (Gunay, 2011). In general, as suggested by Stouten and Rousseau (2018) developing a vision is of a significant importance for every transformational process. For this reason, higher education (HE) is currently subject to intense changes all around the world, as an outcome of the economic growth, technological innovations, and the increased competitive pressures resulting from globalisation (Dobbins et al. 2011; Popescu, 2015). In Europe, the introduction of the Bologna process and system formed a situation in which the higher education institutions (HEIs) are progressively subject for competing visions of how university systems and institutions should be governed (see Olsen and Maassen, 2007; Vaira, 2004; Krucken, Kosmutzky and Torcka, 2007). This creates a major conflict between the individual national HE systems, which are based on historical and institutional development and the Bologna Process. Dobbins et al. (2011) argue that

there are enough reasons to be assumed that Bologna will probably foster changes in national governance structures. As it was previously mentioned, the spreading globalisation has influenced higher education worldwide by encouraging global competitiveness. The competitiveness of every country depends on its ability to generate knowledge and innovation (Dumciuviene, 2015). This however, changed the meaning of education, science, research and technological development (Dumciuviene, 2015; Dyba, 2012). Knowledge started to be a significant factor of production in the countries' economies. Globalisation is bringing new and growing tendencies in various domains including higher education, as well as, a path-maker in higher education (Zahid, 2015). Although, generating knowledge and innovation is a crucial factor influencing the competitive capacity of countries, other factors such as the ability to provide financial support for students are also believed to positively enhance it.

For example, countries from Central and especially Eastern Europe provide limited financial support to the students, probably due to the socio-economic conditions of these countries. Most of the grants and loans are offered through competition even in the cases when the students come from low-income families (Iatagan, 2015). In fact, globalisation is what stays behind the inequality and 'The McDonaldization of society' (Ritzer, 2011), followed by the university, which sets a big difference in quality of higher education in developed and developing countries (Altbach, 2007). Furthermore, internationalisation of higher education plays also an important role as higher education institutions are required to adapt their teaching programs in English in order to attract international students and to be more competitive in the global scene (Lapina, Roga and Muursepp, 2016).

Moreover, the requirements from the HEI have increased, as a student is now considered 'client' and not the one who needs education. Additionally, other stakeholder groups such as parents, business etc. have also certain expectations regarding the performance of higher education institutions. This is an additional challenge for the developing countries, which lack not only the financial resources but also human resources to efficiently adapt their teaching programs to the international standards and requirements, as well as improving living, catering and leisure facilities (Altbach and Knight, 2007). Moreover, higher education institutions are facing the challenge to change their identity from national to international, doing so by adopting more entrepreneurial culture (Bayerlein and McGrath, 2016). This, however, includes new marketing and recruitment processes (Wilkins and Huisman, 2011). In other words, globalisation is beneficial for developed countries, but extremely challenging for the developing ones (see Rodrik, 1997; Rodrik, 1999; Stiglitz,

2002), because globalisation tends to concentrate wealth, knowledge, and power in those already possessing these elements (Altbach and Knight, 2007:291).

2.2.1 Higher education quality and its evaluation

Globally, from the beginning of 2000's until now, countries have increased their investments in the higher education sector, which have decreased the quality of higher education service (Sari et al. 2016). This tendency is mainly valid for the developing countries, which are trying to adapt their higher education systems to match the standards set by the developed countries. There are many factors influencing the development and quality of higher education institutions and their services in the underdeveloped and developing countries such as increasing population, globalization, information society, new basic technologies, increasing competition, government reforms, minimization and restricting of the governments, application of good administration, demands the teaching programs to be adapted in English, which is considered to be a 'global language' (Aktan, 2007; Sari et al. 2016).

The report of the European commission for the situation of the higher education system in Bulgaria: (*Strategy for Development of Higher Education in The Republic of Bulgaria for the 2014-2020 period, 2016*), listed several factors responsible for the unsatisfying quality of higher education such as low motivation and interest of both students and staff to turn to research and science careers, and generate fundamental knowledge especially in natural science, weakness in the operation of the internal quality management systems, over complicated and inefficient procedures for accreditation and presence of subjective criteria (*Strategy for Development of Higher Education in The Republic of Bulgaria for the 2014-2020 period, 2016*). The data of the report of European commission related to the quality of higher education in Bulgaria are only focusing on internal systemic factors, but do not provide the bigger picture of all factors influencing the HE's quality, as well as a deeper reflection on the causes of these factors.

Table 1 Summary of the main issues in the Bulgarian higher education systems

The main problematic issues in Bulgarian higher education system listed in the report of the European Commission
1. Difficult access to HE for some social groups and low share of higher education graduates among people at working age.
2. Difficulties for the quality and compatibility of the Higher Education with the European HE systems.
3. Weak links between the higher education and the needs of business and public institutions.
4. Insufficient link between training and research.
5. Improvement of the HE institutions management system and the HEIs network.
6. Disadvantages of the current funding model.
7. Problems associated with attracting and career advancements of lectures.
8. Inadequate opportunities for lifelong learning.
9. <u>Changes in the higher education system.</u>
10. <u>Risks and barriers to the strategic reforms.</u>

Source: Report of the European Commission: (Strategy for Development of Higher Education in The Republic of Bulgaria for the 2014-2020 period, 2016

The table above shows that the listed causes and reasons for the unsatisfying quality of higher education are only searched in the higher education institutions, but the systematic perspective is missing. 90 % of fifty-two universities in Bulgaria are public, which means that the role of the state for establishing higher education quality assurance system is crucial. Higher education accreditation systems aim to reveal whether higher education institutions and teaching programs are meeting the criteria of performance standards established such as quality, efficiency, activity etc. at both national and international levels. The purpose of the

accreditation systems is to provide trust and benchmark for the applicants and the public. There are two types of accreditation- institutional accreditation and program-oriented accreditation (Aktan, 2007).

For example, higher educational institutions in Romania have been obligated to apply quality management systems in accordance with requirements of the Romanian Agency for Quality Assurance in Higher Education (ARACIS) since 2016 (Moldovan, 2012). The comparison between the main national external quality assurance frameworks for higher education shows that there cannot be an absolute 'general model' of external quality assurance, as it cannot be universally applied to every context. In each country and context, there may be specific adjustments like adding or removing elements from the model (Billing, 2004). In addition, these adjustments depend on the size of the higher education sectors, the flexibility of the legal expression of quality assurance and last, but not least the stage of development from the state control of the higher education sector (Billing, 2004). Quality management systems are a key factor in gaining competitive advantage in regional, national and even international level. The competition between universities can be over various forms of education such as day courses, part time courses, and distance courses. Mainly, quality assurance systems focus on two main functions of university: teaching and scientific research (Moldovan, 2012).

All Eastern European countries which joined the Bologna Process have two main conditions to fulfill: to have an established quality assurance system, which will introduce comparable qualifications; and to introduce the two-tier educational system (bachelor degree-master degree). For instance, this was exactly the case of Russia, which academic institution's activity had to be synchronized with the European-type academic credits (Fatkullina, Morozkina and Suleimanova, 2015). Countries from Eastern Europe which harmonized and adapted their higher education systems in accordance to the Bologna Process have faced the same issue, when traditional educational systems have to be replaced with modern ones. Nowadays, the role of the student has changed. In the traditional education systems, the student was expected to gain knowledge and skills, while in the modern-type educational systems students are expected to develop and update their knowledge and skills in an ongoing modern rhythm (Fatkullina et al. 2015).

The Bologna Process encouraged the country members to modernize their higher education systems by adopting innovative educational programs focusing on competences, modules and credits. The competence approach involves focusing on student's personal motive to carry out the educational activities based on a set of general educational skills and

their ability to make decisions depending on the individual system of values. The modules in the educational programs are kind of educational program which has definite structure, specific goals and outcomes, and provided a significant element of the educational material. The establishment of a credit units' system is considered as a 'modern instrument' of assessing students' participation in the process of educational-practical activities and also scientific and extra-curricular activities. The outcome of the introduction of the credits system was the promotion of a new quality system in the process of education (Fatkullina et al. 2015:573). However, the challenge that the public universities, from Eastern European countries that are trying to adopt to the modernization reforms (e.g. Bulgaria and Russia), are facing is to supply the educational process with an appropriate and adequate quality control system. This is a challenge, as both Bulgaria and Russia are countries, which have not established a quality control system that marks out the best students (Strategy for Development of Higher Education in The Republic of Bulgaria for the 2014-2020 period, 2016; Fatkullina et al. 2015). The establishment of such 'quality control system' requires fundamental systemic and legislative changes and moderations.

2.2.2 Funding and governance

Funding higher education has been an issue of a great importance for a couple of decades, which is not surprising in the present times of uncontrolled and expansion and massification of higher education (Akalu, 2016; Trow, 2000; Marshall, 2018; Nagy, Kovats and Nemeth, 2014). Globally, there can be observed two main contemporary issues related to funding of higher education. Firstly, the sources of funding have become more diversified (Estermann and Pruvot, 2011 in Nagy, et al. 2014). Secondly, tuition fees have become more important, although there can be a great difference among countries worldwide. Thirdly, the models of allocation of state funding among institutions have also changed (Nagy et al. 2014). Moreover, higher education institutions have become more customer-oriented and friendly and sensitive, which has led to funds allocation to students and enterprises in a form of loans or favorable tax regulations. In many countries, teaching and research are separately funded and the higher education institutions have significant freedom in how to spend the financial resources provided by the government. Funding systems of developing countries have been a subject of changes and improvements according to the new global trends, but at the same time their development is still delayed compared to the developed countries (Nagy et al. 2014). Developing countries and in particular countries from Central and Eastern Europe are facing specific issues related to funding due to cultural and contextual factors. For instance, post-communist countries have a double challenge - to deal

with the post-transitional challenges, and at the same time to increase the funding, which was actually impossible. The context of the post-communist countries has significantly influenced their attitudes toward funding, as the role of the state is highly emphasized (Fatkullina et al. 2015).

Funding and distribution of funding is a key factor influencing the higher education quality and university's economy (Glushak, Katkow, Glushak, Katkova and Kovaleva, 2015). The continues growing of number of students resulted in growing number of various educational programmes. This has increased the complexity in the higher educational sector which has changed the role of government. Government are now expected to monitor a complex ecosystem consisted by different agents and players having different interests instead of control and manage homogeneous institutions (Nagy et al. 2014). The most significant reform related to funding and governance that the countries from Eastern Europe (Bulgaria, the Czech Republic, Cyprus, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia and Russia) have experienced is the autonomy of higher education institutions (Shaw, 2018; Mok and Neubauer, 2016; Mok, 2019; Estermann and Nokkala, 2009; Enders, De Boer, File, Jongbloed and Westerheijden 2011; Estermann, 2015; Jongbloed, 2010), as this significantly affected the methods to control these institutions. Previously, higher education institutions were controlled by direct regulations established by the government, while nowadays they have been adopting indirect incentive mechanisms for control via various of monitoring and reporting practices known as governance (Jongbloed, 2010).

Funding is in the top most important incentive mechanisms, although in the different countries and contexts it can range from state funding into more diversified funding forms. Funding formulas are used in the countries from Eastern Europe mainly to calculate state funding of higher education establishments (e.g. Romania and Hungary) in other countries like Bulgaria such formulas are used only to calculate the study expenses, 60% to 65% of which is covered by the state budget funding. The other 35% to 40% are covered by student tuition fees (Erina and Erins, 2015). These formulas focus on the number of students enrolled, the number of employees, the efficiency and the number of students receiving degrees for a definite period.

In some Eastern European countries states signed agreements with higher education institutions for funding special programs and student support systems such as studentships and crediting systems. Crediting and studentship systems do not exist in some Eastern

European countries (Bulgaria, the Czech Republic and Slovenia). Slovakia and Poland provide crediting systems, while the Baltic States (Lithuania, Latvia and Estonia) even provide both students and studies loans. Countries from Eastern Europe have different policies when it comes to scholarships (Dobbins and Knill, 2009).

In Estonia and Latvia, scholarships are given to the excellent students as a form of motivation and encouragement, while in the other countries' studentships are granted when necessary. When it comes to research and innovations are funded in competitive basis. The criteria, however, varies from a country to country. For instance, in Latvia and Estonia funds are allocated based on the number of PhD students, as well as, the number of employees in a particular research field, while in countries like Malta and Bulgaria funds are allocated based on the contribution made (Erina and Erins, 2015). Although, countries from Eastern Europe have a significant autonomy when it comes to financial resource management, their financing policies differ. For example, in Bulgaria, the Czech Republic and Cyprus, the state budgets are allocated on the basis of expenses, while in Lithuania, Poland and Slovenia, the state budgets are allocated in accordance the submitted budget plan.

Although, Eastern European Countries have different financing policies and funding priorities and schemes, they still cannot be compared to the countries from Western Europe (Nagy et al. 2014). This is especially valid for countries with socialist past like Bulgaria, where the involvement of the students and their families paying the costs have been constrained. Moreover, the culture in the post-communist countries that the majority of their citizens share, makes them expecting to receive higher education. At the same time, the ability to raise money from the private sector is also constrained. All these lead to high differences in competitiveness and quality between Western European Countries (WEC) and Eastern European Countries (EEC) (Estermann and Pruvot, 2011).

2.2.3 Academic and student migration

History shows that university education was a privilege of a few in the past worldwide (Baruch, Altman and Tung, 2016; Baruch and Hall, 2004). This, however, is no longer valid in the present global world. The percentage of people who have access to higher education has increased dramatically in the past decades (Altbach, Reisberg and Rumbley, 2019; Altbach, 2015), which resulted also in increased academic and student mobility (Baruch,

Budhwar and Khatri, 2007). Demographic crisis and, especially brain drain, are widely acknowledged problematic issues which are well covered by theory (Marinakou, Giousmpasoglou, and Paliktzoglou, 2016; Siekierski, Lima and Borini, 2018; Maurseth, 2019). The importance of research and investments in academic career development is crucial, as unlike in the past when education was a privilege of few, nowadays there is a pressing need for development of human capital in academia. Moreover, this includes not only research and investments in this area, but also people wishing to gain academic qualifications (Baruch and Hall, 2004:1). The global tendencies show that approaches of career education are adopted and adapted based on the approaches of the developed countries (Zahid, 2014). This is a consequence of the spreading globalisation, which has not only opened the exchange of information between developed and developing countries, but also has opened career opportunities across the borders known also as 'academic mobility'. In some cases, the academic and student mobility can be seen as 'brain drain' for the developing countries (Boncea, 2015), and 'brain gain' for the developed ones (Tung and Lazarova, 2006).

Choi (1995) describes 'brain drain' as a 'migration of talented people' (in Albatch, 2004:14). 'Brain drain' phenomenon was firstly identified as a problematic issue in 1960s (Boncea, 2015), and continues to be a contemporary issue nowadays. However, the motivation behind this phenomenon has changed. In the past, 'brain drain' was mostly believed to be influenced by political, social and economic factors. In some cases, people are forced to migrate from their homes because of a war, or political, ethnic and religious oppression (Cervantes and Guellec, 2002). Although, nowadays economic, political and social factors still influence 'brain drain', Baruch et al. (2007) argue that globalization has fundamental implications for the mobility of people. In addition, Baruch suggests that there are three levels (individual, organisational and national) that can explain the nature and direction of the forces (Baruch, Altman and Tung, 2016). Brain drain is an issue of significant importance in developing countries, as highly educated people are rare resource in such countries (Boncea, 2015). In contrast, 'brain drain' is beneficial for developed countries, as in their context this is a 'brain gain' (Tung and Lazarova, 2006).

Brain drain phenomenon started to bring some of benefits in an academic context for the developing countries in the past decade with the occurrence of globalisation as many academics nowadays keep in close contact and establish collaborative relationships with colleagues and institutions from their country of (Albach, 2004). Furthermore, generally migration is no longer what it used to be. In the global world we are living in does not require

from migrants to cut their friends, relations and networks back home (Clark and Altman, 2016). In fact, repatriation has increased in the last years. Repatriation is commonly defined as the return of individuals to their home countries and organisations (Lazarova, 2015). The process of repatriation can be considered as beneficial for both the repatriates and the home countries and organisations, as when individuals come back they bring new gained knowledge, attitudes and tastes. The home country and organisations also develop and might change organisational structure, processes and people playing certain roles (Baruch et al., 2016).

In the case of Bulgarian context, the employment of the academic staff has some fundamental shortage, resulted from the poor study crediting systems, which is responsible for the allowance of awarding academic degrees and appointments of people who lack the necessary scientific achievements and qualities (Erina and Erins, 2015). Moreover, the lack of interest of young graduates to choose an academic career due to the lack of opportunities for training of lectures, which unsurprisingly decreases the quality of their work. The main challenges related to attracting and developing lectures are the lack of providing qualification opportunities for lectures; unsatisfying salaries; and imbalance between qualified and non-qualified lecturers (Strategy for Development of Higher Education in The Republic of Bulgaria for the 2014-2020 period, 2016).

2.2.4 Research and development – Academic perspective

The development of national innovation systems in transition to knowledge economy is the main element of the sustainable development of national economies (Kankovskaya, 2016). Although, sustainable development is an ultimate goal for all sectors of economy, it is essential in the case of education, knowledge and innovations. The sustainable development depends on the level of development of innovation systems. For instance, Kankovskaya (2016:451) points that the national innovation systems in Russia consists of three main components: the research and development sector, the business sector and the education sector. Globally, knowledge is considered as one of the key resources of sustainable competitive advantage, value, and wealth creation for organizations of all types (Demchig, 2015). For this reason, nowadays higher education institutions have to be considered as element of change. They are not only expected just to encourage and stimulate

learning, research and innovation but also to develop knowledge and innovation infrastructure (Bikse, Rivza and Riemere, 2015).

Universities as generators of knowledge, creativity and innovation, have a key role in regional development and global competitiveness. Moreover, universities are promoters of innovation culture at both regional and international level because of the increasing interaction between education, research and innovation (Muresan and Gogu, 2010).

However, the main challenge before the academy in the new economy is to fill the gap between the political decisions and policies, the governance and the labour market by offering innovative solutions and developing intellectual capital (Muresan and Gogu, 2010). In addition, in order universities to be creative and innovative, they need to fast and proactively respond to the dynamic turbulence and requirements of globalisation (Sokol, et al. 2015). In Bulgarian case, the major weakness of higher education system are results of failing in building an effective mechanism for communication and synchronisation between higher education institution and businesses and the public institutions. The main responsibility of the higher education institutions is to produce skilled professionals for the users of highly educated, proactive and motivated staff. The educational degrees 'Bachelor', 'Master' and 'Doctor' do not match the dynamics of the labour market both within and outside the country (Strategy for Development of Higher Education in The Republic of Bulgaria for the 2014-2020 period, 2016). There are several factors that influence innovation in Bulgaria negatively based on:

- The decreasing of the number of personnel in the field of engineering technical, pedagogical and natural science.
- Outdating in education in new jobs needed for the green economy, high tech and *innovative activities*.
- Mismatch between actual competence of graduates and the expected competence.
- The lack of practical training of students in real working environment which leads to lack of practicable skills, knowledge and habits.
- Hunger for low-skilled personnel.

Traditionally the link between research and studies are institutionally separated activities in Bulgaria, which requires transformation and modernization of the higher education system. Unfortunately, the beginning of this process has not been even established yet. The key knowledge triangle (education-research-innovation) (Kankovskaya, 2016) is

not applied in practice. The challenges related to the link between training and research can be summed up to the following list:

- Outdated and insufficient scientific infrastructure.
- Inadequate research mobility.
- Not enough commercialization of research results.
- Small number of students of students, postgraduates, postdoctoral students and graduates in research.
- Insufficient number of publications in scientific journals in the global system of referencing, indexing and evaluation.
- Unsatisfactory funding of fundamental and applied research and experiments.
- Difficulties to the project activity-financing, information provision and complicated accounting rules.
- Distributing the funds for science to all higher education institutions despite of their scientific results.

As previously mentioned the context of the post-communist countries has significantly influenced their attitudes toward funding, as the role of the state is highly emphasized. This has led to other fundamental issues such as inability to raise money from the business sector and really weak R&D activities compared to the countries from Western Europe (Erina and Erins, 2015). Moreover, the statistics show that the higher education spending in the developing post-communist countries is much lower compared to the developed countries in Western Europe and the world. Innovations and reforms were encouraged and set as priorities only on a paper, as the higher education policy was orientated in favor of the policy of financial constraints (Dobbins and Knill, 2009). Furthermore, again the strategic orientation that European Commission posed was contradictive in nature, because it transformed into a chronic shortage of funds and investments for the ongoing functioning of the higher education system and at the same time established the beginning of the reforms process (See Strategy for Development of Higher Education in The Republic of Bulgaria for the 2014-2020 period, 2016).

The amount of research funding increased in the 2008-2012 period, which however, could not reach even the levels before the big fall of communism regime. Bulgaria is still marked by its *undeveloped* and *unsystematic* policy process, which lack crucial and fundamental elements needed for the successful and efficient implementation of reform course (Dobbins and Knill, 2009: 412). As Bulgaria has become part of the EU family in 2007 and is expected to match the educational standards of the EU countries, there must be

examined its position in research and development activities, compared to the other EU members. Therefore, the figure below outlines illustrates the percentage of population, engaged in research and development among the EU member countries. As it can be seen from the graph Bulgaria similarly to other Eastern European developing countries has one of the lowest percentages. Not all Eastern European developing countries, however, have low percentage of population, engaged in research and development. For instance, Czech Republic and Slovenia have very high percentage even compared to developed Western European Countries like United Kingdom. Czech Republic's higher education system is a very good example to be used for gaining a richer picture outlining not only the man problematic issues that Bulgarian HE is has been facing in the last decade but also their roots. This is because historically both countries Bulgaria and Czech Republic have followed the same storyline during the post-communist phase, especially when it comes to 'academic oligarchy' (Dobbins and Knill, 2009).

What differentiates Bulgaria and Czech Republic, however, is that Czech Republic as a country member of Organisation for Economic Co-operation and Development OECD, has adopted recommendations proposed by OECD, which outgrow the expansion and modernization of HE only. OECD proposed the establishment of 'independent advisory *think thank* to stimulate competitiveness and technological progress (Cerych, 2002:117; OECD 1992 in Dobbins and Knill, 2009: 406). Furthermore, OECD called for more efficient management-based internal HE structures and diverse funding, as well as, for the increasing the number of more polytechnic-like institutions. This measurement seems quite adequate in times of rapid development of technology and science worldwide. This is where Bulgarian HE system and HE policymakers fail to respond and react in an adequate way to the external environment. The labour market in Bulgaria likely to the global one demands more qualified staff, which cannot be provided by the HEIs as the HE system slowly responds to the dynamically changing global complex environment and did not take any measurements in the past to be able to sufficiently face these issues in the present (See Strategy for Development of Higher Education in The Republic of Bulgaria for the 2014-2020 period, 2016).

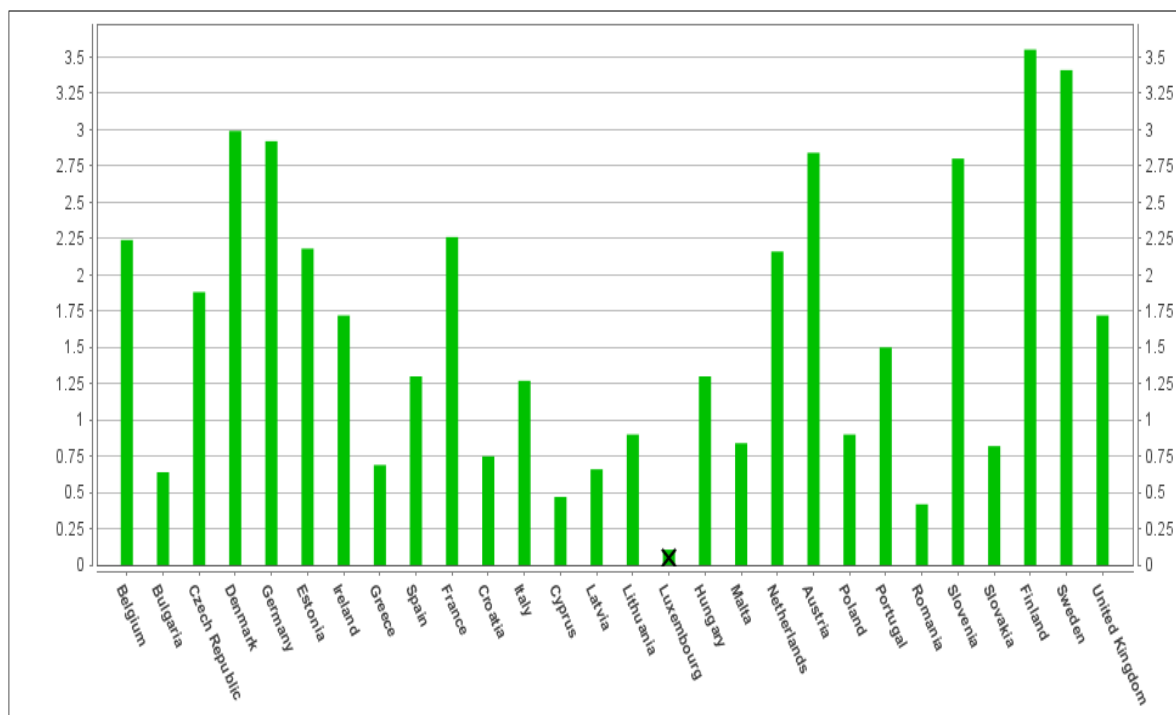


Figure 3 Percentage of population, engaged in research & development

(Source: Eurostat, 2012).

2.3 Learning organization: role of culture, structure and processes

The theory of Organizational Learning (OL) emerged in the past decades, when in 1960s was discovered that individual goals are different from the organizational goals (Arumugam, Idris, Omar and Munusamy, 2015). Organizational learning theory is influenced by the motivational and achievement goal theories (Chadwick and Raver, 2015), as these theories explain why certain individuals, groups and organizations are more or less likely to learn. The concept of learning is observed from numerous perspectives and mainly developed in psychological and sociological fields, but in the past decades OL started to be applied into organizational context (Wang and Ahmed, 2003). However, Deburca (2000) argues that learning still needs to be explored and examined as a sociological and psychological process. This explains the various definitions of OL existing in the literature in relevance to psychology and sociology, although there is no precise definition of organizational learning. In addition, the review of literature also shows that organisational learning (OL) is surrounded by extensive confusion in terms of the definition and the nature of the subject (Ponnuswamy and Manohar, 2016). Some theorists like Cuert and March (1963) frame it as

a process related to ways in which organizations as collective bodies learn through interaction with their internal and external environments (Fortis, Maon, Frooman and Reiner, 2016). Moreover, organizational learning is a collective learning process, which requires the participation of all actors in the organization (deBurca, 2000). Theorists argue that OL represents the process of generating, distributing, developing and translating knowledge into innovation (March and Simon, 1958; Cyert and March, 1963; March, 1991 in Zappa and Robins, 2016: 295).

Some other theorists perceive OL nothing else but the ‘sum of individual learning in an organisation (Simon, 1991; Kim 1993 in Zappa and Robins, 2016: 295), while other argue that OL or LO is much bigger than this. They describe it as a collective idea, processes, systems and structures of the organization (March, 1991 in Zappa and Robins, 2016:295). Easterby-Smith and Lyles (2003) also contend that OL focuses on the process of learning rather than the content. Indeed, Dixon (1994 in Zappa and Robins, 2016: 295) considers the ‘organisational learning cycle’ is of more significance than the accumulated knowledge itself. This is because organisational learning leads to continuous revising and creating knowledge, as well as, continuous improvement. OL can be seen as the bridge connecting the traditional scientific approaches to management and the non-traditional approaches like systems thinking and continuous improvement (Wang and Ahmed, 2003).

Spector and Davidsen, (2006:64), add also that OL can be also seen as an ‘information management scheme adapting systematic approaches and attempts to transfer knowledge in the entire organization. Moreover, learning organizations are these organizations, which constantly adapt themselves to environmental changes, detect and fundamentally correct their errors by improving their effectiveness through collective actions (Argyris, 1982; Argyris and Schon, 1996; Robinson, 2001; Senge, 1990 in Alavi and McCormic, 2004:409). Arumugam, Idris and Munusamy (2015:155), propose also that organizational learning is a system, which has the capability to transform information into valuable knowledge through its actions, actors, symbols and processes, where the ultimate goal is achieving competitive advantage Arumugam, Idris and Munusamy (2015) and long-term sustainability. The literature demonstrates that learning is never-ending process, which has a vital contribution organizational growth, performance and survival (March, 1996 in Zappa and Robins, 2016). Learning involves abilities, attitudes, beliefs, capabilities, knowledge, mental models, skills etc. that are likely to last over time (Spector and Davidsen, 2006:67). Therefore, understanding of how learning occurs has attracted massive attention among theorists (Argote, McEvily and Reagans, 2003).

Learning is seen at organizational level as collectivity of individual learning, training and development. Actually, learning starts from individuals and the learning organisation is based on the learning process of the individuals within an organization, but this however does not necessarily mean that individual learning always leads to organisational learning (Ikehara, 1999 in Zappa and Robins, 2016). Simon (1991 in Zappa and Robins, 2016) suggests that organizations learn in only two ways: a) by the learning of its members, or b) attracting new members who have knowledge the organization did not previously have (in Ponnuswamy and Manohar, 2016: 24). This explains why individuals within an organization are seen as ‘agents’ for organization to learn (Argyris and Schon, 1978:16 in Ponnuswamy and Manohar, 2016: 24). OL occurs when the individuals within an organization experience problematic situation, which is not unlikely in the present dynamic and complex environment. However, OL is not only a result of learning of individuals, but also of their behaviour (Senge, 1990). Learning from the experience of others in and out of the organizational boundaries is a key aspect of learning mechanism, which requires knowledge transfer (Zappa and Robins, 2016). However, Nonaka, Byoseire, Borucki and Konno (1994) argues that interactions are not enough factor enabling organizational learning and knowledge transfer, as when the knowledge is too diverse, people across the units within a particular organization may fail to understand and absorb it. Individuals have different absorbing capacity, but what is common between all of them, is that they learn through associating new ideas with their existing knowledge. For this reason, both internal and external interactions should involve individuals who share similar knowledge base (Reagans and McEvily, 2003).

As mentioned at the beginning, ‘learning’ started to be applied and observed in a business context. The very first one who proposed OL model to the business context was Senge (1990). Furthermore, later Senge proposed OL for educational organizations in general (Senge, 1994) and school context in particular (Senge et al., 2000). Moreover, Senge et al. (2000) suggests that OL can be used as a managerial tool supporting education systems to enhance their capacity to adapt to social changes and improve their quality (Alavi and McCormick, 2004). Indeed, according to Senge (1990) Learning Organisation model consists of five main disciplines, which have the capability of enhancing organisations ‘capacities (Alavi and McCormick, 2004):

- *Personal mastery* – “this discipline is related to the ability to achieve results that have importance for the individual” (Alavi and McCormick, 2004:340). Moreover, personal

mastery is considered to be a key component of learning organisations (Fillion, Koffi and Ekionea, 2015), as it is related to the ability of both organisations and individuals to achieve the results that they truly desire (Senge: 1990b). Personal mastery is used to help organisations to establish models that can inspire employees to continuously clarify and deepen their visions, to focus their energies, to increase their personal commitment, to develop patience, and to improve their ability to see the reality as objectively as possible (Appelbaum and Goransson, 1997; Bui and Baruch, 2010). Motivation and self-motivation in particular, are key components of the personal mastery (Ng, 2004). In fact, personal mastery is associated with the individual level and the willingness of employees to learn and develop (Senge, 1990; Watkins and Marsick, 1993), which enables organisational transformation (Dodgson, 1993).

- Shared vision – *‘refers to building a sense of a common goal, purpose and identity through trust, commitment and engagement’* - (Alavi and McCormick, 2004:340). It refers to the ‘building a sense of commitment in a group, by designing shared images of the future that we desire to create’ (Senge, 2014:6). Moreover, according to Senge (2014:6) shared vision involves also adopting common guiding practices and principles, which help the individuals to reach their objectives. Shared vision unites people by setting a common aspiration in them and creates a sense of community (Fillion, Koffi and Ekionea, 2015), which is provoked by their feelings for common caring (Senge, 2006). Most importantly, the shared vision requires employees to give up their assumptions that the organisational visions have to be generated by the top management. Therefore, it requires intensive collaboration and interactions (Appelbaum and Reichart, 1997; Tsai and Beverton, 2007).

- Team learning – is related to *‘both the dialog and discussion and learning in teams and groups’* - (Alavi and McCormick, 2004:340). Team learning is associated with the development of a team capacity for achieving the goals that are truly desired by all its members (Senge, 1990). Team learning goes beyond individual learning, as it prioritises individuals’ ability to collaborate and interact than their talent (Bui and Baruch, 2010). Team learning cannot occur without interactions and collaborations between the team members (Namada, 2018). Moreover, theory suggests that team learning leads to collective intelligence, which goes beyond this of all members (Hitt, 1995; Senge, 2006; Fillion, Koffi and Ekionea, 2015). There are two antecedents of team learning, which are crucial for its implementation – leadership and goal setting (Bui and Baruch, 2010). Leadership in the context of team learning has two dimensions. It either requires a proactive team leader who navigates, inspires and manage the team learning efforts (Edmondson et al., 2004; Watkins

and Marsick, 2003), or leadership should lie in each team member without a prominent leader figure (Bui and Baruch, 2010:214).

- Mental models – are related to *‘the individual’s perception of the reality and give meaning to how the individual perceives themselves and the world’* - (Alavi and McCormick, 2004:340). Their main purpose is to specify the cause-effect relationships leading the system (Gentner and Stevens, 1983b). Moreover, theory suggests that the deeply ingrained assumptions, generalization and even images affect the humans’ understanding about the world and their actions (Senge, 1990:8). Therefore, any changes in the mental models of the individuals have the ability to influence their judgement and actions (Rook, 2013). If successfully implemented, mental models are believed to achieve outcomes such as improved performance and knowledge sharing (Gentner and Stevens, 1983a). The change of the mental models of the employees depends mainly on their leaders, who are responsible to create learning environment, improve the shared mental models and clarify the vision (Watkins and Marsick, 2003). Last but not least, literature review suggests that organisational culture has a significant influence on the mental models as it is related to values, norms, beliefs, language, myths, rituals and symbols (Bloisi et al, 2007:751). However, organisational culture is highly influenced by the societal culture in which it is embedded (Dimmock and Walker, 2000; Hofstede, 2001 in Bui and Baruch, 2010).

- Systems thinking - is considered to be *‘at ‘the heart’ of the learning organisation, as it is a framework for seeing interrelationships and patterns of change’*- (Alavi and McCormick, 2004:340). Systems thinking is a problem- solving tool, which refers to ‘people’s capacity to examine a problem in the full setting of the interconnecting elements’ (Hosley et al., 1994:12). Systems thinking helps people to see the deeper patterns of complex problems (Bui and Baruch, 2010). Moreover, systems thinking involves treating both systems and organisations as ‘systems. All the previous four disciplines (i.e. shared vision, personal mastery, team learning and mental models) are antecedents and outcomes of this discipline, which is known as ‘the fifth discipline’ of the learning organisations. Therefore, this thesis focuses on systems thinking mainly, as it is the ‘heart’ of learning organisations, and involves a big picture perspective and socio-cultural approach, which is crucial in the case of this research that examine the transformation of the higher education system in Bulgaria. Furthermore, this thesis examines the transformation of the HE system in Bulgaria through reforms and innovations as they associated with organizational change, transformation and sustainability (Howard-Grenville et al. 2017). Transformation involving sustainability requires broader and more systematic change on societal level, which has to

be addressed through combining both disciplinary and interdisciplinary approaches (Barth and Michelsen, 2013).

2.3.1 Universities as learning organization

Higher education sector similarly to the other sectors has become a subject of an increasing pressure to adapt to the rapidly changing environment and to increase its competitiveness (Bui and Baruch, 2010b). The rapidly changing environment involves fast social, economic and political transitions, which challenges management in higher education to deal with. Franklin Myra Hodgkinson and Stewart (1998) argue that universities have the advantage to explore, employ and develop the concept of organisational learning in their own way. Furthermore, the achievement of organisational learning requires a systemic approach and perspective (Askling, Lycke and Stave, 2004 in Bui and Baruch, 2010b). This due to the fact that universities have potential to create cross-sectoral partnerships, as well as, collaboration with non-university sectors (Patterson, 1999). Although, creating knowledge is the main and most fundamental purpose of higher education institutions, they are not necessarily learning organisations by default (Patterson, 1999). Dowd (2000) suggests that there is not any strict criteria and guidelines on the scope, size and manageability of learning organisation, which perhaps gives more space for flexibility in the process and design of learning organisations. The only condition that Senge (1990) sets is that learning organisations need to be open, no matter how large or small they are. Furthermore, learning organisations can have different characteristics and features based on the contextual factors, they are influenced by. Tosey and Mathison (2008) argue that 'learning organisation' is a desirable status of an organisational structure for the higher education institutions, as well as, for other organisations. Bak (2012) argues that the establishment of 'learning organisation' is equally important for both the public and private organisations, differences have been observed between higher education institutions that are on a tenure and those on a shared governance.

Nonaka (1991:96 in Ortenblad and Koris, 2014) propose that knowledge-creation is a crucial condition for continuous innovation and lasting competitive advantage in an uncertain environment as the present one. Ortenblad and Koris (2014) argue that all stakeholder groups (managers, employees and the society) will benefit if HEIs become learning organisations and create climate for learning. In addition, learning organisations involves two dynamic and interacting forces: inward (related to the individual learning) and

outward (related to the contextual environment of learning) (Hodgkinson, 2000). On one hand, the establishment of learning organisation requires the individuals within the organisation to learn develop their full potential. On the other hand, learning environment and climate is necessary in order the individuals within an organisation to learn and develop their full potential (Bak, 2012). In this frame, Senge (1990:7) explains this phenomenon as on in which people who are constantly working on expanding their own capacity to achieve the outcomes that they truly desire and learn how to learn collectively (Bak, 2012), which extends between the internal and external organisational boundaries.

2.3.2 Learning culture

In general, organisational culture is expressed by artefacts such as symbols and rituals, which represent the culturally appropriate behaviours and practices (Denison, 1996; Schein, 1990, 1992 in Chadwick and Raver, 2015). Furthermore, organizational culture's artefacts manifest also in the organisational climate through shared perception of policies, procedures and practices in order to communicate to the employees what are the expected, supported and awarded behaviours within an organisation (Schneider, 1990). In the context of HEIs, learning organisation culture does not have a universal definition (Ponnuswamy and Manohar, 2016). Based on summary of the literature, Ponnuswamy and Manohar (2016:25) define learning organisation culture as a type of organisational culture, which promotes continues learning for sustainable improvement in both teaching and learning. In addition, Gorelick and Tantawy-Monsou (2005) and Watkins (2005) argue that the ultimate goal of learning is to be transformed into knowledge that can be used for individual development, team spirit and transformational leadership to be fostered in order the vision, mission and organizational goals to be accomplished.

Moreover, Ponnuswamy and Manohar (2016), argue that the process and methods of continues learning used by learning organization culture are crucial when it comes to innovation, change management and performance improvement. Learning organisational environment (climate and culture) is also closely related to job satisfaction, which will influence the overall organisational performance (Pantouvakis and Bouranta, 2013). The advantage of the learning organisation culture, in rapidly changing environment like the present one, is rooted in the continuing stimulation of the employees rather than their personal skills and capabilities (Kassim, Ali and Sadiq, 2014). This is because the rapidly changing environment requires organisations to be adaptive and capable of self-

transformation (Senge, 1990) to adjust themselves to the unforeseen changes. Gong et al. (2009) adds also that the organisations, which can learn faster have more sustainable competitive advantage compared to those that do not. Moreover, organisations, which employ a clear organisational learning process are able to address issues such as organisational change, organisational transformation, organisational renewal, problem-solving and innovation (Aslam, Ilyas, Imran and Rahman, 2016).

Belle (2016) propose that organisational learning culture draws management attention to the importance of development of know-how capabilities (Crossan and Berdrow, 2003) as well as to the ability to sense, read and respond to both internal and external information (Chiva and Alegre, 2005). Despite all of the advantages that ‘organisational learning culture’ has to offer according to the literature, applying an ‘OL’ culture has practical difficulties in its application (Thomsen and Hoest, 2001). Moreover, Palos and Stancovici (2016) agree that managers and consultants are challenged on one hand to create apply organisational learning culture and on the other hand to keep the practical nature of their work. Ortenblad (2015), addresses also the question if every organisation must have a ‘OL’ culture in order to gain competitive advantage. Papers reviewing organisational learning are mostly conceptual and descriptive, and very few are empirically tested. This makes the outcomes of ‘OL’ and ‘OL’ culture in particular hard to be measured. Spector and Davidsen (2006) suggest that the measurable aspects of ‘OL’ are: innovation; leadership involvement (sharing the vision); collaborating in problem solving; reflective attitudes and support; teamwork; tolerance to errors; and openness to experiment.

2.4 Systems thinking

2.4.1 Definitions and concepts

Although systems thinking has been a discipline and theory since the 1950s, the term ‘systems thinking’ was not introduced until 1987 by Barry Richmond (Arnold and Wade, 2015). Richmond (1987;1994; 2001) considered systems thinking as a discipline of a great significance when it comes to dealing with the complexity of the 21st century. His understanding about the subject ‘systems thinking’ has been taken up by a large number of scholars and practitioners (e.g. Gharajedaghi, 2011; Meadows, 2008; Plate and Monroe, 2014; Senge and Sterman, 1992; Sterman, 2010). Systems thinking is considered one of the most effective managerial tools to provide an understanding of systems and complexity for the general public if systems thinking leaders and researchers are right in their assumptions (Plate and Monroe, 2014; Arnold and Wade, 2015). The term ‘systems thinking’ has been defined and redefined many times. Mingers and White (2010) explain that this is because

systems thinking can be applied to almost any domain. Meadows (2008) believes that systems thinking consists of three main components: elements, interactions and purpose (function). Gharajedaghi (2011) suggested there are five disciplines of systems thinking, namely openness, purposefulness, multidimensionality, emergent property and counterintuitive behaviour.

Systems thinking researchers and practitioners all agree that the principle of a system is much more than a collection of elements (Gharajedaghi, 2011). In line with this view, Arnold and Wade (2015) add that systems thinking can be seen as a system. Furthermore, they define systems thinking as a *system of thinking about systems*. Arnold and Wade (2015) argue that the issues raised by the number of definitions of systems thinking in the literature are a result of the reductionist approach. The reductionist approach is an approach that observes the ‘whole as nothing more than a sum of parts’ (Wimsatt, 2006). However, it is not a systems-thinking approach, as it is not capable of providing a deep understanding of complex and dynamic scenarios (Dominici, 2012). For this reason, Arnold and Wade (2015), suggest that defining systems thinking as a system may not be the most appropriate way of defining it, as this is a reduction approach. As there are no clear criteria of how systems thinking should be defined, this chapter presents the most frequent definitions of systems thinking found in the literature to present the big picture of what systems thinking is, and what its purpose and usage is.

Systems thinking in the literature: the most common definitions

One of the very first definitions of systems thinking is the one of Barry Richmond, who defines it as: ‘the art and science of making reliable inferences about behaviour by developing an increasingly deep understanding of underlying structure’ (Richmond, 1987:1). Senge (1990) introduces his own definition, in which, for the first time, systems thinking is presented as a discipline: ‘Systems thinking is a discipline for seeing wholes and a framework for seeing interrelationships rather than things, for seeing patterns of change rather than static snapshots’ (Senge, 1990:7).

Despite the presence of many definitions of systems thinking in the literature, Senge (1990:7) is rare in defining it as a discipline. Most of the definitions of systems thinking in the literature do not define it as discipline (e.g. Richmond (1987); Arnold and Wade, (2015); Monat and Gannon (2015); Skyttner (2005); Larsson et al. (2010); Sweeny and Sterman (2000); Hopper and Stave (2008); Kopainsky, Alessi and Davidsen (2011)). Kopainsky,

Alessi and Davidsen (2011) do not even categorise the term ‘systems thinking’. The most common definitions of systems thinking describe it as an art (Sweeny and Sterman, 2000); a perspective, language, set of tools (Arnold and Wade, 2015; Monat and Gannon, 2015; Skyttner, 2005; Larsson et al., 2010) or even as a base of systems dynamics (Hopper and Stave, 2008). However, although academics and practitioners define systems thinking differently, the commonality between all of them is that they all perceive it as a powerful instrument for improving the existing reality and achieving the desired results. Notwithstanding that, the existence of such a great variety of definitions creates confusion about the meaning and usage of systems thinking, the highest point of this confusion. However, as can be seen, there is no clear usage and definition of systems thinking (Forrester, 1994).

2.4.2 Theoretical foundations

2.4.2.1 General systems theory

General systems theory consists of the integration of various sciences e.g. natural and social behaviour sciences (Checkland, 1981). The history of systems theories includes contributions from creative thinkers, such as Ludwig von Bertalanffy, Karl Menninger, Silvano Arieti, William Gray, Alfred North Whitehead, Paul A. Weiss, Grinker, Nicolas Rizzo, Kurt Lewin, Roy R., Anatol Rapoport, Kenneth Boulding, Kartz and Kahn and Ralph Gerard. In more recent years, it has included dynamical systems theorists and those who deal with dissipative structures and holistic paradigms. The transdisciplinary nature of the systems approach has fast spread to the humanities as well as hard science. GST grew out of organismic biology and today is part of most of the humanities. GST was recognised as a platform for the study of human and organisational behaviours, and applications in the present day are in the area of social work, mental health and all kinds of political and behavioural sciences. Laszlo and Krippner (1998, p. 6) believe that the rise and spread of systems theory is due to the ‘*societal pressures on science calling for the development of theories capable of interdisciplinary application*’. Systems theory is considered to provide a powerful conceptual approach for comprehending the interrelation of human beings, and the associated structures and processes specific to them in the contexts of both nature and society. The literature review recognised the key theoretical foundations and influences of systems thinking to form a principal core of how these theories have been applied to understanding and explaining the recent evolutionary form of systems thinking, and how it was formed and influenced by other relevant theories.

2.4.2.2 Systems concept in Problem Solving

In terms of its application, the systems methodology in problem solving can be hard, soft or critical. At the beginning, hard systems thinking methodology was the first introduced systems methodology, which implication was mainly related to engineering and mathematic. It was announced for a first time when Forrester (1958) introduced the industrial dynamics. Checkland (1990) made a huge progress by introducing the ‘soft systems thinking’ methodology, designed for solving more complex problems, followed by Jackson (1994) who introduced the ‘critical systems thinking’ methodology. The specifics, strengths and weaknesses of all systems thinking methodologies will be listed down in this section.

2.4.2.2.1 Hard systems thinking

This methodology was majorly designed to address real-world problem solving (Checkland 1990). This is why it was mostly applied in the field of engineering and technology. Moreover, systems engineering is a professional activity with an action orientation. The ultimate goal of the ‘Hard systems thinking’ methodology was to create a mathematical modelling. Hard systems thinking methodology was identified to be useful when it comes to the solving of routine technical problems. Mathematical approaches are not designed to solve complex problems as they can only offer a distorted view from a particular perspective (Jackson, 1994:215). Forrester (1958) adopted the hard systems thinking methodology, as well as, ideas from the control theory to design the ‘systems dynamics’, which aim were to overcome the limitations of the management science. This was considered as a major breakthrough in the decision making, but the approach was taken in a reductionist manner rather than in a holistic one.

2.4.2.2.2 Soft systems thinking

The real progress in the systems theory has begun with the introduction of the soft systems thinking methodology. The context to which this methodology was, was a sociological one where addressing complex problems requires a structuralist approach rather than a positivist approach (Jackson, 1994). The aim of the soft systems thinking methodology was not simply to solve problems, but also to gain deep understanding about the organisational features in order the system to be more effective overtime by reorganizing and restructuring itself (Checkland,1990). The design of adaptive complex systems for surviving has become the ultimate goal of the soft systems thinking methodology. The soft systems thinking methodology introduced by Checkland (1990) adopts a subjective view,

which construction is based on alternative perceptions, which are compared and contrasted. Jackson (1994) argues that the purpose of the soft systems thinking methodology is the building of learning organizations. Distinct to the operational research methodology, the soft systems thinking methodology an approach of Interpretativism rather than Positivism. In addition, soft systems thinking do not aim to design complex adaptive systems models that can be used over and over again. The soft systems thinking methodology focuses on prevention of the problems rather than dealing with the effect and the results of the problem, when it already appeared.

Checkland (1990)'s soft systems thinking methodology is designed to deal and create problem-solving techniques and approaches for human activity systems. These are systems consisting of natural and social interactions between human beings. Therefore, the performances and objectives of these system can be created. The clarification of the objectives of the actors of the system is of a primary importance for the problem-solving tasks, because of the dual nature of the human behaviours. Soft systems thinking methodology was created to deal with soft, unstructured problems that are hard to be defined in contrast to the hard systems thinking methodology, it does not propose straightforward and well-defined goals and solutions. Soft systems thinking has been criticized by Rosenhead (1976), Bryer (1979), Thomas and Lockett (1979) and Jackson (1982,1983) for basing their work on compromise view of society (in Jackson, 1991).

2.4.2.2.3 **Critical systems thinking**

Critical systems thinking was created to overcome the limitation of the soft systems thinking in the 1980s (see Flood, 1991b). The critical systems thinking theory studies for the people, rather than studying them (Jackson, 1994). Unlike the soft systems thinking methodology, it focuses on helping actors to solve their problems by communicating with them and educating them, but not imposing. Furthermore, the process is no one-way only, it involves an active communication between the decision makers and the actors, which will be affected by these decisions. The critical systems thinking methodology aims to send awareness among the actors and make them involved in the decision-making process by encouraging them to debate, where the criteria of the success depend on the usefulness for the actors involved. Moreover, critical systems thinking offers critical awareness involves examining and re-examining the taken-for-granted assumptions. In terms of the methodology, critical systems thinking works with pluralistic methodology as it combines a variety of research methods in a theoretical manner to address a variety of problematic issues (Midgley, 1996).

2.4.2.2.3.1 Cybernetics and holism

The term ‘cybernetics’ has a Greek origin, meaning ‘helmsman’ or ‘steersman’. Holism theory also has Greek origins, as it was found by Aristotle. The fundamental roots of systems thinking are directly related to holism and cybernetic theories. The term cybernetic is associated with concerns about feedback (Ison, 2008). There are two types of cybernetics – first order and second order cybernetics (Fell and Russell, 2000). First order cybernetics focuses on what is being observed and lately has developed into a communication theory. The second order of cybernetics is a theory of the observer rather than what is being observed (Fell and Russell, 2000:34). The epistemological and philosophical jump from first order to second order cybernetics marks a return back to the basic concept of cybernetics – ‘circularity’ (Fell and Russell, 2000).

Ison (2008) states that Forrester (1992), like Wittgenstein before him, outlined the differences in the terms ‘Am I apart from the universe?’ [the first order] and ‘Am I part of the universe?’ [the second order]. The first one is connected to the philosophical assumption that ‘whenever I look am I looking through a peephole upon an unfolding universe?’ (Ison, 2008:146). The second one is associated with the philosophical assumption ‘Whenever I act, I am changing myself and the universe’ (Ison, 2008:146). Operations research is another source of influence on contemporary systems thinking and practice (Ison, 2008).

2.4.3 Theoretical influences of systems thinking

2.4.3.1 Operational Research

Operations research (OR) thrived after the Second World War as it started to be seen as a supportive tool for studying and managing complex problems. As a discipline, it has continued to develop today in the current systems community. Ormerod (2011) reminds, that advocates of systems theory have history of publishing papers in journals of operational research systems, where they present the system perspective as a superior compared to OR, which according to them is a limited management tool that supports the status quo. Scholars such as Jackson (2009) aim to open a discussion about the link between systems thinking and operational research, as he lists six common elements between systems thinking and operational research:

- *context - complex problems arising in public and private enterprises and organizations and (usually) involving their interactions with society and the environment;*

- *method* - a synthesis of understanding, invention, analysis, design, intuition, judgement, and a scientific approach;
- *tools* - those of logic, statistics, mathematics, technology, and the sciences, employed by the multidisciplinary teams;
- *aim* - to assist finding ameliorative responses to problems through designing and evaluating programs, decisions and actions;
- *clients* - those with responsibilities for or interests in these ameliorative responses;
- *relation* - a continuing interaction between the analysis team and the clients throughout the work. (Miser and Quade, 1985:16)

2.4.3.2 Complexity

The promise of systems thinking of dealing with complexity and bringing sustainability has provoked various theoretical explanations over the last few decades as complexity is constantly growing. In observing systems thinking as a supportive tool for surviving and flourishing during times of growing complexity, we need to recognise its wide application, starting from the need for supporting national and institutional structures and organizations and finishing with individuals. The contemporary set of influences on systems thinking come from the so-called complexity-sciences, as well as arising from other recent developments characterized by interdisciplinary movements mainly in science studies (Ison, 2008). These movements started as a consequence of the increase in discussions and understandings about ‘risk’, the ‘networked’ society (Castells, 2004; Beck, 1992) and the spreading globalisation.

Globalisation in particular is linked to the raised awareness of situations associated with complexity, uncertainty, conflict, multiple perspectives, connectedness and multiple stake holdings (Ison, 2008; SLIM, 2004a). In addition, Ison (2008:146) makes a good point by arguing that there has been a transformation of the earlier understanding of the nature of situations. It was in the past described as ‘messes’ rather than ‘difficulties’ (Ackoff, 1974); as a ‘real-life swamp’ (Schon, 1995) rather than the ‘high-ground of technical rationality’, and as ‘wicked’ and ‘tame’ problems (Rittel and Webber, 1973). The difference between ‘tame’ and ‘wicked’ problems is that in the former, all of the parties involved are clear about what the problem is, in contrast to the latter, which are ill defined and ill structured. Furthermore, all the parties involved in ‘wicked problems’ have no clear perception of what the problem is.

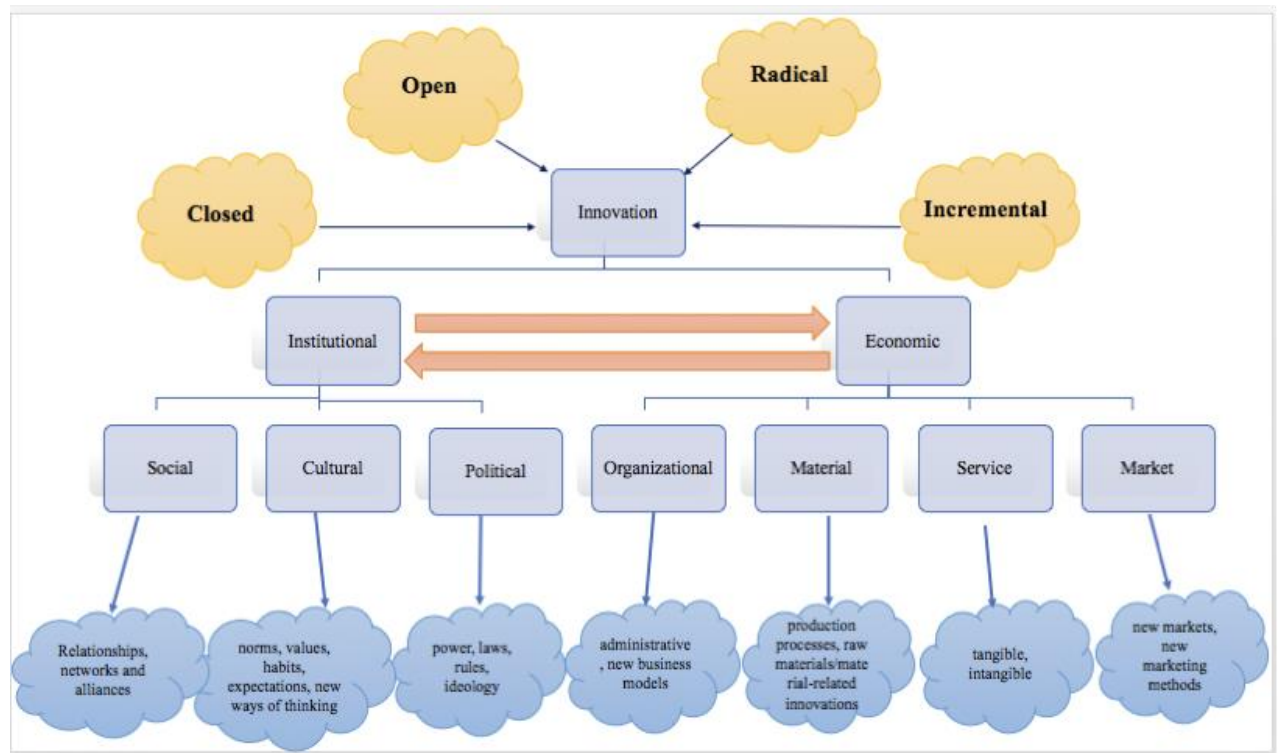
Theorists have identified three main aspects of systems thinking, which are directly related to dealing with complex problems: providing understanding (Beckman and Barry, 2007), constantly changing through learning (Bianchi, 2011) and the ability to see the big picture (Mele, Pels and Polese, 2010). The ability of systems thinking to provide the big picture outlook directly links it to holism theory. Historical accounts of systems thinking start with biologists, who consider that reductionist thinking loses the sense related to the phenomenon as a whole (Bertalanffy, 1968). In fact, as was previously mentioned, biologists were one of the initiators of creating the multidisciplinary project known as General Systems Theory (GST).

2.5 Innovation

2.5.1 Brief overview of innovation concepts and principles

Porter (1990) defines innovation as *'the process that uses the new knowledge, and the process that generates the new knowledge'*. The fundamental aim of innovation is to make all types of changes, starting with the radical and finishing with the incremental (Kuratko et al., 2014). These changes can be related to products, service and process, whose outcome adds value to organisational performance. Depending on the trajectory of the innovation, it can be categorised as radical, incremental or disruptive. Furthermore, innovation can be also used for fundamental changes in organisational and business models (Kuratko et al., 2014), especially in the case of strategic entrepreneurship. Fundamental changes can be related to strategy, products, models, management, culture and system. The main purpose of innovation is to improve the internal environment, and this will also affect the external organisational performance.

The figure below illustrates all types and principles of innovation. As can be seen from the figure, four main types of innovation – open, closed, radical and incremental – were reviewed. The model presented by Johanessen (2013), who classified innovation into two main correlated categories, economic and institutional, was adopted. These two main types are divided into sub-categories: social, cultural, political for institutional and organisational, material, service and market for economic.

Figure 4 Summary of types and categories of innovation

(Own figure based on the review of the literature)

Innovation drives competitiveness (Ferauge, 2012; Herrera, 2007; Mintzberg, 1994) and although it is mostly used as a mechanism for creating new market spaces, it can create a significant social impact (Herrera, 2015) because it involves breakthrough changes (Birchall, et. al, 2014). Innovations mostly have social impact in the cases of corporate social innovation, because stakeholders expect organisations to operate and establish market changes sustainably and responsibly (Kramer and Porter, 2011; Smith, Drumwright, and Gentile, 2010). In addition, innovation that aim to achieve social values increases competitive advantage (Herrera, 2015). These innovations are called ‘sustainable innovations’, because they offer an essential progress concerning social, economic and ecological matters (Arnold and Barth, 2012; Arnold and Hockerts, 2011).

The sustainable innovations are considered as challenging, because they have to combine economic value with environmental and social benefits (Rosca, Arnold and Bendul, 2016). However, innovations may have social and environmental impact, even they are not directly related to improving a business model, but even in the cases of product or service. Kim and Huarang, (2011), also points that the crucial role of innovation has been recognised by the business world since the global economy seeks to escape from recession. For this purpose, innovation has become a high priority for investors, who are now focusing their attention and investments to innovation and entrepreneurship. Innovation has achieved this

high level of recognition for its proven crucial role for organisational adaption, renewal, and gaining competitive advantage (Wu and Huarang, 2015).

2.5.2 Radical and fundamental innovations

Radical and fundamental innovations are sought by organisations not only to achieve sustainable success but even to prevent themselves from disappearing (Galanakis, 2006). The market environment is so ruthless that if organisations do not prepare next generation products and services, they have no place in the market. This is mostly valid for small companies, which do not own a large resource base. That innovation is not an isolated organisational process also needs to be taken into consideration. Although, innovation is mostly assumed to be a result of a ‘genius thought’ or a ‘sudden breakthrough’ (Brown, 2008), the findings from the literature show that this is an inappropriate assumption. Innovation arises in an environment of learning and hard work (Terjesen and Patel, 2017). The first level is to use the new knowledge, and the second is to gather it (Felin and Zenger, 2014).

2.5.3 Open and closed innovation

Innovation can be also categorised as open and closed. Open innovation has increased its recognition over the past decade (Felin and Zenger, 2014). To begin with, a brief explanation of what open and closed innovation is provided. The idea behind open innovation is to involve a wide range of external actors like customers, users, suppliers, universities and competitors. In other words, open innovation requires a lot of engagement with external stakeholders in order to access the external knowledge. The usage of external knowledge tends to improve innovation outcomes (West and Bogres, 2011), especially when it involves close interactions with universities and other governmental organisations (Fey and Birkinshaw, 2005). In contrast, closed innovation is orientated toward using and gathering new knowledge internally.

Companies using closed innovation are the ones that attract all the experts and knowledgeable people in their companies and do not have much external interaction (Chiaroni, Chisea and Frattini, 2010). The research in the literature shows that closed innovation is considered to be outdated (Felin and Zinger, 2014). Unsurprisingly, prosperous corporations like Apple, known for being outstanding innovators, use open innovation. Most

of the companies worldwide haven't moves from closed to open innovations yet, because innovation is a long process that involves a lot of uncertainty and a high risk of failure (He and Tian, 2013). However, they can no longer afford to resist the change of innovation model from open to close as innovations are not only a 'crucial driver' of economic growth (Thompson, 2018), but also a necessity for surviving the present times of uncertainty (Ortiz-Villajos and Sotoca, 2018).

2.5.4 Social innovation

Social innovation is a term that is liked by many scholars and practitioners, but no one is absolutely sure what its meaning is (Pol and Ville, 2009:881). Mulgan, Tucker and Ali (2007) see it as any activity that offers new approaches and solutions to old problems and issues. Parra-Requena et al. (2013) note that social innovations observe relationships, networks between and within social systems. Social innovation is also believed to be a process of endorsing institutional change (Heiskala and Hamalainen, 2007; Mair and Martí, 2006, Chalmers and Balau-Vnuk, 2012). North (1990), adds also that social innovation's 'main role is their decisive impact on the timing and efficiency of technologies adopted'. Yet, social innovations are believed to be related to the phenomena of social entrepreneurship and enterprise (Peredo and McLean, 2006). Ims and Zsolnai (2014) develop the claim that social innovations involve proposing original solutions to old societal problems and issues, which are more efficient, effective and sustainable than the existing ones. The literature review on social innovation, shows that the term innovation is mostly associated as 'something new' (Hellstrom (2004), which refers to the newness and originality of products and services created (Kimberly and Evanisko, 1981), and the process of introducing or adapting these new products and survives into a social context (Rogers, 2010). Moreover, the value generated by social innovations, must be of a benefit to the society as a whole, rather than to particular individuals. This is previously claimed by Gronhaug and Kaufmann (1988), who believes that social innovations not only create social values, rather than private values for investors, entrepreneurs and ordinary consumers, but their drivers are expected to have a reflection about ethics and values involved in the process of innovation.

However, literature also illustrates plenty of case studies, when innovations have benefited large groups in the Western societies (Ims and Zsolnai, 2014). However, there is not any proof that the same innovations applied in the context of developing countries, can create the same benefits for the society. For instance, in the past recent years, innovation was

predominantly associated with technological innovation, which benefits mainly the rich people, because of their purchasing power. Schumacher and Gabriele (1999:20-22) suggests three methods that have to be considered when innovations are introduced. Firstly, innovations have to create product or service that is cheap enough, so a greater share of the society can benefit. Second, they must be flexible to be applied in a small-scale. Last but not least, they need to match humans' need for creativity. At the same time, the role the cultural context for innovation should also be considered (Farvar and Milton, 1972). Therefore, Norberg-Hodge (2000) offers deep insight into the threat for the traditional cultures and local communities coming from the Western 'hard' technologies, which are used to support the process of economic progress.

Generally, social innovation can be either a product, process or technology of production, but it can also be an idea, principle, intervention, legislation, a social movement, or a combination (Phills, Deiglmeier, and Miller, 2008). An example of social innovation is innovation in an education system that has been transformed into a modern education system (Johannessen, 2013). Giddens (1979) proposes that in the literature social theory is illustrated as a combination of both actions and behaviour, which both characterise the innovation process. This makes the nature of innovation quite complex, because human actions are illustrated in the literature as intentional and goal-directed, which is totally opposite of the behaviour, believed to be automatic and unintentional. In this respect, Hellstrom (2004) draws our attention to the fact that theoretically innovation process is associated with behaviour-biased and behaviourist conception. Tidd et al. (2001:18-19) illustrates the process of innovation as uncertain and complex, where luck plays a significant part, as there are case studies, where success is accidental. Repeating the trick is actually the real success.

This involves both practice and learning. Literature on social innovation has been increasing since late 1990s, as a result of the complex and fragile state of the global economy. Nowadays, innovation is progressively believed to be one of the main drivers of sustainability and long-term success for organisations, required to operate on a highly competitive environment (Bruni and Verona, 2009; García-Morales, Llorens-Montes and Verdú-Jover, 2008). In this regard, Brown and Eisenhard (1995) take the view that organisations with bigger capacity to innovate are better and faster in adapting to environmental challenges compared to those that are less able to innovate. Technological innovations and globalizations have helped many states to achieve growth in their economies, which resulted in an increased inequity and inequality (Herrera, 2016). In addition, (Gonzalez-Pernia, Pena-Legazkue and Vendrell-Herrero, 2012; Ranieri and

Ramos, 2013) argue also that the literature on inclusive growth (IG) absolutely disapproves the assumptions that only the basic presence of economic growth automatically benefits the entire population. The value of social innovation, when it comes to the public management is directly related to the changes and transformation of the organisation of social actions (Adams and Hess, 2010). Moreover, Herrera (2015b) proposes that the inequity and social exclusion are naturally arising from complexity and variety of underlying factors' interplay. Achieving sustainable inclusive growth and systemic societal change can only result from addressing root causes affecting the access to critical resources such as education and capital, and a significant social innovation (Herrera, 2016).

Social innovation has become a focus of significant research from scholars, practitioners and policy makers (Shaw and Bruin, 2013). When it comes to national social innovation, the national innovative capacity is strictly dependant on the institutions within the state (Van Waarden, 2001). The concept 'institutions' has been predominantly reduced to organizations providing a variety of resources, possibility and constrains for innovation (e.g. bank, capital providers, research organisations, unions and standardisation agencies). Moreover, the quality of interactions and collaboration between institutions with a different role and contribution to the process of innovation, is what in fact enhance the innovative capacity. However, depends on the context they operate in, institutions can be more or less influenced by policies, regulations and norms (Van Waarden, 2001). This additionally complicates the process of social innovations, as it is commonly believed among scholars and economists that regulations have negative impact on innovation. In fact, de-regulation is suggested as an effective receipt for increasing innovative capacity for both organisations and economies (Van Waarden, 2001). Although freedom is believed to be essential condition for innovations to occur, still many economists associate 'freedom' with negative rights and lack of governmental interference (Scully, 1992:11). The highly contrasted views on whether 'freedom' is positive or negative for enhancing innovative capacity, are a result of difference in the understanding of the term 'freedom'. Fromm (1995) notes that the term 'freedom' can be either understood as 'freedom from interference' or 'freedom to engage in transactions'.

The role of freedom, openness and interaction is highlighted also by Windrum, Schartinger, Rubalcaba, Gallouj and Toivonen (2016), who link social innovation theories with the concept of multi-agent co-creation. The current literature on co-creation abounds with examples of co-creation process, which might be very simple (involving only organisations and consumers) or more complex (involving multiple agents such as policy makers, public sector providers or non-profit organizations). Co-creation and co-

development involving multiple agents is believed to be a crucial factor when it comes to implementing sustainable social innovations (Windrum and García-Goni, 2008). In addition, Windrum and García-Goni (2008) are the first ones who applied the multi-agent framework to social innovation, which has been attracting more scholar interest for its ability to get along with pressing social, economic and environmental challenges facing society. Multi-agent and multilateral networks usually are part of the process of social innovation as they are organised to design, deliver and sustain new changes (Windrum et al., 2016). For instance, the integration of CSR within business strategies and models is commonly observed in social innovations, which aim to develop and improve services offered in private, public and non-for-profit sectors (Altuna, Contri, Dell’Era, Frattini and Maccarrone, 2015).

Third sector organisations, known for their increasing professional orientation, play a major role in social innovations by operating in social services and other public sector services (e.g. education) and proposing a wide range of solutions for the existing social challenges (Windrum et al., 2016). Moreover, policy makers and researchers are also engaging in social innovations together with voluntary, social community enterprises. In their study, Mulgan, Tucker, Rushanara, and Sanders, (2007) put forward the claim that social entrepreneurs are much better in delivering more effective and efficient social services compared to the public bureaucracies, as they possess more knowledge for the specific needs of the consumers and skills how to compose efficient solutions to meet these needs. The focus of the public bureaucracies is more orientated toward meeting the needs of the average individual, and with the ethical and social impacts of their social innovations (OECD, 2010; European Commission, 2010; Callon and Rabeharisoa, 2008).

2.5.4.1 Social innovation in Higher Education

There has been observed increased moves toward researching on innovation in education in the recent years, probably because of the growth of both public and private services in both developed and developing countries (The World Bank Group, 2015). As a result of this growth, an overlapping between service innovations and social innovations has occurred. An example of an overlapping between social innovation and service innovations is education (higher education institutions and systems), as social innovation theories are correlated to sociology and political science and a change in the education system has both social and political aspects (Windrum et al., 2016). Parziale and Scotti (2016)’s

research has provided ample support for the assertion that there is a positive relationship between investment in education and economic development as top of the human capital theory and potential economic return of schooling (Cunha and Heckman, 2009; Hemerijck, 2012; Morel, Palier and Palme, 2012). In contrast to theories, which examine the reproduction of social inequalities by the education systems (e.g. Esping-Andersen, 2005, 2013; Bowles and Gintis, 2003; Bukodi and Goldthorpe, 2012; Goldthorpe and Jackson, 2008), who focuses on educational policies addressing socio-economic inequalities. Parziale and Scotti (2016) propose a theory orientated analysing the relationship between investments in education and socio-economic development.

The reason why exactly investments in education affect positively the socio-economic development, is rooted in the fact that higher education institutions (HEI) are the drivers of growth and development for countries (Hasanefendic, Birkholz, Horta and Sijde, 2017) because of their natural ability to innovate (Crosling, Nair, and Vaithilingam 2015). Furthermore, universities are considered to be the main generators of innovation for establishing improved and original services and products related to training, expertise and human resources (i.e. potential innovators) to societies and organizations (Al-Husseini and Ebeltagi 2016). Higher education innovation is perceived as an outcome of changes in both economic and regional contexts in which HEIs are operating (Pinheiro, Geschwind, and Aarrevaara, 2014; Pinheiro, Geschwind and Aaaevaara, 2016), as well as emerging from changes in public policies affecting HEIs organisations (*e.g. Richmond 2015*). This however, does not fully capture the complexity of the phenomena of social innovation, which involves three main levels: system, institutional and individual (Jepperson and Meyer 2011). The multi-stage nature of innovation process is recognised by (Baregheh, Rowley and Sambrook 2009: 1334), who propose also that this involves transformation of ideas into improved services and products by which organisations position themselves better in the market.

When social innovations are observed in the context of higher education, there have to be explored within the limitation of two mainstream bodies in the literature (Hasanefendic, et al., 2017): one seeing innovations in higher education (IHE) as a process of institutional adaptation to the environmental challenges (Chatteron and Goddard, 2000), and other seeing IHE as depending on the internal characteristics of HEIs (Kezar and Eckel, 2002). Moreover, the first body of literature also describes that multiple governance adjustments and professional identities of organisational actors exist synchronously (Dee and Leisyte, 2016) to create novel and improved practices for innovation in order to face the environmental challenges. These practices can be found in many levels and forms such as institutional

structures and circling programs (McClure 2015; Davis and Jacobsen, 2014). For instance, Merton, Froyd, Clark and Richardson (2009) has found that the norms and values of institutions affect the success of changes and transformations. This is also argued by (Fumasoli, Pinheiro, and Stensaker 2015) who explain that institutional structures consist of authority, communication, rights and obligations, which impact the successful implementation of innovation at institutional level, as the identity of HEIs is directly related to their strategy-creating capabilities. The second literature body examines also the role of university culture for the innovation success (Kezar and Eckel 2002).

The role of these two literature bodies is to grasp both external (system) and internal (institutional i.e. culture, identity and structure) features of universities affect their ability to innovate and face the environmental pressures. Existing literature highlights on the norms and values of HEIs's departments and disciplines, which typifies their institutions (*e.g. Christensen and Eyring 2011; Dee and Leišytė, 2016*). The institutional constrains, norms and values incorporated in the organisational structure and culture, complicate the innovation process for academics, who by default tend to prefer to keep the status quo (*Hacker and Dreifus 2010*). Moreover, Dobele and Rundle-Theile (2015) suggest also that innovation process is complicated task for academics, as they are influenced by competition and management, where they are encouraged and awarded only as individual performers. Higher education systems are organised in a way to encourage the individualistic goals (*e.g. research and contribution to their specific academic field*), but not the collegial environment, which affects negatively their institutional involved and progress. Furthermore, Horta, Dautel and Veloso (2012) suggest also that there is a conflict between teaching and research in a favour to research, as academics get promoted based on their research activity and performance not because of their teaching. Yet, in such environments there are cases when academics are involved in institutional changes (Hasanefendic, et al., 2017). For instance, deans often play a significant role in driving innovation in universities (Lattuca and Pollard, 2016).

2.6 Systems thinking for social innovation

The world is getting more dynamic and complex (Gharajedaghi, 2011). Schools and universities have a big responsibility to prepare their students for this increasingly complex and interdependent world. Senge et al. (2012) argue that people are required to act with greater autonomy in every aspect of their lives. That is why Senge et al. (2012) believe that

the five disciplines of organisational learning are able to deliver the promise of building this type of perspective and skill. The five disciplines identified by Senge (2006) are: personal mastery, shared vision, mental models, team learning and systems thinking. This research project adopts systems thinking and design thinking perspective in explaining the complex phenomenon of social innovation in the context of higher education, which is considered to be incredibly complicated task (Kimbell, 2011). The review of the literature of innovation theory indicates five components of innovation, to which systems thinking theory can add value: change (Bianchi et al., 2011), interactions (Martin-de Castro, 2015), understanding (Beckman and Barry, 2007), complexity (Fellin and Zinger, 2014) and big picture perspective (Mele, Pels and Polese, 2010).

Systems thinking involves interactions and collaboration within a group to devise alternative ways of composing satisfactory results after critical reviews of potential solutions and ideas. The whole process involves many trials and errors, which are critically evaluated until the optimized solution to problems is proposed (Dougherty, 2008). In organisational context, design involves visualisation (Bjogvinsson, Ehn and Hillgren, 2012). In systems thinking, visualization is seen as a 'vision' (Senge, 2006). Systematic thinkers (leaders) must have a 'vision' so that they design a system or a whole organisation thanks to this vision. Due to the current unpredictable and chaotic socio-economic environment, the role of design is a matter of a great importance (Senge, 2006; Sterman, 2010), because organisations are constantly challenged by external forces, which requires the building of adaptive systems. Therefore, it is designers' responsibility to design whole systems and organisations in a way to be adaptive to the constantly changing environment, or design only particular components such as products, services, communication, environment and interactions (Cooper et al., 2009). Systems thinking is capable of addressing fundamental problems at an organisational level (Head and Alford, 2013). Despite the massive interest in the importance of innovation, organizations' understanding of innovation process is still very limited (Terjesen and Patel, 2017). Every organisation aims to implement innovation, but only a few really understand the innovation process, and even fewer can enjoy that experience. The development of the innovation process is a very slow process because it requires a lot of trial-and-error learning for the whole of its potential to be realised (Terjesen and Patel, 2017).

The environment is constantly changing, which does not allow organisations to stay in a static motion. Organisational transformation requires re-designing of the entire organisational structure, culture and setting a clear vision (Cooper et al., 2009). The designing or re-designing cannot be isolated from 'risk-taking', as it involves addressing complex problems, problem-solving, innovation, creating new visions and creating

alternative scenarios, which have always chance to fail (Huq and Gilbert, 2017). Systems thinking approach involves examination of problems at a fundamental level (Senge, 1990). Therefore, it is not surprising that Terjesen and Patel (2017) have discovered a positive relationship between ‘search depth’ and ‘innovation’. Traditional problem approaches can never deliver effective solution, because if the solution is that obvious the issue would have already been resolved (Senge, 2006). For example, literature search shows that companies like Starbucks, Toyota, Google and Apple, which are constantly looking for innovation. Furthermore, many countries, such as the US, China, India, Korea and Singapore, tend to invest money in design schools and programs or in educational systems that implement innovation through organisational learning (Beckman and Barry, 2007; Ison, 2016).

2.7 RESEARCH GAP

Development of technological innovations, used as economy supporting tools of the global economy, has created a demand for conducting research on social innovation. Social innovations are believed to fight against the negative consequences of the excessive economic growth and technological development (Ims and Zsolnai, 2014). For example, Ims and Zsolnai (2014) give insight into the factors making innovation successful for the developing countries by reviewing multiple case studies, but none of these case studies does not involve social innovation in the context of education or higher education. Despite the growing interest among scholars and researchers about social innovation, there is a deficiency of empirical research examining it. Windrum et al. (2016), which study on social innovation theories is also based on reviewing multiple case studies, claim that social innovation suffers from mis-measurement. They also argue that research efforts are necessary in this field. This is also supported by Adams and Hess (2010), who are convinced that there is a mismatch between the practice and theory in terms of the development and understanding social innovation phenomenon. They argue that the practice, which is led by innovative community sector and public managers, is much more advanced in comparison to the theory, which is expected to propose developed models of practice.

Theoretical research on social innovation has been an object of criticism for being ‘fragmented’ and ‘non-cumulative’ (Cajaiba-Santana, 2014; Dawson and Daniel, 2010; Pol and Ville, 2009). Social innovation has a quite young and unsettled history, which highlights the importance of both inter and multidisciplinary approaches (van der Have and Rubalcaba, 2016). Shaw and Bruin (2013), argue that more research on innovation outside of a

traditional science and technology is essential, as it will give more insights into innovation within social settings where both theory and context need to be considered. Freeman (1995) and Lundvall (1995)' systems of innovations framework is probably able to propose a potential both the actors and interactions involved in social innovation to be identified. In this respect, Baltazar and Herrera (2016) propose that a quality research on social innovation involves researching from multiple perceptions (e.g. policymakers, leaders of social change, educators, and researcher). For instance, Parziale and Scotti (2016)'s conceptual work involves combining two different perspectives: political and economic, in order to identify the relation between investment in education and economic development. An example of an empirical research on social innovation is the work of Maclean, Harvey and Gordon (2012), who conduct in-depth case study research to build on social innovation theory. However, they identify the limitations of their findings in the fact that they are based on one case study from a single organisation.

A comparative study involving multiple organisation, might have further insights on social innovation (Maclean, Harvey and Gordon, 2012). Furthermore, their work examines social innovation from a social entrepreneurship perspective only. For instance, Chalmers and Balan-Vnuk (2012) examine 14 case studies in their study, which focuses on the absorptive capacity and organisational ability to innovate, which is also considered as a limitation, as reviewing so many case studies from multiple industries is seen as a static approach to analysis. Challenges of the theoretical examining of social innovations is also discussed by Shaw and Bruin (2013), who argue that in order a depth and breadth of knowledge to be achieved, more than statistical comparisons are required. Furthermore, they also suggest that social innovations might be tested through a variety of research methods, including large-scale quantitative studies, as well as longitudinal, case-based research (Short, Moss and Lumpkin, 2009). Different methodologies are selected and applied accordingly to the topics and the research objectives. Quantitative research on social innovation is necessary for comparative studies aiming to generate substantial data on the impact, size and scale of social innovation (Shaw and Bruin, 2013). Qualitative research on social innovations, on the other hand, goes beyond description (Short et al., 2009) and offers insight on the context and process of social innovation for expanding the broadness of knowledge about contemporary significant phenomena like social innovation.

For this reason, they discuss the role of the context in which social innovation can occur, as the context is vital for theory for gaining knowledge and understanding. Therefore, the most efficient way to research on social innovation, involves searching for diverse context, where social innovation can be found (Shaw and Bruin, 2013). Moreover, three

main dimensions of context were identified to have impact on social innovation, social behaviours and social actions: institutional (Joob, Welter, Richert and Jeschke 2011), temporal (Schilling and Phelps, 2007), and economic environments (Wright and Marlow, 2012). Shaw and Bruin (2013) also identified the significant relevance of other context dimensions such as the socio-economic history and prevailing political ideologies of different economies for understanding social innovation. They discuss that the impact of neo-liberal policies on social innovations are debated in contrast to the political ideologies, socioeconomic histories of nation-states, and policy environments, which effect is undeniable. The location and place of where the social innovation takes place, are also seen as important, as in most of the cases social innovations are locally targeted and placed (Shaw and Bruin, 2013).

Therefore, the context of this study was chosen, because of two main reasons: higher education innovations and reforms are essential (Fatkullina et al., 2015) and social innovations in the developing countries might be affected by the fact that those countries are less advantaged, compared to the ones in the developed countries (Mariana, 2015). Developing countries are considered to be disadvantaged for the lack of adequate and efficient higher education and brain drain, which according to Mariana (2015) affects negatively the capability of these countries to improve both their local and national governance, which impacts also their ability to develop socially and economically.

Another aspect of innovation in the higher education context is related to the role of the academics as actors in driving institutional innovation, as there are examples in the literature when personal beliefs, past experiences and current motivations and practices might collectively affect the individual decision to get involved in a process of change (Lattuca and Pollard, 2016). When it comes to social innovations Japperson and Meyer (2011) identify that there are three levels of analysis or stages: individual (micro), institutional/organisational (meso) and system (macro), as innovation is a 'multi-stage' process. Moreover, as suggested by Jepperson and Meyer (2011) social theories require multiple levels of analysis where both the micro and the macro perspectives are considered and usually the approach is macro-to-micro-to-macro (Coleman, 1987). Organisational behavior field develops and establishes itself as social science, which makes the adoption of a multi-level approach vital, as it involves the integration of different levels of human activity relevant to organisations (Rousseau, 1985:2). Traditionally, systems are sliced into organisations, groups and individual levels, where each level requires different approach, theories and disciplines (Kozlowski and Klein, 2000).

The organisational science started moving toward developing methodological paradigm, which is multilevel approach based (Kozlowski and Klein, 2000). The purpose of this approach is to go beyond the purely descriptive approach by seeking to account for the unique chain of events that lead from one situation to another (Hedstrom and Swedberg, 1998:2). Multiple levels approach and mechanism also fundamentally used to explain and explore a wide range of social situations and problems (Hedstrom and Swedberg, 1998). The multilevel approach gives an equal importance to both ‘bottom-up’ and ‘top-down’ processes in contrast to the most common organisational approaches which are only top-down based. The top-down approach examines how the macro levels (organisations or groups) influence the micro levels (individuals), while the bottom-up approach is entirely opposite (Kozlowski and Klein, 2000).

The foundations for the multilevel theory in organisations are linked to the General System Theory (GST) that was already discussed in the previous sections of this chapter (von, Bertalanffy, 1972 in Kozlowski and Klein, 2000). The link between the multilevel theory and the GST is in their holistic approach and ability to establish principles that generalise across phenomena. Furthermore, the primary objective of the multilevel approach is to recognise principles that enable a more integrated understanding of phenomena that unfold across levels in both systems and organisations (Kozlowski and Klein, 2000:5). Multilevel theory provokes organisational scholars to think both ‘micro and macro’, not simply ‘macro’ or ‘micro’ (Rousseau, 1985). According to Japperson and Meyer (2011) and Kozlowski and Klein (2000) the levels of the multilevel theory depend on the purpose and design of the study (i.e. individuals, groups, organisations, cultural/national etc.). In the case of this study the three levels are defined as follows:

- Individual level (micro level) refers to the social-psychological processes, ‘elementary social behaviour’ (i.e. interaction in small groups); collective behaviour (Japperson and Meyer, 2011:61).
- Organisational level also known as an institutional level (meso level) is associated with structures, set of rituals, norms, values, and implication of public policies (Campbell and O’Meara, 2014; Hasanefendic et al., 2017).
- System level (macro) refers to public policies, regulations, laws, strategies, control and assessment (Japperson and Meyer, 2011).

The figure below illustrates the explanation of each of the levels in the multi-level analysis, as well as the context which is seen as a key determining factor in the examination of both social innovation and organisational learning (Ponnuswamy and Manohar, 2016). As

it is evident from the figure below, this study involves ‘vertical borrowing’, which incorporates different levels of analysis in contrast to ‘horizontal borrowing’ (Whetten, Felin and King, 2009).

Figure 5. Explanation and definitions of each of the levels in the multiple levels of analysis.

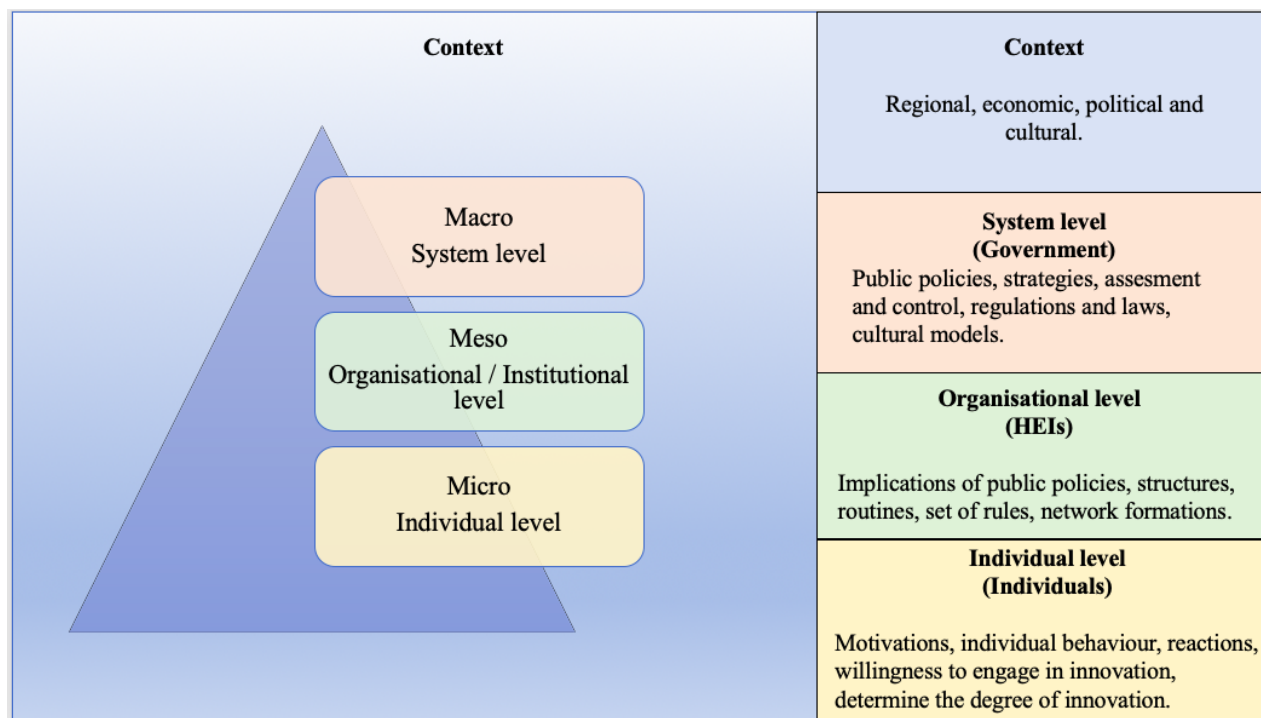


Figure 5. Explanation and definitions of each of the levels in the multiple levels of analysis.

According to the literature, the most domineering approach in social sciences is the doctrinal methodological individualism (Japperson and Meyer, 2011). The doctrinal individualism dispenses with any entirely system-level interconnection, where the collective effects are ignored (Japperson and Meyer, 2011:59; Coleman, 1990;). This approach is criticised by scholars like Japperson and Meyer (2011), who argue that that the explanatory studies should involve rather ‘higher-level’ explanations rather than ‘lower-level’ explanations. Moreover, the ‘lower-level’ explanations that are related to the individualistic approach is seen as too ‘heterogenic’ and complex to be theorized (Fodor 1997; Goldstein 1956; Simon 1962; Stinchcombe 1991). Hence, the multiple analysis is identified as an alternative to the individualistic methodological approach (Japperson and Meyer, 2011). Scholars like Coleman (1990) set the development of macro-level of system behaviour as a primary objective of their research. Despite the disadvantages of adopting individualistic approach in studies that are explanatory in nature, this is still the most conventional methodological choice (Japperson and Meyer, 2011).

Therefore, this thesis offers a system behaviour explanation through the adoption of a systemic outlook, which includes both multiple levels of analysis (individual, institutional and system) and consideration about the context, as ignoring some of the previous levels (individual and institutional) will only lead to a ‘fictional holism’ (Bunge, 2000:396). The review of the latest relevant literature focusing on the modernisation, change and innovation within the higher education context, shows that the doctrinal methodological individualism still prevails over more holistic and systemic approaches (i.e. Hasanefendic, et al. 2017; Rossano-Rivero, 2018; Aldahdouh, Nokelainen and Korhonen, 2018). All of the prior studies listed above stress on the importance of conducting a future research that moves beyond the institutional environment alone. Yet, the role of individuals and institutions in the process of innovation (Hasanefendic et al., 2017; Saad, Guermat and Brodie, 2015), as national social innovations depend on the institutions within the state (Waarden, 2001).

As suggested by Hedstrom and Swedberg (1998) social theories should be explanatory rather than conceptual and sensitising schemes. Therefore, this research project adopts qualitative research methods (in-depth interviews) from multiple perspectives (i.e. academics, experts, managers and policy makers). The reason why systems thinking methodology has been selected is because it gives understanding about the big picture by comparing and contrasting different viewpoints (Checkland, 1990). Furthermore, as it was already mentioned there is a need for examining social innovations in different contexts (Shaw and Bruin, 2013; Wright and Marlow, 2012; Hasanefendic et al., 2017) with an emphasis on the importance of the socio-political history (Shaw and Bruin, 2013). Therefore, this project aims to gain an insight of the social innovation phenomenon by examining it in the context of higher education systems in the developing countries. By doing this, this study contributes both methodologically and empirically to the development of the social theories and social innovation literature in particular.

In order this research and methodological gap to be filled, the following research questions, aims and objectives have been outlined:

1. What are the main challenges and issues of the higher education system in Bulgaria?
2. What are the barriers and drivers for the implementation of strategic reforms and innovations in the higher education system in Bulgaria?
3. What are the internal and external factors that influences the transformation of the higher education system in Bulgaria?

Chapter 3 Methodology

3.1 Chapter Introduction

This thesis is interested in gaining deeper and richer understanding about the phenomenon of social innovation, which stresses on the importance of the context, in which social innovation can occur. Examining social innovation in diverse context is essential for theory to gain knowledge and understanding (Shaw and Bruin, 2013). For this purpose, higher education system in Bulgaria was chosen as a context of this study, as there are two main reasons: first, innovation in higher education system, which transforms it into a modern higher education system, is a social innovation (Johannessen, 2013); second the context of Bulgaria similarly to other post-communist countries, is characterised with a specific political, social and economic environment, which resulted from transforming of the state from the socialist socio-economic history to its current state of a member of the European union (Slantcheva-Durst, 2010). The search in the literature illustrates a gap in examining social innovations in higher education from a systemic perspective, which captures the big picture. Therefore, a soft system thinking methodology has been adopted to build on the theoretical knowledge, about social innovation, by comparing and contrasting different subjective viewpoints, to create a big picture of the situation in the Bulgarian higher education system affecting innovation within the system. In addition, design thinking theory has also been reviewed, as the literature identifies as a tool, which supports systems thinking (Gharajedaghi, 2011, Senge, 1990; Senge, 2006; Kimbell, 2009), and innovation process (Huq and Gilbert, 2017).

This chapter discusses the methodological choices, approaches and analysis adapted to bring understanding about both social innovation and the context in which it is observed from a systemic perspective. The complexity of the research problem, requires a qualitative approach in a given context and in particular in-depth interviews with the three main stakeholder groups, responsible for the design, governance and management of higher education system in Bulgaria: university top management (rectors, deans and head of departments), experts (experts in education and innovation), as well as policy makers (representatives of the three branches of government, which includes ex-education minister,

ex-prime minister, deputy chairman of the Education science committee in the National Assembly of Republic of Bulgaria, and the chairman of the Constitutional Court of Republic of Bulgaria. Together with their administrative and governmental positions, all the participants are still active academics.

3.2 Research Paradigm

The philosophical position taken by the researcher will establish the methodology required. Although there are numerous philosophical positions and variants outlined in literature, systems thinking is a subject that requires a specific approach. This is argued by Richmond (2001), who suggests that quantitative methods are not very suitable to measuring systems thinking. Moreover, Richmond (2001) proposes that one can always quantify but not measure. For this reason, qualitative research methods are adopted. The ‘research onion’ presented by, Saunders Lewis and Thornhill (2012) helps the researcher to identify the best methodological approach and strategy for this specific research topic and to build the plan of how the research can be conducted.

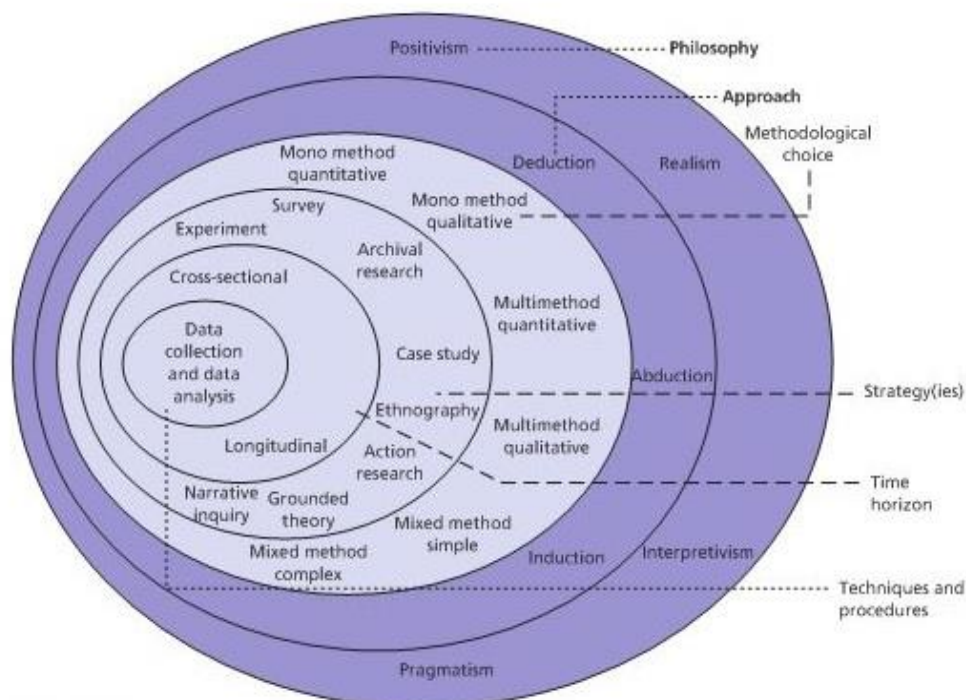


Figure 6. The research ‘onion’.

(Source: Saunders, Lewis and Thornhill 2012: 128).

Subjectivism sees the objective aspects of management as less important than the way managers attach their own individual meanings to their job and to their idea of how this job has to be performed (Saunders, Lewis and Thornhill, 2012). The reason why the philosophy of subjectivism is adopted by the researcher is because subjectivists believe that:

“Social phenomena are created from the perceptions and consequent actions of social actors”(Saunders et al., 2012: 132).

Saunders, Lewis and Thornhill (2012) argue that the details of a situation are a significant issue in subjective philosophy, as it is the details that help the researcher to get a clear perception of what occurs in the reality behind what is happening. Moreover, the authors also suggest that subjectivism is always associated with social constructionism. The interpretations of social actors about reality can affect their interactions and actions. Gharajedaghi (2011) also recognises the significant role of the assumptions and perceptions of social actors and how they affect their interactions and the whole system in general. For instance, Singer (1959:111), argues that:

‘There is no fundamental truth; realities first have to be assumed in order to be learned’.

The literature search shows that organisational culture is the focus of systems thinking, as its purpose is mainly to change and improve it (Senge, 2006). The approach to organisational culture is also an influential factor for the researcher to choose a subjective philosophy rather than an objective one, for example. In this line of thinking, Millmore and Lewis (2007) propose that objectivists observe the organisational culture as something that the organisation ‘has’ while subjectivists observe it as something that the organisation ‘is’. In addition, Saunders et al. (2012) argue also that the objective viewpoint is that culture can be easily changed and manipulated, which is a descendent of the subjective viewpoint, which believes that organisational culture can be created and re-created through complex phenomena based on social interactions, rituals and myths. Gharajedaghi (2011) and Senge (2006) emphasise the role of systems thinking in the creation and re-creation of organisational culture. For this reason, the philosophy of subjectivism is the most relevant for this particular research.

Ontological concepts are adopted in this research project. Saunders et al. (2012) suggest that interpretative and subjectivism are inextricably linked with one another. In addition, interpretivism is a philosophical position that can be usefully employed to reflect the research approach as it observes the social business world as being too complex to simply use definite laws (Saunders, Lewis and Thornhill, 2012). Furthermore, Saunders, Lewis and Thornhill (2012) propose that unlike positivism, interpretivism does not consider law-like generalisations to be valid in complex systems such as social systems. The interpretative philosophy like subjectivism emphasises the role of social actors.

3.3 Research philosophy

The research approach that the researcher chooses to adopt in this research project is the one of induction. The first reason behind this choice is that the induction approach allows the researcher to understand better the nature of the problem or the situation (Saunders et al., 2012). The difference between the deductive and inductive approach is that the first one tests what is already in the literature, while the second one creates conceptual framework based on the primary data (Saunders et al., 2012). Furthermore, usually research projects that adopt an inductive approach start with interviewing their target audience to get a clearer perception of the situation, and, based on the data collected, other research methods are undertaken (e.g. focus groups). Saunders et al. (2012), also argue that deductive approaches are more relevant for natural science, while inductive ones are more relevant for social science, as they not only observe the cause and effect between the variables but also provide an understanding of the way human beings interpret their social world. The inductive approach recognises the importance of the context in which the events take place, which logically directs the researcher to focus on qualitative research methods (Saunders et al., 2012; Easterby-Smith et al., 2008).

3.4 Research strategy

Saunders et al. (2012) propose that qualitative research methods are associated with a number of strategies, such as action research, case study research, ethnography, grounded theory and narrative research. At first, the researcher considered conducting action research as this is a strategy that:

'promotes organisational learning to produce practical outcomes through identifying issues, planning action, taking action and evaluating action' - (Saunders et al., 2012:183).

However, this strategy is unachievable and inappropriate because of the time limit of the doctoral research project as well as some other additional obstacles. On the one hand, systems thinking and innovation are based on continuous learning and are associated with long-term strategies (Brown, 2008), which means that at least one decade will be needed for the effect of these strategies to be discerned (Terjesen and Patel, 2017). On the other hand, the education system in Bulgaria is very conservative and closed to initiatives promoting changes involving external actors. This will be explained in detail in the next chapter when the results from the data collection are presented. As it was recognised that action research strategy is not appropriate in the case of this study in terms of the above-listed limitations, the strategy of a case study was identified to be the most optimal and relevant one. Saunders et al. (2012:179) suggest that:

'a case study explores a research topic or phenomenon within its context'.

3.5 Case study

Although the case study strategy was not the first strategy that was considered at the beginning, it is in fact the most relevant one to be adopted in the case of this research project as it provides a rich understanding of the context of the research together with the process (Eisenhardt and Graebner, 2007), which is vital when social innovations are examined (Shaw and Bruin, 2013). The subject of case studies is social entities, such as organisations, communities or social groups, which can be studied by applying a variety of data collection techniques. The idea behind the implementation of a case study is that it is a strategy that is associated with a more in-depth and holistic approach than any other research design (Hakim, 2000). What differentiates the strategy of a case study from other research strategies is that it is designed to understand and explain complex social phenomena by capturing the significant characteristics of real-life events. For this reason, case studies have been commonly adopted in organisational studies as they aim to provide a rich analysis of the social and organisational processes and context (Hartley, 2004).

Case studies are widely used when it comes to organisations in the public sector or those that are strongly related to it because they involve policy considerations and management issues. Moreover, case study research is the perfect research strategy for exploring contextual factors related to the phenomenon examined, which makes it broadly

useful for understanding and explaining organizational change. Yin (2009) suggests that a case study strategy is a flexible strategy in terms of research methods, as it can be achieved through collecting either quantitative and qualitative data or a mixed approach. In this case, a qualitative research method (interviews) is adopted, as this is the method that provides a deep understanding about both the context and the process. Furthermore, some sources state that case studies involve the adoption of more than one research method of data collection (Hakim, 2000; Yin, 2003; Hartley, 2004) because this allows investigation of the effects of historical pressures, contextual influences and the dynamics between and among stakeholder groups; the usage of more than one method is not necessary in the case of this research project, as triangulated data is used instead. The case study for this study is the education system in Bulgaria and, in particular, higher education. Data has been collected from three groups of education leaders: university top managers, policy makers and experts.

Group 1 (University top management) – university rectors, faculty deans, and heads of departments.

Group 2 (Policy makers) – Vice-chairman of the Education and Science Committee in the National Assembly of the Republic of Bulgaria, Ex-Attorney General of the Republic of Bulgaria and current Chairman of the Constitutional Court, as well as a head of a university department.

Group 3 (Experts) – Experts in innovation from the Ministry of Education in the Republic of Bulgaria, ex-minister of education and science and current head of university department, ex-prime minister of the Republic of Bulgaria and current head of university department, Professor of History and receiver of a Great Plato Nobel Award of the Century awarded by The World Plato Academy.

As can be seen, all of the representatives of the three groups have in parallel university management positions. The three groups of interviewees form a triangulated data system. Multiple data sources enable case studies to deliver more rounded and complete accounts of social issues and process (Hakim, 2000; Yin, 2009). The fact that the case study strategy is able to provide answers of the questions ‘what’, ‘why’ and ‘how’ (Saunders et al., 2012) makes it a preferred research strategy to be adopted when the investigator has limited control over events and the focus is on a contemporary phenomenon within a real-life context.

Data was collected from three sources (groups) through interviews. The aim of the data collection was to understand the organisational setting of the higher education system in Bulgaria, that is, how it is organised and how it operates, as well as, gaining insight about

the context. Details of the principle of selection will be presented in the final thesis.

In this research project, the focus is on understanding how the context and the management of higher education system impact the process of innovation within the system, as the literature review has identified innovation as a contemporary, contextual and systematic phenomenon (Smith, 2000). In other words, this study aims to identify what enables and what prevents innovation in the higher education system.

Baxter and Jack (2008) suggest there are three types of case studies: descriptive, exploratory, explanatory, multiple case studies, intrinsic, instrumental and collective. In the case of this research, the type of case study adopted is the one of 'instrumental case study', as 'it provides insight into an issue or helps to refine a theory' (Baxter and Jack, 2008:549). Case study in general is a type of strategy that provides understanding of a particular phenomenon (Stake, 2003). The case of this study is still being examined in an in-depth matter, but the purpose is for the researcher to gain an understanding of what factors affect innovations in the education system.

The usage of this method requires enough details to be provided in order for the readers to evaluate the validity or credibility of the work. Furthermore, Baxter and Jack (2008) propose that there are five aspects forming a solid foundation, which need to be carefully considered when a case study strategy is adopted (Russell, Gregory, Ploeg, DiCenso and Guyatt, 2005):

1. The case study research question is clearly written, suggestions are provided and the question is validated.
2. The case study design is suitable for the research question.
3. Purposeful sampling strategies appropriate to the case study have been applied.
4. Data is systematically collected and managed.
5. Data is analysed correctly.

There are numerous strategies that promote data the validation and credibility of the case study. In this study, the triangulation of data sources is used as a primary strategy to guarantee that the phenomenon of social innovation is viewed and explored from multiple perspectives. The collection and comparison of data from different sources, ranks, positions

and sides enhance data quality based on the principles of idea convergence and the confirmation of findings (Knafl and Breitmayer, 1989). Therefore, this strategy has been adopted in this study, to guarantee that the data collected is of a high quality. Baxter and Jack (2008) also recommend novice researchers to have either prolonged or intense exposure to the phenomenon, which is not possible in the case of this study because of the time limit. Moreover, they recommend that novice researcher data be collected from multiple perspectives and for member checking to be adopted in the collection and analysing process to increase the quality of interpretations. The use of reflection or the maintenance of field notes are also recommended for qualitative studies in order to establish credibility. The most optimal strategy for ensuring credibility is involving at least two researchers in coding and categorising data, which is not allowed in the case of this project as PhD research projects are individual in nature and type.

3.6 Research methods

When it comes to methodological choice, Saunders et al. (2012) suggest there are three options for the researcher to choose between. The first one is to use quantitative research methods, which are associated with collecting a numerical data through questionnaires or other statistical methods. The second option is to use qualitative methods, which refer to interviews and focus groups, as this method is used for collecting a non-numerical data, such as words, videos and images. The third option is to combine quantitative and qualitative research methods. Both qualitative and quantitative research methods are systematic and rely on collecting data to guide findings and conclusions (Padgett, 2016).

In the case of this study, the methodological choice employed is the one of qualitative methods, as the topic is orientated toward gaining knowledge and understanding about a phenomenon, rather than testing a hypothesis. Social innovations are too complex to be measured (Smith, 2005). Furthermore, the adopted philosophy of subjectivism and the inductive approach require the adoption of qualitative research methods. Saunders et al. (2012) point out that qualitative research methods are associated with the interpretative philosophy as the researcher is required to focus on subjective and socially constructed meanings. Moreover, Saunders et al. (2012) also argue that qualitative research methods are associated with the inductive approach, which is the approach that the researcher will adopt for this research project. However, some aspects of a deductive approach may also be used

in qualitative research methods (Yin, 2009). Traditionally qualitative approach emphasises the focus on exploration, discovery, theory or hypothesis generation (Creswell and Zhang, 2009; Creswell and Poth, 2016).

Table below summarises the strengths and the weaknesses of the qualitative research.

Table 2. Summary of the strengths and weaknesses of the qualitative research.

<i>Strengths of qualitative research</i>	<i>Weaknesses of qualitative research</i>
The data are based on the participants' own categories of meaning.	Knowledge produced may not be generalizable to other people or other settings (findings may be unique to the relatively few people included in the research study).
It is useful for studying a limited number of cases in depth and for describing complex phenomena.	It is difficult to make quantitative predictions and to test hypothesis and theories.
Can conduct cross-case comparisons and analysis. Can describe, in rich detail, phenomena as they are situated and embedded in local contexts.	It generally takes more time to collect the data when compared to quantitative research and the data analysis is often time consuming.
Can study dynamic processes (documenting sequential patterns and change).	The results are more easily influenced by the researcher's personal biases and idiosyncrasies.
Identifies contextual and setting factors as they relate to the phenomenon of interest.	Researcher's presence may bias responses.
Can use the primarily qualitative method of "grounded theory" to generate inductively a tentative but explanatory theory about a phenomenon.	May require the researcher to seek information from hard-to-find places or sources.
Can determine how participants interpret "constructs" (self-esteem, IQ). Determine	

<i>Strengths of qualitative research</i>	<i>Weaknesses of qualitative research</i>
	idiographic causation.
Data is usually collected in naturalistic settings in qualitative research. Qualitative approaches are responsive to local situations, conditions, and stakeholders' needs.	
Qualitative researchers are responsive to changes that occur during the conduct of a study (especially during extended fieldwork) and may shift the focus of their studies as a result.	
Qualitative data in the words and categories of participants lend themselves to exploring how and why phenomena occur.	
Can use an important case to demonstrate vividly a phenomenon to the readers of a report.	

Source: Adapted from Creswell and Zhang, 2009; and Johnson and Onwuegbuzie, 2004.

Despite the limitations and weaknesses of the qualitative research methods, yet they are the most appropriate research method to explain complex social phenomenon. Therefore, in this particular case, the employment of qualitative research methods involves conducting semi-structured in-depth interviews. The reason why they were adopted is because they offer the required flexibility to examine complex phenomenon such as innovation and change. In addition, they are able to deliver the promise of obtaining rich, in-depth data for understanding dynamic and complex environments and contexts, such as organizations related to education. Therefore, qualitative research methods have been chosen to gain rich, in-depth data for understanding the complex phenomenon of social innovation, observed in the context of higher education systems, as Mason (2010) argues that qualitative research is

used as a source of meaningful elements in a complex social world, where norms, interpretations, relationships, discourses, processes or constructions to be considered. Moreover, one of the most significant characteristics of qualitative research is that it seeks to provide a holistic view of the field of the study (Patton, 1987), which is necessary in the case of this study, which is examining social innovation from a system's perspective by adopting systems thinking.

Systems thinking is a holistic based discipline and requires an identical approach (Stalter, et al. 2017). However, what complicates the data collection process is that using qualitative research methods makes the data collection more complicated as researchers have to not only gain physical access to participants but also to build empathy and demonstrate sensitivity in order to get cognitive access to their data (Saunders et al., 2012:163). This was the case of the data collection process of this study as well, as the researcher demonstrated sensitivity and interest to the participants to make them more relaxed and open in their answers. For instance, some of the participants at some points of the interviews, used them to share their professional achievements and personal qualities. Although, some of this information was not really of a relevance to the project, the researcher did not interrupt them, as this demonstrates lack of interest and respect, which will affect negatively the quality of their later answers. This strategy proved to be successful, as this shortened the distance between the participant and the researcher, which allowed the researcher to gain a deeper access to information, as well as, honest answers.

3.6.1 Semi-structured interviews

Interviews together with focus groups and participant observations are the most common method of qualitative research for data gathering (Fossey et al., 2002). Semi-structured interviews have been selected among structured and unstructured interviews as a research mode for data collection due to several primary considerations. Firstly, semi-structured interviews are “well suited for the exploration of the perceptions and opinions of respondents regarding complex and sometimes sensitive issues and enable probing for more information and clarifications of answers” (Barriball and While, 1994: 330). Secondly, in contrast to structured interview, semi-structured interviews ‘offer sufficient flexibility to approach different respondents differently while still covering the same areas of data collection’ (Noor, 2008: 1604). Thirdly, semi-structured interviews are qualitative method, which with its flexibility in terms of length and structure, allows researchers to gain an

understanding of the subject and to clarify optimally questions and to have several attempts at finding out what are the key issues and facts (Crombie and Davis, 1996).

Moreover, semi-structured interviews, unlike structured interviews for example, allow the researcher to change the order of questions or even to eliminate the irrelevant questions, which creates opportunity for the researcher to identify the most appropriate questions by the progression of the interview process (Barriball and While, 1994). Lastly, Fossey et al. (2002) propose that interviews are usually preferred research mode, when the aim of the study is to achieve more focused exploration of a specific topic, by using pre-set open-ended questions (DiCicco-Bloom and Crabtree, 2006), which purpose is to create an interview skeleton (Fossey et al., 2002), around other no pre-set questions are emerging in the process of the interview dialogue. The interview skeleton of this research, started with introductory questions about the typical working day; the size of the team they are working with; about the nature of the relationships with their colleagues, managers and employees in order to make them comfortable.

The flexibility that semi-structured interviews offer, when it comes to identifying the relevance of the questions, is of a significant importance according to (Barribal and While, 1994:331) when it comes to the guarantee of data reliability because of the following reasons:

- (1) Allow the interviewer to access sensitive issues (Nay-Brock, 2010).
- (2) Help the researcher to detect and clarify the relevant and interesting topics, based on the responses of the participants (Hutchinson and Skodol-Wilson, 1994).
- (3) Help participants to recall information in all stages of the interview (Smith, 1992).
- (4) Gives the participants the opportunity to freely express and elaborate their answers.

However, using interviews is challenging, as the success of the semi-structured interviews depends on the researcher's skills to ask questions and their flexibility in asking supplementary questions. Yet, this is the most frequently used qualitative method of data collection when it comes to understanding and explaining complex phenomena (Ghauri and Grønhaug, 2010). In the case of this study, semi-structured interviewing, which encompasses a number of interview styles and depths (Jankowicz, 2005; Yin, 2003; Bryman, 2004), was employed to generate rich insights into the big picture of the situation in higher education system in Bulgaria by adopting soft systems thinking approach of comparing and contrasting different viewpoints (Checkland, 1990). The interview questions used during the interviews of this study were originally organised in a logical and consistent order; however, this was not followed every time as the main aim of the researcher was to provide a more

conversational style of interview, generating in-depth responses and collecting rich data. Although, semi-structured interviewing is more complicated interview style compared to the structured ones, as they require interviewer to possess greater interview skills, they might provoke a greater range of responses (Ghauri and Grønhaug, 2010). In the case of this research project, semi-structured interviews helped the researcher to access value-loaded data and gain a deep insight into the personal attitudes of the participants through sensitivity and thoughtfulness.

3.6.2 Sampling

3.6.2.1 Case study selection

Bulgarian higher education system has been selected to be a case study of this research project, because of the following reasons:

a) The context of the Bulgarian higher education system is compulsive for the examination of the phenomenon of social innovation, as it has been under a profound transformation, as a result of the transition period from post-communism to a member of European Union and the highly changing and uncertain environment (Strategy for Development of Higher Education in The Republic of Bulgaria for the 2014-2020 period, 2016).

b) Data accessibility: The researcher has had key connections with university managers and policy makers, made during the beginning of the PhD programme during internship in Bulgarian government. This helped the researcher to access higher ranked educational leaders and experts, in order to provide answers to the research questions of this study.

c) The findings of this study can be applied to every other case study (country), which shares same or similar to Bulgarian context.

Therefore, experts and high-ranked management representatives both university and governmental were recognised to be a target audience of this research. Although, public higher education institutions in Bulgaria are dependent to the government in terms of funding and policies, they still enjoy academic autonomy which includes academic freedom, academic self-government and inviolability of the territory of the higher schools (The European Education Directory, 2014). For this reason, the bigger share of the participants of the interviews are representatives of the top management in Bulgarian universities. Policy makers and experts were also interviewed, in order the quality of data collected to be

improved by providing a triangulation view. Most of the interview participants were from public universities, because the number of private universities in Bulgaria is limited, and public universities are not influenced and dependent by the government, as they are fully autonomous. Yet, there are representatives of private universities, who are also working at public universities at the same time, just as a comparison. At the same time, there are representatives of universities, which are located in and outside the capital Sofia. Based on the data from university ranking in Bulgaria, it can be concluded that universities located in the capital Sofia are leading compared to those that are located outside.

3.6.2.2 Selection of participants

Sampling involves decision related not only to the selection of the target audience for the interviews, but also to events and social processes. Qualitative studies require some continues redrawing and refocusing of the study parameters during the research process, but some fundamental selection is still required (Miles, Huberman and Saldana, 2014). Furthermore, research questions and a conceptual framework might be useful in setting boundaries of the sampling decisions. Miles, Huberman and Saldana (2014) draw our attention to the delusional perception that sampling in the qualitative studies is a simple task. For example, this research project examines a single ‘case’, where social innovation phenomenon is embedded in a single social setting (Bulgarian higher education system). However, this social setting has sub-settings such as higher education institutions (universities) and governmental bodies (ministry of education, Bulgarian Parliament, education and science committee etc.), which complicates the decision where to look. Researcher needed to be very precise in choosing whom to look at or talk to, about what, and why.

Other factors such as the limits on the conclusions that can be drawn, as well as the confidence of the researcher and the participants for these conclusions. For this reason, sampling is extremely important for the later analysis of the qualitative data (Miles, Huberman and Saldana, 2014). Alvesson and Ashcraft (2012) propose also that the value of the qualitative research depends on the participants in terms of coverage and data quality of their responses. Sufficient participants need to be recognised and picked to provide and guarantee the breadth, depth and saliency of data (Saunders and Townsend, 2016) for valid analysis and reporting (Curtis et al., 2000; Guba and Lincoln, 1985) and to authorise new insights and rich understandings (Patton, 2015). Yet, there is not clear criteria about the number of the interviews that make research sufficient (Baker and Edwards, 2012).

In fact, it can vary according to other research characteristics such as diverse in the nature of research (i.e. ontological vs. epistemological) (Johnson and Onwuegbuzie, 2004), philosophy diversity (Guba and Lincoln, 1994), research methodological pluralism (Easterby-Smith, Golden-Biddle and Locke, 2008), research purpose (breadth and scope) (Bryman, 2012), the extend of the unstructured question (Saunders and Townsend, 2016), and last but not least, the conduct and duration of the interaction between the interviewer and the participant (Brinkmann and Kvale, 2015). Moreover, the number of the interviews and the participants depend fully on the quality of their responses (Saunders and Townsend, 2016). Therefore, a significant number of researchers believe that preferably data collection has to continue until saturation (Morse, 1994) or informal redundancy (Lincoln and Guba, 1985) is reached (Saunders and Townsend, 2016:3). This was also the case of this study, as the data collection process ended when a saturation was reached (Saunders, et. al., 2018). The research found that the saturation was achieved when the same major and minor topics emerged from the data, and no different perspectives were presented (Fusch and Ness, 2015).

Miles, Huberman and Saldana (2014:31) propose that usually qualitative research involves a small sample of people, nested in their context and studied in-depth. Sampling in the qualitative research is always purposive and never random. However, sampling in the qualitative research are not fully prespecified, as the choice of the participants might lead you either to similar or different ones. This sampling is called a 'sequential sampling', which is conceptually driven (Miles, Huberman and Saldana, 2014:31). Sampling in the context of qualitative research involves two actions, which in some cases might pull the researcher in different directions. The first action consists of setting boundaries to establish the aspects of the case with full consideration of means and time limits that have to be synchronised with the research question. The second action is related to the creation a conceptual frame to support the research in uncovering, confirming and qualifying the basic processes undergirding in the study. Patton (2008) argue that there is a wide range of sampling strategies in the qualitative research, when researching a complex case or multiple cases. They can be chosen before the beginning of data collection or can evolve during its early stages. Miles, Huberman and Saldana (2014:32) add also that it is not possible to be pre-estimated, which strategies can be the best to choose for a specific case, as there are too many external conditions, which characterised each study.

In the case of this research project, during its early stage the interview participants were chosen based on the 'quota selection' strategy introduced by Goetz and LeCompte (1984), which involves 'identifying the major subgroups and then taking an arbitrary number

from each' (Miles, Huberman and Saldana, 2014:32). After the first few interviews 'reputational case selection' sampling strategy was also adopted. This strategy involves selection of the target audience based on an expert recommendation. The combination of these two strategies in sampling, enabled the researcher to optimally identify the key participants from the target audience. This helped the researcher to collect a range of views and perspectives at various organisational and system levels. Moreover, participants in the interviews not only helped the researcher to identify key people for the research, but also to reach them. This was happening after the interviews when the participants showed interest in the project and demonstrated a willingness to extra support it. The first selected participants were identified and contacted in advance during the time when the researcher was doing an internship in the Bulgarian government. At the end, thirty people (university top managers, experts and policy makers) were interviewed. The number of the participants might not be perceived as 'high', but the quality of the data and their positions, are compensating the number, which will be seen later in the dissertation project. Details of the interview participants are presented along with the findings in chapters four, five and six. The interview participants that participated in this research come from diverse contexts (humanities, arts, social sciences, law, applied sciences, natural sciences, engineering, IT, medicine and journalism).

3.6.3 Conduct of the interviews

Ghuari and Gronhaug (2010) argue that in order high quality data to be optimally collected, the interviewer needs to have a comprehensive understanding of both the research and the specifics of the research area, and to actively obtain the information required. This was clearly seen from the interviewer, as their knowledge and expertise in the research area, helped them to ask specific questions and stimulated the participants to be more explicable and to share more information. Therefore, with every subsequent interview, the interviewer asked more specific questions and was getting deeper into the topic. For instance, in the recent interviews, the researcher asked question based on the answers provided by the participants of the previous interviews, to test whether the participants share specific viewpoints or not. This happened in situations, when the participant speaks more generally and is not clear and specific enough. The more the researcher was demonstrating interest in the responses of the participants by listening, understanding and showing respect for what the participants say, the more they were stimulated to talk, which is advised by Kvale (2007) and Turner (2010). Situation of bias were minimised during the interview by avoiding the ignoring and skipping particular questions because the conversation was going into a

particular direction. In such cases, the researcher came back to the skipped questions later and made a link between the skipped questions and the current stage of the conversation.

For example, in interview one, the interviewer was about to ask question about the regular academic councils and what is normally discussed during it, but the participant started to explain about their relationships with their colleagues, which is a later question from the list. The researcher listened without interruption the participant to talk about their relationships with colleagues and in a later stage of the interview came back to the question about the academic councils, although it was one of the first questions in the list to guarantee that important data is not missed. In fact, although there was a scenario (list of questions) for each interview, the researcher had to be flexible and change the order of the questions by considering the conversation flow. The most important part was making participants comfortable to share more, this was achieved by escaping from the standard interview style of questions and answers. On the contrary, the researcher made the interviews more interactive, to give participants the feeling that they engage in conversations not interrogation. The more formal the conversation was kept the more participants were not honest as they were trying to answer in a 'right' way instead. Therefore, the successful conduction of the interviews required from the researcher to be dynamic in asking questions and generating a positive interaction with the participant. A key moment was also the 'dressing' of the interviewer and the presentation of the project. In the case of this study, the target audience consisted of top managers and policy makers, which required the researcher to dress formally in order to demonstrate respect and seriousness. Moreover, this also helped the researcher to present the whole project in a serious way, which outgrows a 'university dissertation' in order more sufficient data to be collected. Most of the participants were hoping that this dissertation might produce practical contribution together with the theoretical one, which made them more engaged, as in most of the cases they used the interviews as a form of 'feedback'.

To minimise the situation when the participants are providing answers that they consider to be 'right', rather than answering honestly, the researcher was additionally encouraging them verbally to share their true subjective opinions and by demonstrating interest in what the participants are sharing. The outcome of the positive interaction between the participant and the researcher was not only collecting more quality data, but also establishing collaboration and connections with the participants. For instance, some key participants located in different organisations and institutions recommended and linked the researcher with the other participants. After the end of the interviews, they supported the researcher in identifying the optimal sample for the interviews. The key participants were

previously identified and contacted by the researcher during an internship in the national assembly of Republic of Bulgaria before the PhD programme was started. Originally, the interviews were designed to collect data from university top managers, but afterwards with the progress of the research process, the researcher managed to establish contacts with university leaders, ex-ministers and a chairman of education and science committee in the parliament, which required the researcher to be flexible and to adapt some of the questions to the participants of different ranks and positions.

All the interviews were optimally scheduled to be conducted in Sofia, as all the participants are visiting lecturers in universities in Sofia. Planning and scheduling of the interviews was extremely important, as all the interviewees have limited time for the interviews. Therefore, the duration of the interviews is ranging between 30 minutes to 1 hour, yet there be not skipped questions and missed data. The duration of the interviews varies also because of the individual speech speed of the speakers, as well as how elaborative and detailed they are. For example, the representatives of the humanities sciences (e.g. law, history and journalism) were more elaborative, detailed and versatile, compared to those from the natural sciences, who provided shorter and punctual answers. As all the participants were very busy, most of the interviews with few exceptions were conducted at their working places or places suggested by them. The researcher had to be very flexible, mobile and organised. All the interviews were conducted face-to-face, as in contrast to telephone or email interviewing, allow the researcher to observe and consider non-verbal and informal communication (Creswell, 1998). In addition, all the were audio recorded to avoid inefficient interview practices such as note taking (Pope and Mays, 2000) and most of the time two recording devices (audio recorder and laptop) were used to guarantee that the data will not be lost. Before every interview, the participants were asked to sign a consent form giving their permission for the interview to be recorded and transcribed, and noting that they had read the information sheet. In addition, the participants were given a chance to ask questions about the study and its aim, as well as, to get explanation to any question arising from the information sheet.

There were many cases, when the participants were afraid from the nature of the interview questions, as they thought that the questions will require a special preparation. After the introducing questions, the participants were asked questions related to decision making, innovation (their personal views and experience regarding innovations in higher education), followed by questions for the role of the government and the university management for innovation and strategic reforms, continuing with questions about the main problematic issues of the higher education system in Bulgaria; and ending with their view

about what type of leaders have to design the higher education system and how it should look. The questions related to the relationships with the colleagues and managers; and those related to the role of the government for innovation process, were quite sensitive for the respondents, as the information cannot be fully confidential. For instance, as these are top managers, it was absolutely easy for anyone to identify who personally they were talking about. This information can be considered as too personal, which probably affected the level of credibility and honesty of the answers. To minimise such situations and to stimulate the participants to talk, the researcher was explaining after asking such questions that the participants are asked generally not for exact government or people. This, as expected, had a relaxing effect on them and some of them shared even personal and sensitive data.

3.7 Methods of analysis

3.7.1 Transcription of interview data

The first step to be taken after conducting an interview was for the data collected by the interview to be transformed onto a written document known as a transcript. Transcriptions of the interviews allow the data to be quoted, sorted, copied, inspected and interrogated (Miles and Huberman, 1994; Lapadat, 2000). Rapley (2008) suggests that the precise transcription of audio recorded data is necessary for qualitative data analysis. There is a transcript document for each audio file. All audio files were named according to the surname of the participants and stored and organised into folders named for each institution. For instance, all the participants from Sofia University were stored in a folder named as 'Sofia University'. At the beginning of the transcribing process, researcher was considering the option to hire a professional transcriber to do the transcriptions in Bulgarian. This however, is not recommended, as although transcribing is a slow and time-consuming process, it has irreplaceable benefits. Firstly, transcribing interviews is another chance to listen carefully once again the content of the audio files. Secondly, the professional transcribers are not into the subject and had difficulties during the transcribing process (e.g. leaving too many words that they cannot recognise). Not all of the audio files were clear enough in terms of sound, which was another reason why the researcher had to personally transcribe them later, as this minimises the missing data. In fact, almost no data was missed, and even the one that was missed (single words) is not significant.

When all of the transcripts were ready, the process of coding started. For this purpose, NVivo 11, which is a software for coding and analysing qualitative data, was used. The

researcher followed the recommendations of Rapley (2008), who advises that a notation be used to identify overlaps in speech interruptions, pauses, laughter, coughs, sighs and other auditory placeholders. However, this was done only, when overlaps in the speech were important and relevant to the data analysis. This was estimated by the subjective judge of the researcher, who shares the same nationality and culture with the participants and is able to differentiate when speech overlaps are important to be listed and when not. In moments where the transcribers were not able to identify speech, they marked them together with the number of the missing words and the corresponding time on the audio file. The transcribed documents were double checked by the researcher to ensure the quality of the transcription and that mistakes be reduced, as suggested by Bryman and Bell (2007). Most of the interviews were recorded with two devices (a laptop and audio recorder) as an insurance that no data would be lost or damaged.

3.7.2 Analysis of transcriptions

Qualitative data analysis is a ‘process’ that aims to bring order, structure and meaning to the mass of collected data (Hilal and Alabri, 2013:181). Furthermore, Corbin, Strauss and Strauss (2015:86) add also that analysis play a significant role for moving rapidly between the abstract and the concrete. This occurs as a result of a constantly asking questions and comparing data in order to identify relationships and patterns within the data. However, this is not an easy task, as the data is disordered, hard, and time consuming, even innovative methods for data analysis are adopted. In addition, qualitative data and, in particular, interviews are often complex and complicated for analysis and interpretation, as factors like individual background and the experience of the researcher can affect their interpretation and objectivity, as noted by Ghauri and Grønhaug (2010). In fact, qualitative data analysis takes the relationship between themes and categories of data aiming to increase the understanding of a phenomenon (Hilal and Albari, 2013:181). In the case of this research project, the first step of data analysis takes part during the transcription. Ritchie and Spencer (1994) argue that in order for the researcher to go deep into the topic, they must read, listen and check the transcriptions, as in this way, they become aware of the key ideas and themes. Corbin and Strauss (2015:86) suggest that coding takes place immediately after the researcher reads and digest the entire transcription document. The table below gives an insight in the coding process and data analysis in this study, influenced by Corbin and Strauss (2015).

Table 3. Data analysis process

The process of coding	Explanation
Research concept	This is the initial stage giving the solid foundation for the coding. It starts after the literature and existing theories are critically reviewed. The research paradigm and the theoretical perspective are identified based on the findings from the literature review. This first step draws the skeleton of the research.
Data collection	Data collection is determined by the research design and methods adopted in this research project, which in these cases are audio recorded in-depth semi-structured interviews with academics, managers and policy makers from Bulgaria.
Transcribing	The interviews were outsourced and transcribed by the researcher. A transcribing application 'f5' was used for the transcription of the last portion of interviews. This software was discovered in a late stage of the transcribing process, otherwise it would be used for all the audio files. Its advantages include: control of the volume (it increases the volume much more than any other player); control of the speed (this is a very useful feature, which helped the researcher to minimise the missing data; control of a spool time (this is an automatic reverse of the scrolling direction, which saves time). In addition, after the end of each part (question or answer), the software automatically indicates the exact time. NVivo 11 also has similar features for transcribing audio recordings, but the researcher considers 'f5' to be much easier and more effective.
Preparation of the transcripts	All transcripts were proofread while listening to the audio recordings, which not only minimised the errors of transcribing but also supported the check of the validity and content of the transcript texts. Furthermore, in this stage of the coding, the researcher had to confirm that all the data was anonymised by removing any data that would allow participants to be identified.
Transcript adjustment	The researcher had to read every transcript multiple time, which allow the researcher to get acquainted with content and the scope of the shared opinions.

The process of coding	Explanation
Importing transcripts into NVivo	All transcript document files were imported in the NVivo 11 in a new project.
Primary coding	Corbin and Strauss (2015:86) advise that the primary coding should start with looking for natural breaks in the manuscript such as paragraphs or breaks. Furthermore, primary coding starts with reading each source (transcript) line by line, which is a pure inductive approach that allows the researcher to become aware of the context. Places where an interesting idea or concept is identified are selected and allocated to the relevant node or to a new one if there is not a relevant node present. The portions of text selected can be either small or bigger. In the beginning, it is better to code a larger selection of text as this enables the researcher to get a clear idea of the context. The context of higher education system in Bulgaria plays a major role in the interpretation and analysis of the data. The researcher should make sure that nodes are clear and not duplicated. However, some of the codes are duplicated as they refer to more than one node. This will be adjusted in the further stage of the coding process.
Memos creating	Memos are used to capture analytical thoughts during the process of coding. There is no specific requirement about the length of the memos. Memos are a flexible method of capturing flashes of insights as they can be constantly edited and allow the researcher to attach relevant sources or documents reminding them of a particular idea or concept. Any additional material related to the interviews can be attached to the memo to support better the content and help the researcher with the analysis afterwards.
Reviewing of each node	When all of the sources are coded, each node has to be re-visited a couple of times in order for the researcher to be assured that the information coded is representative and related to the particular node. This process might involve a lot of modifying and discarding of some nodes. When this process ends and all of the categories are identified, the researcher looks to the patterns and relationships between these categories to come up with potential associations. In this stage of the coding, any contrasts and paradoxes are

The process of coding	Explanation
	recognised and registered.
Comparing and contrasting	Comparing and contrasting is an essential element of the coding process as it questions the data in order to discover potential interpretations. This method is used predominantly to encourage the researcher to recognise ideas and concepts within the data. Comparing and contrasting data might involve comparing categories, data or concepts.
Identifying the data which has been multi-coded to more than one node	As previously mentioned, the same portion of data might be allocated to more than one node. In such cases, the research must revisit the original transcript to refresh their perception about the context and to decide where this data fits best.
Examining highlighted sources to probe nodes	Each source needs to be carefully read as well as the details of how it is coded. This involves reading it line by line to be assured of the validity of the coding and to question whether the coded data can be interpreted differently. Re-reading the full text is also necessary as in this way the researcher might identify ideas and concepts that may have been initially missed.
Categorisation and organisation of nodes review	Reading every source leads to the revisiting of every node and category. This enables restructuring how the nodes are organised in a more effective and appropriate way.
Merging or dividing nodes if necessary	Nodes are merged if the categories are small or related and are divided if the categories contain many details and a single node cannot fully cover the content.

3.7.3 Coding

Corbin and Strauss (2015:221) believe that the purpose of coding is breaking down data into manageable analytic pieces. The method of coding is used for organising and sorting qualitative data such as transcripts. Coding enables the researcher to group portions of text together to represent areas of interest or patterns in the data once the researcher is familiar with it. For this reason, since the qualitative data are text-based, coding process is in the centre of data analysis. There are various ways of undertaking the coding of the transcripts, including cutting up the paper and gathering similar sections together, highlighting text, using a colour scheme, or using specific software (Gibbs, 2002). In the case of this research project, the researcher used a software program, NVivo 11, which is a

qualitative software package that stores codes, links codes to sections of text and simplifies electronic memos to be created and linked to codes and documents.

Electronic techniques of data coding started to be commonly employed in order to obtain rigor in dealing with qualitative data, as using a computer is actually a guarantee for more methodological approach (Hilal and Alabri, 2013:181). Coding is a commonly used method for highlighting similar data and organising it in a code to describe a concept or attribute which the data has in common. NVivo, a Qualitative Data Analysis (QDA) software package has many advantages, which influenced the researcher to choose it. Overall, these advantages include: reducing of a great number of manual tasks (which gives the researcher more time to discover tendencies, recognise themes and come up with conclusions); it is a perfect choice for any research, which involves more than one researcher, managing data (organising data), managing ideas (to understand the conceptual and theoretical issues) (Hilal and Alabri, 2013:182).

Furthermore, it facilitates the process of coding in the cases, when same sections of text can be coded to more than one code if they refer to more than one concept or theme. NVivo can also support researchers, who chose to analyse qualitative data through other analytical methods such as content analysis, which is the case of this study, as it is not always an efficient method as it mainly focuses on words, sentences or minutes of a speech. Coding text in more than one code often leads to missing the main concepts as several sentences can be related to more than one category, and single words do not provide any meaning if they are out of context (Rourke et al., 2001; Beattie and Thomson, 2007). Software such as NVivo offers a holistic approach to coding, which is essential in the case of this study. A holistic approach includes not only coding of short phrases and sentences, but also of short paragraphs. Corbin and Strauss (2015) suggests that short paragraphs that are coded can be later organised into sub-codes. Richards (1999) argues that the process of coding is one of the main parts of the data analysis as it supports the researcher in organising and allocating the data into categories. Data analysis demands coding to be dynamic, accessible, systematic, grounded and wide-ranging and, at the same time, to be close to and illustrative of the raw data or what was actually said. The dynamic and flexible style of coding is absolutely necessary as it involves constant changing and developing of the way the data is presented (Miles and Huberman, 1994).

3.7.4 Thematic analysis

Thematic content analysis is one of many qualitative methods employed to analyse textual data. Forman and Damschroder (2008) argue that qualitative content analysis is the descendant of the methods that focus on the informational content of the data. Thematic analysis is a method for searching of themes, which is important for describing a phenomenon (Daly, Kellehear and Glikzman, 1997). The process involves the identification of themes through 'careful reading and re-reading of the data' (Rice and Ezzy, 1999:258). It is a form of pattern recognition within the data, where emerging themes become the categories for analysis. Moreover, there are several methods of qualitative inquiry (grounded theory, ethnography and some types of phenomenology) (Forman and Damschroder, 2008:41). Grounded theory seeks to generate theory that is grounded in the data. The type of this project is a conceptual study, which makes grounded theory an appropriate qualitative inquiry to be employed. Grounded theory is a technique mostly used to support inductive approaches, which makes it an inappropriate one often for qualitative description (Sandelowski, 2000) or pragmatism (Patton, 2002). Forman and Damschroder (2008:41) discuss how qualitative analysis are used to understand a particular phenomenon unlike quantitative analysis, which is used to make generalisations from the study sample to the population based on statistical inference. A qualitative approach is also advocated by Boyatzis (1998), who proposes that qualitative analysis offers a method for identifying, reporting and analysing patterns in data, which can offer a rich pattern and account of complex data.

This section offers a summary of the definitions, processes and benefits of using thematic analysis. Braun and Clarke (2006) suggest that thematic analysis is a foundational method for qualitative analysis as qualitative approaches are complex and diverse (Holloway and Todres, 2003). Furthermore, thematic analysis is in fact the process of encoding qualitative information, which requires an explicit 'code' (Boyatzis, 1998:4). This type of analysis helps the researcher to outgrow simple descriptive analysis and to focus on recognising and exploring patterns as well as interpreting them. Thematic analysis is characterised not only by identifying, analysing and reporting themes or patterns but also by providing a rich and detailed description of data (Boyatzis, 1998). Braun and Clarke (2006) propose that thematic analysis is separate from theory and epistemology, which makes it applicable to every type of epistemological and theoretical approaches. For instance, it is well matched to both constructionist and realist paradigms, which makes it very flexible. In fact, Boyatzis (1998) considers that its theoretical freedom makes it different from other approaches and gives it the flexibility needed to provide a detailed, rich and complex account

of data.

After finishing with the coding of all the sources, the themes are conceptualised from the coded selections. The purpose of each theme is to minimally describe and organise observations and maximally interpret the aspects of a particular phenomenon (Braun and Clarke, 2006). Each theme must identify something significant about the data, and then represent a concept or meaning within the data. Identifying and generating the themes might be based on both inductive and deductive approaches. What distinguishes thematic analysis from other popular techniques such as 'content analysis' is that it does not rely on numerical quantification of text characteristics (Forman and Damschorder, 2008). The major role in determining the different themes is the researcher's judgment. Quantitative methods are unable to identify 'key' or 'major' themes. It should be critically judged whether these themes capture something important to the overall research question instead (Boyatzis, 1998; Braun and Clarke, 2006). Patton (2002) suggests that both descriptive information and interpretation of data must be provided, and this can be achieved through coding data, writing memos and verifying field notes before progressing to generating themes.

Inductive and deductive approaches in coding are employed in this research as inductive approaches aim to generate contextual background and descriptions through reading and interpretation of raw data (Miles and Huberman, 1994; Corbin and Strauss, 1998; Pope and Mays, 2000). The deductive approaches on controversy seek to explain a particular phenomenon through analysing the existing theories (Fade, 2004). Deductive methods rely on predications about topics and themes or the relationships between the variables based on existing theoretical frameworks. For this reason, combining both methods (known as a hybrid process) allows the researcher to establish an interaction between the data, researcher experience and broader concepts (Coffey and Atkinson, 1996). This also increases the quality of data analysis and provides validation or a conceptual extension of an existing theoretical framework or theory (Hickey and Kipping, 1996; Mayring, 2000; Hsieh and Shannon, 2005). In the case of this research project, codes were deductively generated by the literature review, and inductively filled by codes arising from the systematically coding of the transcripts. In instances when no suitable code was available, a new code was created until codes for all relevant data had been created. Sometimes it might be more appropriate some portions of data to be allocated to sub-categories or completely removed.

3.7.5 Multi-level analysis

The literature advises that the examination of social theories and phenomenon should go beyond purely descriptive approach (Hedstrom and Swedberg, 1998). According to Whetten, Felin and King (2009) a common mistake in organisational research is the ignorance of the distinctive features of the organisational social contexts and levels of analysis. Therefore, multi-level analysis was applied to the second research question, which scrutinises three level of analysis: individual, organisational/institutional and system. The semi-structured interviews were designed in a manner to gather information for all three levels of analysis, starting with individual related questions and ending with system related questions. It is a matter of researcher's choice, which issues of level of the system or organisational unit of measurement and analysis, they will examine (Rousseau, 1985). This research was guided by both the data and theory in their multi-level measurement and analysis, and addresses the role of level in organizational phenomena as suggested by Rousseau (1985). Basically, there are two major perspective in the organisational behaviour – micro and macro. The first one refers to the psychological phenomena, while the second one refers to socioeconomic features of organisations and systems (Rousseau and House, 1994). Although, thesis focuses on the macro level, it was designed also to give some basic insight into the individual level as well. It is reasoned with the fact that this study examines both organisational learning, which refers to individual and organisational levels, and social innovation that is associated with system level. Furthermore, the purpose of this study is to examine the topic from a big picture perspective.

3.7.6 Cause-effect relationships

This thesis applied cause-effect-condition analysis to the first research question in addition to the thematic analysis. This data analysis method was motivated by the systems thinking theories, which propose that the effect in one place of the system may cause an effect in another place (Skarzauskiene, 2010). This method of analysis is associated with rather quantitative research, which are able to provide classifications of the different variables (Hackman, 2012). In the case of this study, the cause-effect-condition classifications and relationships between the 16 themes (challenges of the HE system in Bulgaria) was applied based on both the data findings and the existing theory. For instance, data suggests that the 'funding model' is a secondary cause, which resulted from the previous secondary cause of 'governance'. The cause-effect relationship between governance and funding was also validated by prior studies that examined the higher education theories

(Ntim, Soobaroyen and Broad, 2017).

3.7.6.1 Deductive coding framework

The a priori coding framework was developed based on the finding from the literature review. The literature review has identified the following main themes and sub-themes, which explain/influence social innovation in the context of higher education: internal (interactions, collaboration etc.), external (political, economic etc.). To develop the coding framework, each factor in the model was allocated to an integer code which corresponds to the factor identified by the literature review. Sub-codes were then derived from the discussion and reflections of the factors presented in the literature review. Sub-codes were each allocated to each factor or main concept, and not generated as a free list of unstructured codes. The researcher organised the sub-codes by adopting an open coding process, explained by Strauss and Corbin (1998) as a method of exploring and examining the transcript to discover significant categories of information.

In order to test whether a coding framework is valid, it needs to be checked whether it is faithful to the theory in its orientation of codes to the main concepts (Potter and Levine-Donnerstein, 1999). By way of illustration the code number one ‘internal’ was allocated code one (1). This code consists of four sub-categories, half of which emerged from the literature (e.g. interactions and collaboration) (1.1, 1.2). The determination of allocation of the raw data to the ‘interactions’ sub-code ‘interaction’ (1.1) sub-code, requires it to be sub-divided into ‘openness’ (1.1.1). This sub-code was generated from the literature: ‘organisations need to interact with their internal and external environments in more open ways...’ (Fellin and Zinger, 2014: 914), and was also divided into two sub-codes ‘lack of openness’ (1.1.1.2) and ‘presence of openness’.

The table below describes the development of the deductive framework by creating codes and sub-codes based on the literature review findings, reflections and discussion. The improvements made after the application of the inductive framework, will be presented in a different table in the next section. The process of development is repeated for each factor influencing innovation. The full list of the codes and sub-codes generation will be provided in the final thesis, as the work on coding and data analysis is still in a progress.

Placeholder codes as described above are those allocated with a numeral code; sub-codes are allocated a position under the applicable placeholder.

Table 4. Illustration of codes derived from the findings of the literature review (Deductive approach in creating code framework).

Factors influencing transformation of the HE system	Codes derived	Numerical Code
Internal		1
	Interactions	1.1
	Collaboration	1.2
	Organisational structure and decision making	1.3
External		2
	Economic	2.1
	Political	2.2
	Governmental	2.3
	Historico - cultural	2.4

The table above displays how the deductive coding was developed. As previously mentioned, the researcher will adopt an open approach by combining deductive and inductive approaches in coding to minimise any limitations from the methodology used by allowing the research findings to emerge from the data (Fereday and Muir-Cochrane, 2006; Thomas, 2006). Likewise, Fade (2004), advocates that new data and emerging findings be used to evolve, refine or dispute existing models and theory by using existing models to analyse new data.

3.7.6.2 Application of the coding framework

Despite the fact that the coding framework was developed deductively before analysing the data from the transcripts, after the process of data analyses all the codes and the sub-codes were adjusted and managed. This study combined both deductive and

inductive approaches in coding to increase the quality and validity of coding by identifying contradictions. Furthermore, combining both methods minimised the risk of missing important data. In fact, an absolute inductive approach is not possible according to Corbin and Strauss (2015:382) as no researcher enters in the research process with a blank mind. The first stage in the analytical process involves gaining an overall sense of the data by reading each transcript multiple times. Hence, the selections for the coding of text portions were allocated to the appropriate node. If the existing coding framework contained an appropriate code for this selection of text, it was allocated there. If the existing code framework did not contain a code relevant to the text, a new code was created. Coding the data in this manner allows the phenomenon to be described and interpreted by the researcher based on the organisation of data, allowing specific themes to be recognised and developed. Each transcript was carefully read line by line, so that every sentence or concept was extracted and coded. The personal judgement and sensitivity of the researcher played a major role in estimating whether the selected statement had to be coded to the existing nodes from the developed framework, or whether a new node needed to be generated. All transcript documents imported to NVivo were read and coded, and codes were revisited, redefined and grouped together as appropriate.

3.7.6.3 In-depth inductive coding

The purpose of grounded theory is to build a theory (Corbin and Strauss, 2015:59). In order a theory to be build, relationships between concepts must be demonstrated. This involves: a) defining the main problems, events or issues under critical investigation as seen by the participants; b) explanation of the context for action-interaction; c) critical relating of the action-interaction to the problem, issue or the event and explaining how they can be a subject of change if applied in a different context; d) relating the outcomes or results to interaction or action (Corbin and Strauss, 2015:62). Therefore, in-depth inductive coding is an essential coding technique for a coding formation. Kvale (2007) argues that thematic analysis are continues and interactive method of data analysis and interpretation, as once the data is allocated to a particular code it continued to be critically interpreted and questioned until there is meaning generated from it. This process involves constant changes in the structure of the coding framework such as merging or dividing codes and sub-codes, or creating new ones if needed (Corbin and Strauss:2015). In addition, Krauss (2005), proposes that a significant output of qualitative data analysis is to add richness to the findings by presenting the words and experiences of the interview participants. In-depth inductive coding has helped the researcher to develop more detailed and rigor code framework, which

gives an insight about the actual situation in Bulgarian higher decide where a particular code fits best.

3.7.6.4 Data validation strategies

Griffiee (2005) states that the role of data validation strategy is not to overcome the weak points of interviews, but to help the researchers to take them into consideration. Data validation strategies, which is also called “checks on the data” (Hitchcock and Hughes, 1995:180) involves triangulation and reinterviewing. This thesis combines two data validation strategies: triangulation of data sources and reinterviewing. The reason why those two strategies are combined results from the restriction of re-access data for more than half of the participants. The researcher agreed with one third of the participants to contact them, when the data is interpreted to check if they agree with the interpretation of their answers. If they agree with the interpretation, it can be approved that the interpretation is more than just an opinion (Griffiee, 2005:37). However, if the participants do not agree with the interpretations of the researcher, it will be critically discussed why they do not agree. In some cases, the data is reanalysed in accordance to the respondent’s insights, while in other the respondent will be considered as “mistaken”.

There is not a strict rule, which determines how the researcher will proceed, as every case is very specific and will not be relational to be generalised. This thesis adopts also the data triangulation strategy to strengthen the validity of the interpretations. Same questions are asked to opposite groups and categories to guarantee the objectivity and validity of the generated data. For instance, seniority vs non-seniority; public vs private university representatives; policy makers vs higher education representatives (managers and academics). People with opposite opinions and views took part in the primary research, which was controlled by the listed above criteria. However, even if they were representatives of different groups, there always have a chance to share the same views, which is not the case in this research project. For example, people with similar ranks and positions coming from the same organizations shared opposite opinions, while people who seemed to have opposite opinions (based on their role or rank in the higher education system) shared similar views.

The researcher can control what type of people to interview, but finding opposite points of view is sometimes a matter of luck. For instance, the policy makers that were chosen to participate in this research project were representatives of both the opposition and

the governing majority in the parliament. Yet, their opinions do not differ as much as the opinions of people who are expected to share similar views like faculty deans of a same university. This thesis reflects the views of both the supporters and critics of: the old higher education system (during the years of socialism); the Bologna framework as a model and direction for developing the higher education system; EU and globalisation influence; radical vs. incremental innovations and reforms etc. The strategies described above help the author to be considerable of all the limitations and weaknesses of interviewing as well as to guarantee more critical interpretation and analysis of the generated data.

Furthermore, the role of triangulation of perspectives is not to increase the sense of confirmation of what is already discovered, but to help the process of theory developing (Flick, von Kardoff and Steinke, 2004:197). When a new perspective is discovered, it requires theoretical explanations, which aims to reach theoretical saturation (Glaser and Strauss, 1967). This is a very critical part, as according to Glaser and Strauss, (1967:68): “a theory generated from just one kind of data never fits, or works as well, as a theory generated from diverse slices of data on the same category’. In addition, the main role of triangulation is to extend our knowledge of the researched issue (Flick, von Kardoff and Steinke, 2004).

3.7.6.5 Presentation of findings

Presentation of results takes part after the data is analysed and generated, but the presentation of qualitative data results might not be an easy task. King and Horrocks (2010) suggest that the most common way of presenting such data is for each theme to be described and discussed supported by direct quotations, which will endorse the statements for the reader. However, this does not mean that every sub-code needs to be declared, as the purpose of result presentation is not to be descriptive but effective in the illustration and explanation of the themes. A demonstration of how the results are presented can be seen in Chapters 4 and 5.

3.8 Ethics

This research assessed the Ethics and Research Governance Online (ERGO), and received an approval. The application was made as part of an ethics submission named as ‘Systems Thinking for Innovation in Education. The case of Bulgaria’, with a submission number 19453. ERGO approved the application and sent a letter of access allowing physical access to the participants from different organisations. The conducting of research ethically

required the participants to be provided with participant information sheets explaining the research methods and design of this study. Providing information sheets helped the participants to understand what to expect from the interviews and consequently to decide whether they would participate in the research or not.

Agreement forms were used as a written approval. Samples of these forms will be provided in the final thesis as an Appendix. The information from the information list was verbally repeated at the time of the interviews, and participants were advised that they did not have to discuss anything that they did not want to, and that they were allowed to stop the interview at any time, either for a pause, or for a break in the interview. All data was anonymised and stored securely in accordance with the Data Protection Act. Digital data (recording files) was stored in password-protected computers and on a disc locked in a safe deposit box. All of the agreement forms were signed by both the participants and the researcher and the digital data was anonymised and stored in a safe deposit box.

3.9 Limitations of research design and methods

There are a number of limitations related to the selected methodology, which will be critically discussed in this section in order to support the later declarations about the research findings and their relevance. The choice of research strategy (case study), research methods (qualitative methods), the sample size and the study duration will be critically discussed to help future researchers judge whether this selection of methodology is appropriate for their studies (Leedy and Ormrod, 2005; Creswell et al., 2007). Case study strategies and qualitative research methods in general have been subject to criticism regarding the credibility, relevance and validity of their findings (Mays and Pope, 1995; Pope and Mays, 2000; Simons, 2009). Although qualitative methods are very appropriate method for explaining phenomenon, there is a high risk of the results being over subjective and a lack of generalisability (Guba and Lincoln, 1994). All research approaches have advantages and disadvantages, but the aim of this critical discussion is not to set one approach off against another, but to demonstrate how careful the researcher must be when selecting an appropriate methodology for the nature and the context of their study (Simons, 2009).

Case study approaches like qualitative research methods are criticised for being overly subjective and lack of generalisation. Flyvbjerg (2006) and Simons (2009) note that although case studies do not offer generalisability and objectivity, these deficiencies can be compensated for. First, in terms of the subjectivity, the issue can be compensated for by a shift in perspective when analysing and interpreting case studies. Second, in terms of

generalisability, the findings from case studies can be transferred to other contexts or be useful for others. Although this study focuses on a particular context and phenomenon, it actually examines organisational ‘understanding’ and ‘responses’ to the phenomenon.

The limitations of the interviews are mainly related to the fact they involve verbal responses only, which are recorded by voice recording devices. This, however, limits the researcher as the visual gestures or face expressions of the participants cannot be captured and interpreted. Bryman and Cramer (2009) and Brewer (2000) argue that another limitation of interviews is that the interaction between the researcher and the participants, as well as the perceptions of the researcher, can affect how the participants respond. In the case of this study, the same researcher conducted all of the interviews by using semi-structured interviews to maintain the conversational style, which is much more relaxing and efficient. Additionally, the researcher managed to minimise any bias during interview. The validation of the description and interpretation of the audio recordings is also seen as challenging, as highlighted by Robson (2002).

There are also limitations regarding the transcribing of the audio recordings. Common issues associated with transcribing audio recordings are related to problems with sentence structure, mistaken or missing words or phrases, as well as the use of quotation marks (Blaxter, Poland, and Curran, 2001). Furthermore, the interviews were conducted and transcribed in Bulgarian, and then the most outstanding quotations were translated in English and included in the main body of the thesis. The translation issues were overcome in two ways: a) some quotations were directly translated when this was possible, while others were translated in a way that keeps the original meaning, but said it with other words. b) the researcher is native in Bulgarian, and fluent in English, which allowed them to get the meaning attached to words. Interviews were only voice recorded, so the non-verbal communication was not considered. Yet, the researcher minimises the loss of this data by listening over and over the interviews instead of reading the transcripts, in order to pay specific attention on how the things are said (i.e. with scepticism, enthusiasm, positivism, negativism etc.). Last but not least, the research biases that is associated with the qualitative methods, because of the high involvement of the researcher in the research process. This is mostly valid for the semi-structured interviews as the researcher bias can navigate the direction of the conversation.

In order to minimise the limitations listed above, the researcher applied several strategies. The researcher adopted a number of strategies to minimise these risks and threats. The first strategy related to the description of the audio recordings was solved by listening to the audio recordings number of times. The second strategy related to the interpretation of the findings was resolved by combining both deductive and inductive approaches in coding.

Moreover, data triangulation of ensures the validity and the quality of the findings, data was gathered from three categories of participants (academics, top and middle management and policy makers/experts) from diverse backgrounds (humanities, arts, social sciences, law, applied sciences, natural sciences, engineering, IT, medicine and journalism). The limitations associated with the research bias of the semi-structured interviews were overcome by asking the interview participants the same questions, and they were also requested to provide more detailed responses and to give examples. This was mostly valid for the questions related to the innovation, collaboration and interactions. If the interview participants shared that they are actively interacting and collaborating, they were asked to give examples. The majority of them failed to provide suitable examples, which helped the participant to gain a more credible perception about what is really going on in reality.

Chapter 4 Data analysis and findings

4.1 Chapter introduction

This chapter presents the findings that emerged from the 46 semi-structured interviews conducted with 53 participants. Forty-two out of the forty-six interviews are individual, three out of forty-six were double, and one out of forty-two was a focus groups with five participants. The findings of the all three research questions were analysed through thematic analysis. However, cause-effect analysis were additionally applied to the analysis of RQ1, while multi-level analysis were applied to the analysis of RQ2.

4.1.1 Participants

As it can be seen from the table below, 31 out of 53 participants were males, while 22 out of 53 were females. Five of the interviews were conducted with representative of private universities, and thirty-seven were the representatives of the public universities. This is explained with the fact that the governance of almost 90% of the HEIs in Bulgaria is public. Interviews were conducted with 25 academics, 23 middle and top university management, and 5 experts/ policy makers.

Table 5. Full list of interview participants

Participants	Occupation	Branch of science	Gender	Institution	Date of interview
Interviewee 1	Dean	Law	M	Public university	17 May 2016
Interviewee 2	Dean	Medicine	M	Public university	27 May 2016
Interviewee 3	Rector		M	Public university	18 May 2016
Interviewee 4	Dean	Law and political sciences	M	Public university	1 June 2016
Interviewee 5	Policy maker/ Expert		M		7 June 2016
Interviewee 6	Vice rector	Business and economics	M	Public university	19 May 2016

Participants	Occupation	Branch of science	Gender	Institution	Date of interview
Interviewee 7	Academic	Law and political science	M	Private university	31 May 2016
Interviewee 8	Academic	Technologies and Engineering	M	Public University	18 September 2017
Interviewee 9	Academic	Medicine	F	Public university	18 September 2017
Interviewee 10	Academic	Criminology	M	Public university	16 November 2017
Interviewee 11	Academic	Criminology	M	Public university	20 November 2017
Interviewee 12	Academic	Accounting and Finance	F	Public university	14 September 2014
Interviewee 13	Academic	Medicine	F	Public university	19 September 2017
Interviewee 14	Dean	Business and Economics	M	Public university	2 June 2016
Interviewee 15	Dean	IT	M	Public university	7 June 2016
Interviewee 16	Rector		M	Public university	31 May 2016
Interviewee 17	Rector		M	Public university	20 September 2016
Interviewee 18	Academic	Journalism and Media	F	Public university	18 September 2017
Interviewee 19	Dean	Arts	F	Public university	12 May 2016
Interviewee 20	Expert		M		20 September 2016
Interviewee 21	Academic	Media	M	Public university	18 September 2017
Interviewee 22	Academic	Economics and Finance	M	Public university	14 September 2017

Participants	Occupation	Branch of science	Gender	Institution	Date of interview
Interviewee 23	Dean	Criminology	M	Public university	16 November 2017
Interviewee 24	Academic	Journalism	F	Public university	18 May 2016
Interviewee 25	Dean	Media and communication	M	Private university	20 May 2016
Interviewee 26 (double interview)	Vice rectors	Business and economics	Mixed	Private University	21 September 2017
Interviewee 27 (double interview)	Academics	Law and International relations	Mixed	Public university	18 September 2017
Interviewee 28 (double interview)	Academics	Law	Mixed	Public university	19 September 2017
Interviewee 29	Academic	Accounting and finance	M	Public university	22 September 2017
Interviewee 30	Academic	Medicine	F	Public university	18 September 2017
Interviewee 31	Head of department	Law	M	Public university	2 June 2016
Interviewee 32	Dean	Business	M	Private university	18 September 2017
Interviewee 33	Academic	Engineering	M	Public university	19 September 2017
Interviewee 34	Academic	History and civilization	F	Public university	12 May 2016
Interviewee 35	Academic	Criminology	M	Public university	16 November 2017
Interviewee 36	Expert/former minister of Education		M		6 June 2016
Interviewee 37	Dean	IT	F	Public university	5 June 2016
Interviewee 38	Rector	Medicine	F	Public university	21 September 2016
Interviewee 39	Academic	Arts	F	Public university	6 June 2016
Interviewee 40	Expert		F	Private university	5 June 2016
Interviewee 41	Academic	Finance	M	Public university	7 June 2016
Interviewee 42	Head of department	Economics	M	Public university	16 November 2017
Interviewee 43	Expert/Policy maker		M		20 October 2017

Participants	Occupation	Branch of science	Gender	Institution	Date of interview
Interviewee 44	Vice rector	Chemistry and Biology	F	Public university	20 September 2016
Interviewee 45 (focus group with 5 participants)	Academics	Medicine	F	Public university	14 September 2017
Interviewee 46	Dean	Journalism and media	F	Public university	13 May 2016

4.2 The main systemic challenges of the higher education system in Bulgaria

This section illustrates the main findings related to the major systemic problems of the higher education system in Bulgaria based on data analysis of 46 in-depth interviews. Reviewing literature capturing the main issues of higher education, has enabled me not only to identify the main contemporary problematic issues in higher education, but also to enhance my knowledge and understanding of those issues – which was crucial for the data collection and data analysis processes. This section discusses eleven themes identified by the analysis and attached to them sub-themes. The main themes are: “Standardisation of higher education between Bulgaria and European Union”, “Demographic crisis”, “Fragmentalism”, “Funding”, “Governance”, “Material resources”, “Quality”, “Research & development”, “Secondary education”, “Staff”, “Strategy and vision”.

4.2.1 Strategy and vision

What did emerge from the study was the sense that there is no real national strategy and vision in regards to the higher education system for both its current state and direction of further development (Interviews: 7, 12, 14, 15, 16, 27, 28, 31, 39, 40, 42, 45). There appeared to be a sense that higher education and education in general is not a priority of the government in Bulgaria (Interviews: 14, 15, 2, 23, 28, 31, 34, 45, 46). Commonly, the interview participants consider that higher education is a priority of government on paper only (formally):

“The aims, objectives and all structural strategies that are on mass production on paper – are very good, well-written and ambitious. However, the unstable political situation and the fact that we are one of the poor countries in the European Union is what prevents us from developing education. It is not just about the financial issues but it is also a matter of priority” – (Interview 12: academic, public university, accounting and finance).

An academic in a public university that has been working in the higher education sector since the socialist period pointed out that higher has never been a priority of the government and this is can be seen through the funding of the sector:

“Since the time that I remember from Todor Zhivkov’ period (socialist period) to the present day, the principle of funding of education is residual. All governments state that education is their priority, but there is a mismatch between words, actions and funding. It is unacceptable funding of education to be residual”- (Interview 34: academic, public university, history and civilisation).

Similarly, academics in a public university replied sarcastically to the question if higher education and education in general is a priority of the government:

“Yes. Education is a priority as a sector. I can’t imagine what it would be if it was not” – (Interview 28: academics, public university, law).

As interview 28 was a double interview (with two academics in a same rank and position), they were on opposite opinions when it comes to whether education is a priority of the government:

“Higher education is a priority. This is reflected in the fact that it was established an operational program ‘Science and Education for Smart Growth’. There are joint strategies between the operative programs – ‘Science and Education for Smart Growth’ and ‘Competitiveness and Innovation’, which aim is to develop innovation in education and science” – (Interview 28: academics, public university, law).

Notwithstanding, operational programs have been launched to boost innovations in education and science, an expert in higher education and innovation claims that the ministry of education and science and the government have no vision about the development of higher education system (Interview 40: policy maker/ expert).

This can be explained with the political instability which stays behind the short-term strategies and goals as explained by a faculty dean in a public university:

“Namely, each government proposes a new program and strategy accompanied by reforms rather than sustaining the strategies proposed by the previous governments. In most of the cases these strategies and programs for development of higher education are not completed as the mandate of each government in the best case is only 4 years (early elections are common in Bulgaria in the several past years). Thus, short-term goals are proposed to match the period of mandate of each government and nobody is interested in proposing a

long-term strategy, as it is not going to be sustained by the next government” – (Interview 14: faculty dean, public university, business and economics).

Complementary to this, a rector of the biggest public university in Bulgaria states that the politicians are thinking only within their mandate, as they have no benefits in investing in strategies that will give fruits in 10 to 20 years (Interview 16: rector, public university). This participant used to be in a high ranked expert position in the Ministry of Education and Science in Bulgaria, before becoming a university rector, which strengthens the validity of his point of view.

Most of interview participants were of the opinion that it is the government that must launch a national strategy for the development of the higher education system (Interviews: 27, 7, 12, 14, 15, 16, 28, 31, 39, 40, 42, 45).

For instance, according to academics in a public university it is wrong the design of higher education to be left in the hands of universities and faculties – it must be done at national level instead (Interview 27: academics, public university, law and international relations).

On contrary, an academic in a public university believes that universities have to be initiative and responsible to create and follow their own strategies:

“Development of higher education largely depends on the strategy of the university itself. Furthermore, it is a responsibility of higher education institutions more than to the state as at the end of the day universities are organizations. I’ve met colleagues and representatives of much better strategically positioned universities in Europe, and I dare say that in this respect, this university could work more on its strategic positioning. This university could also put much more effort in being one step ahead and generating the innovation in education” - (Interview 18: academic, public university, journalism and media).

Academics in a public university add also that the problem of educational organizations in Bulgaria is that they are not business-orientated (Interview 45: academics, public university, medicine).

4.2.1.1 Fragmentation

It is strongly indicated in the data that higher education must not be deliberated independently from the previous forms of education such as primary, secondary and high

school/college (Interviews: 1, 3, 7, 17, 18, 26, 28, 30, 36, 42, 44, 45). Both representatives of private and public universities indicate that there are serious problematic issues with the previous forms of education, which results in less prepared student candidates and lowered quality of education respectively. An academic from law school in a public university shares that although their discipline is prestigious, and candidates are filtered – they still have fundamental gaps that need to be overcome during the university studies:

“The level of secondary education and high school has dropped dramatically, which affects negatively the quality student candidates. To be fair, we do not experience it that strong in this faculty (in the public university), because studying law is extremely prestigious as it offers a chance for prosperity in life. Law science is always the first student choice, which allows us to work with the best students. Yet, the lack of solid preparation is presented. We must compensate these knowledge gaps by starting teaching students not at university level but at school level instead” – (Interview 7: academic, private university, law and political science).

Such attitudes were also prevalent amongst interview participants from both soft and hard sciences. Furthermore, some interviewees claimed that they have much worse experience regards to the preparation of the student candidates. For example, a university rector in a public university offering only hard sciences shared that every year the university organises three free basic courses in mathematics, chemistry and physics to compensate the knowledge gap from the previous forms of education:

“University management of this university funds three introductory courses in chemistry, mathematics, and physics in order to help students to understand the university lectures. Unfortunately, these free courses are 15 teaching hours only, because the university does not have more finances resources. Finances for these three introductory courses come from student fees, the government does not provide any support for these matters” – (Interview 17: university rector, public university).

Such views were also echoed by academics in a public university, who state that the low level of preparation and motivation of students is an issue that high school and secondary education are mostly responsible for (Interview 28: academics, public university, law). A faculty dean in a public university adds also that this situation is a very challenging for higher education (Interview 44: vice rector, public university, hard sciences). At the same time, a

faculty dean in a public university points out the unbreakable bond between higher education and the previous educational levels as elements of the same system:

“Higher education especially is a part of the overall educational process in a country. It is extremely dependent on previous levels of education. If the quality of secondary education or high school education becomes lower, this will be automatically noticed in higher education” – (Interview 1: faculty dean, public university, law).

Whilst acknowledging that there is a drop of the overall literacy, a former minister of Education and Science expresses an opinion that the proportion between motivated students and those who are not ambitious, is almost the same as before (Interview 36: expert and former minister of education and science).

The idea that university education can be handled independently from the previous levels of education indicates a rather fragmented approach (Interviews: 33, 43). It is therefore not surprising that an academic in a public university also supports the idea that higher education is a product of the previous levels of education (Interview 33: academic, public university, Engineering). Such viewpoints were endorsed by an expert in education and social sciences and policy maker who similarly points out fragmented thinking is very common in social sciences and explains the weaknesses of such thinking:

“Nowadays, one of the major problems of the social sciences is exactly the opposite of the systems thinking. The emphasis on the systemic connectivity of the elements is now lacking. In fact, things can be understood through the system, but unfortunately now the stress is rather on fragmentation, detailing etc. This fragmented approach causes a kind of loss of context that is crucial to understand the meaning of the element that you examine or to understand the subject of the specific thing you are dealing with. Thus, you can explain why, for instance, education system is the way it is; why healthcare is the way it is; why judiciary is the way it is. Things are all connected”- (Interview 43: policy maker/expert).

Key insights: Why strategy and vision are perceived as a challenge?

What did emerge from the study was the sense that there is no real national strategy and vision in regards to the higher education system for both its current state and direction of further development. Moreover, data findings indicate that there is lack of holistic and systemic view, it is replaced with a fragmented approach instead.

4.2.2 Governance

Funding and governance were united in a common theme in the literature review, but due to the volume of data they are presented separately in this section. In fact, the data suggests that the funding model is a consequence of the governance of the higher education system (Interviews: 40, 14, 45, 32, 16, 5, 23, 43, 29, 10, 27, 33). When exploring governance of the higher education system, several major sub-issues are emerging: autonomy (Interviews: 11, 25, 36, 45); corruption (Interviews: 25, 3, 34, 40, 41, 43, 6); lack of regulations and control (Interviews: 11, 31, 38, 42, 6, 7); number of higher education institutions (Interviews: 1, 10, 13, 17, 24, 25, 29, 35, 36, 37, 38, 4, 41, 42, 43, 45, 9, 6).

Key insights: Why governance is perceived as a challenge?

As indicated in the data findings governance is seen as a challenging issue that is responsible of the other problematic issues in the following aspects: presenting model of funding, autonomy, corruption, number of HEIs, and control and regulation.

4.2.2.1 Autonomy

The views whether autonomy of HEIs is advantageous or disadvantageous for the universities and the system are contradicting. Some of the participants believe that autonomy of the higher education is essential for the creativity and the business orientation:

“In general, in all spheres of life and knowledge if one has no freedom and opportunity to react or create a product than reflects their own vision – there will not be development. The same is also valid for business” – (Interview 11: academic, public university, criminology).

Another participant shares that autonomy of the HEIs in Bulgaria give them the opportunity to establish collaboration with business organisation (Interview 45: academics, public university, medicine). However, as it was already illustrated in the previous sections of this chapter the link between university and business organisation is either scarce or completely lacking (Interview, 31, 42, 40, 43, 18, 11, 46). In other words, autonomy of HEIs is expected to stimulate their collaboration with business – but this is not actually happening in reality. This logically leads to the question – ‘why?’ According to a former minister of Education and Science autonomy of HEIs is a fundamental problem of higher education in Bulgaria:

“Well, higher education has several conceptual, deep and fundamental problems. The first problem of Bulgarian Higher Education is its autonomy. Why do I think so? It is generally good for universities to have autonomy, but by autonomy I mean – autonomy in terms of designing teaching programs, courses or methods. However, in Bulgaria autonomy is perceived as the right of the work team to broadcast its manager and in this case university rector. In fact, no university rector in Bulgaria is can make any reform simply because of the influence of the team. Can IBM do something essential if IBM employees choose the chief executive? This is absolutely impossible and in this set of thoughts I believe that autonomy of HEIs in Bulgaria is a big problem. It is considered in this country that the state must give to the HEIs because they are public, and the state owes them. Nevertheless, HEIs owe nothing to the state because it is a bad state (and does not deserve it). This, I think, is extremely wrong way of thinking” - (Interview 36: expert/policy maker, former Minister of Education and Science).

Secondary research suggests that universities in the Eastern European countries are no longer directly regulated by the government (Estermann et al., 2011), but rather indirect incentive mechanisms for control have been adopted (Jongbloed and Vossensteyn, 2016). A faculty dean explains that autonomy is not properly comprehended and applied in Bulgaria – as according to them university must have full autonomy, which also means that they must not rely on the state funding:

“Universities can be self-governed (autonomy). This is the meaning of autonomy. Autonomy guarantees an optimal development. It is not serious (it is ridiculous), universities to rely on the state” - (Interview 2: faculty dean, public university, medicine).

Another policy maker argues that universities must be even more autonomous:

“This is a serious problem that university rectors cannot afford to introduce "unpopular measures", such as abbreviations, staff cuts, and so on ... In higher education we need to have wider autonomy (this is my opinion), which has to be part of the responsibility of individual universities” - (Speaker 5: policy maker/ expert).

Data suggests that the problem with the autonomy of HEIs in Bulgaria in fact reflects a deeper problem that is related to the lack of clear vision and legislation in the definition of this autonomy. In other words, although it seems that the views about autonomy of university are contrasting – in fact they all show fundamental faults in the way university autonomy in Bulgaria is designed and proposed.

Key insights: Why autonomy is perceived as a challenge?

The data illustrates that the viewpoints about autonomy of HEIs are quite controversial. Data findings suggest that autonomy is very beneficial when it comes to teaching programs, methods, creativity and so on, but inauspicious when it comes to governance and management of HEIs.

4.2.2.2 Corruption

The topic of corruption was also mentioned by the interview participants as an aspect of the governance of the higher education system in Bulgaria (Interviews: 25, 3, 34, 40, 41, 43, 6). A general feeling of mistrust in how the system is governed and by whom is presented. For instance, a faculty dean in a private university doubts the ‘degree of the competency’ of the top management of the higher education system in Bulgaria:

“I think that the majority of the top management has been given this rank/job position in the hierarchy not for their competency but for their political or party affiliation”- (Interview 25: faculty dean, private university, media and communication).

According to a university rector from a public university corruption in higher education system is not the abuse of high-level power only, but even of middle-level power:

“The former rector of this university confessed to me that once an academic pushed him to announce a contest for gaining the title ‘professor’, where the examiners/judges were chosen by the candidate himself - and of course supported his candidature for money. There are even cases in BAS (Bulgarian Academy of Science) in which the PhD or Professor candidates are evaluating and approving their own work” – (Interview 3: university rector, public university).

In other words, the success and the approval of their academic proposals depends on them only. According to the interviewees, receiving academic titles and rewards can be easily achieved if you have ‘money’ and know the ‘right’ people, which also refers to quality accreditation that will be discussed later in this chapter. Furthermore, the participant from Interview 3 shares also that the academic career growth is strongly linked to politics.

Interviewee 3 is giving an example with his colleague, who has not produced and published academic work since 2001, but at the same time was awarded with the Highers degree of excellence academic award in 2015 because of their political affiliation, which shocked all the attendants of the ceremony. According to an academic from a public university, the reason behind the failure of the majority of the top management is due to the fact that the employments in the higher education system in Bulgaria are on political not professional basis (Interview 34: academic, public university, history and civilisation).

Political affiliation of university management determines also the amount of funding that a particular university will receive:

“Political affiliation is directly influencing universities. I know that the amount of money that is distributed to budget of this university depends on personal contacts of the top management with the political figures from the government despite the existing objective criteria (i.e. general rules and regulations for the state funding)” – (Interview 41: academic, public university, finance).

According to an expert/policy maker, corruption directly negatively impacts innovations in business and higher education:

“When someone can earn money because they have personal connection with a Minister X, who will arrange their procurement – then objectively these people do not need to invent things or businesses to make profit...This is a corruption model of nepotism and redistribution of resources based on the top-down model, which creates corrupt clergy. Innovative economy is like a dirty word in a such reality” – (Interview 43: expert/policymaker).

Key insights: Why corruption is perceived as a challenge?

As indicated in the data findings, a general sense of mistrust in how the system is governed is presented. Moreover, the model of corruption is top down, and it involves not only abuse of high-level power but also abuse of middle-level power. Last but not least, data suggests political affiliation is directly influencing HEIs.

4.2.2.3 Regulations and control

The views of the interview participants on whether the regulations and control of the Bulgarian higher education system are enough are controversy. Only one of the interview participants thinks that regulations and control of the government is more than what it should be (Interview 11), while the other interview participants that mentioned this issue are of completely opposite opinion (Interviews: 31, 38, 42, 6, 7). According to the participant of interview 11 universities do not need too much regulations and control from the government – they have to become economic entities that control themselves:

“Things are simple. There should not be much regulation – only general parameters to be given about the needs of the business and the state. There must not be any interference in the teaching programs and methods. Results of the university product will be the actual regulator. If university products are not good – then universities will have to improve the

quality of these product. By improving their products, they will no longer need state funding”

– (Interview 11: academic, public university, criminology).

In fact, this participant suggests that the regulations and control must not be provided by the government but to the natural forces of the labour market instead. The other participants argue that the state does not regulate and control the universities enough, which is perceived as a weakness of the system. According to a head of department in a public university, if the regulation and control of the state was effective enough, then it would regulate for example the number of the law faculties in the country:

“If higher education was a priority for the government, then it would establish more control and regulations. The very fact that the government is not bothered so far to evaluate whether the number of the law schools is adequate (means that it reflects both the need for easier access to education and maintenance of its quality), shows very low level of concern of the state” – (Interview 31: academic, public universities, engineering).

A rector of a public university with hard-science orientation cannot understand the rather passive role of the Bulgarian government when it comes to regulation and control of the HEIs, as according to them there is no logic to provide funding and then not to control how it is absorbed (Interview 38: rector, public university, hard discipline). Vice-rector from a public university shares that in 2016 for a first time is introduced a regulation for protecting sciences that are of priority for the state. Yet, the data shows a mistrust in the effectiveness of these regulations and control because they are carried out by ministry officials (Interview 6: vice- rector, public university, business and economics).

Key insights: Why regulations and control are perceived as a challenge?

Data suggests that the majority of the interview participants think that government does not exercise enough control over the finances that it provided to the public universities regarding the way they are spent.

4.2.3 Number of HEIs

A significant number of interview participants mentioned ‘the number of higher education institutions’ as one of the challenges of the governance of higher education system in Bulgaria (Interviews: 1, 4, 6, 9, 10, 13, 17, 24, 25, 29, 31, 35, 36, 37, 38, 40, 41, 42, 43, 45). The majority of the participants listed above that pointed ‘number of HEIs’ as a

challenge believe that the number of higher education institutions in Bulgaria is irrationally large (Interviews: 1, 4, 6, 9, 10, 13, 24, 25, 29, 35, 36, 37, 38, 40, 41, 42, 43, 45). Yet, there interviewees who do not see the number of HEIs as an issue or challenge (i.e. Interview 17), or other, whose point of view is rather neutral (i.e. Interview 31).

According to a university rector of a public university considering the number of HEIs as problematically high is a ‘myth’ spread by media:

“Look, the fact that the number of HEIs is presented as problematic is actually only a myth that is widespread by the media. If statistics are made in Europe about the average number of HEIs in accordance to the population - you will see that we have to even increase the number of universities” – (Interview 17: university rector, public university).

As explained by a head of department of a public university, the issue whether the number of HEIs should be reduced, sustained or increased is a subject of debate in the society:

“Let’s be realistic. The large number of universities is economically predestined. There are two potential polices. One is higher education to be rather elitist and concentrated in the big cities (mainly in the capital. The other one is higher education not to be elitist, but to be closer to people in smaller cities (i.e. University of Veliko Turnovo St. St. Cyril and Methodius. This is a matter of philosophy” – (Interview 31: a head of department, public university, law).

In other words, this interview participant assumes that the increased number of HEIs in Bulgaria reflects the need of the society for an easier access to higher education. In regard to the access to higher education participant from (Interview 31) argues that the number of people who cannot afford to move to the capital for higher studies is large. Therefore, universities should not be positioned in the capital or the biggest cities only.

As mentioned above data findings illustrate that the majority of the interview participants have rather negative opinion about the large number of HEIs in Bulgaria. Yet, their arguments differ. Some interviewees argue that the number of HEIs impacts negatively the quality of education (Interviews: 6, 25, 29, 40, 42, 45,), other add that the number of HEIs is larger than the economic need (Interviews: 4, 9, 24, 35, 36, 37, 38, 41), which results in the generating of new courses with no future employment perspectives (Interviews: 10 and 13). A faculty dean and expert/policy maker even argue that the large number of HEIs is maintained by the state as it is a form of covering unemployment (Interviews: 1 and 43).

As it has been shown many of the interview participants believe that the present number of HEIs lowers the quality of education (Interviews: 6, 25, 29, 40, 42, 45). Quality is lowered by the fact that some of the universities meet the law requirements on paper only (Interview 29: academic, public university, soft sciences), or appoint academics who do not have enough experience, qualification and preparation for their job positions (Interview 25: faculty dean, private university, media and communication). An expert in education and innovation claims that the present number of HEIs affecting the quality of education by reducing the amount of funding allocated to each university:

“There are 52 universities in a small country like Bulgaria...This has a tremendous impact on the quality of higher education and of course the presence of so many universities with limited funding leads to big problems such as: low salaries for administration and academic staff; lack of motivation among academic staff and administration; no funding for scientific research”- (Interview 40: expert/policy maker).

As explained by the participants of interviews: 4, 9, 24, 35, 36, 37, 38 - the present number of HEIs is much larger compared to the need of the national economy, which results in a shift in the model from funnel to cone:

“There is discrepancy between the potential candidates and the vacant places in the universities, because the so-called capacity of higher education is bigger than the number of candidates. In other words, the system is no longer like a funnel, it is like a cone instead” – (Interview 37: faculty dean, public university, IT).

Thus, universities are stimulated to generate new academic courses to attract students according to an academic from public university who is sharing:

“New courses are constantly generated, which is not a problem if they are in the IT and computing field. However, new courses are generated in fields that students have no future career perspectives. It does not make sense to me, students to have a higher education diploma if it does not help them for their career” – (Interview 13: academic, public university, medicine).

This phenomenon related to the mismatch between vacant places and university candidates and generating new courses with no career perspectives is enlightened by an expert and policymaker (Interview 43) and faculty dean from a public university (Interview 1). With regard to covering unemployment a faculty dean stated that:

“The second problem of higher education system is its expansion resulting in a large number of HEIs. I will be frank. I have come to conclusion that higher education is a form for of concealing unemployment. We see the massively students are taking courses with limited employment perspectives” – (Interview 1: faculty dean, public university, law).

Similarly, an expert/policy maker elaborates:

“The expansion of higher education schools in Bulgaria can literally be compared to the cancer cells spreading. Let me give you a simple example, population of Bulgaria was near 9 million in 1989. There were 15 universities, when the population was near 9 million. At present, population is under 5 million people and at the same time there are 52 universities. Imagine how uncontrollable is the process and last but not least, this means that HEIs have two roles – one official and another unofficial (hidden). The official program is of course designed to create people with competencies. The unofficial program is that the HEIs exist to serve, expand and find funding for their own needs and benefit only. Well, there is something else HEIs are also playing another role. As you might know large parts of the country are deindustrialised. So, higher education schools are a primitive form of craving for people in those deindustrialised parts. Higher education and all its related businesses play the role of a substitute economy. By related businesses, I mean hotels, pubs, state subsidies etc. There are whole cities, which economically depend on the so-called universities (i.e. Blagoevgrad, Veliko Turnoto etc.). Thus, in fact the functions of higher education are distorted” – (Interview 43: expert/policy maker).

Data shows that the present number of HEIs is considered to be one of the biggest issues regarding the governance of the system. A strong fragmentation is indirectly indicated as it can be seen from the data, but this will be discussed later in this chapter.

Key insights: Why number of HEIs is perceived as a challenge

The responses from the majority of academics, experts and managers in the study suggest that the number of HEIs is irrationally large, which has a very negative effect on the quality of education. In fact, the results show that the large number of HEIs is a form of maintaining the economy of some regions in the country, as well as, a way unemployment to be covered up.

4.2.4 Funding

A significant number of the participants see ‘funding’ of higher education in Bulgaria as a fundamental problem (Interviews: 2, 3, 4, 5, 6, 10, 14, 16, 21, 22, 23, 27, 29, 32, 33, 36, 38, 40, 43, 45) due to several reasons such as: a) unfair funding model; b) emphasis on quantity over quality; c) not orientated toward efficiency and outcomes; d) not based on

competitiveness and entrepreneurship. Globally funding of higher education is an issue of a great significance (Nagy, Kovats and Nemeth, 2014; Marshall, 2018). For many, the amount of funding (Interviews: 3, 21), the distribution of funding (Interviews: 22, 36, 2, 6, 26) and criteria for funding (Interviews: 40, 14, 45, 32, 16, 5, 23, 43, 29, 10, 27, 33) is inadequate. The data indicates that the majority of participants that consider funding as a fundamental problem of Bulgarian higher education system, are actually mainly concerned with the criteria and distribution of funding rather than the amount. Yet, the amount of funding is a significant problem for some of the participants:

“Funding is negligible. Last year only 58 000 BGN were allocated to this university, which is not enough” – (Interview 3: university rector, public university).

The limited amount of money allocated to this university, can be explained with the weak preference of students toward hard disciplines and university with a focus on such disciplines. However, the problem related to lack of enough funding is not only valid for hard disciplines. Participant from (Interview 21: academic, public university, media) shares that the amount of funding is an issue in their institution too, and the whole higher education system respectively.

Many participants are more inclined to blame the distribution of funding rather than the government investment in the higher education institutions’ supply (Interviews: 22, 36, 2, 6, 26). The most common response of participants in relation to the distribution of funding is defining it as ‘unfair’:

“It is very easy to say that the funding is deficient, but we must also accept the fact that we are in Bulgaria. Rather, I would say that funding is extremely unfair...Funding is also based on the calculation of coefficients. Some disciplines have higher coefficients and receive higher amount of funding than others respectively. For example, medical students receive 10 times higher subsidy compared to the business ones” – (Interview 6: vice-rector, public university, business and economics).

The statement of this participant captures the governmental aspect of funding distribution. Funding distribution has also an organisational aspect, which can also be ‘unfair’ according to a faculty dean of a leading university in Bulgaria:

“In the context of academic teaching, and especially in (university name), there is a long-standing feeling among academics that everything (profit) is common and has to be redistributed. What I mean, there are 15 – 16 faculties in this university. Each faculty has some contribution to the financial budget (there is some revenue). However, a budget

analysis shows that only 2-3 out of 16 faculties have revenue over the costs. At the same time, as the faculties are part of one whole (university) – the money is redistributed to those who have never strived to develop. The university is constantly financially supporting them... it is not even equal redistributing between all 16 faculties. This distributing model takes money from the ones that bring (generate) them and gives it to the ones that do not (generate profit). As a result, the faculties which do not generate profit have no incentive to develop, because they know that ‘they will receive finance from the general budget’. This leads to the lack of initiative to optimize and develop their faculties. At the same time, those faculties that have higher income and bigger number of students, are also losing their motivation for development, as the money that they generate will be redistributed anyway” – (Interview 2: faculty dean, public university, medicine).

Secondary research shows that the models of allocation of state funding is a common debatable issue worldwide as many changes have been introduced in this respect (Nagy et. al., 2014). However, in Western Europe these changes refer to the transformation of funding mechanism of HEIs, which turn to be more customer-orientated and relying on entrepreneurship rather than relying on state funding (Nagy et. al., 2014). The data shows that this is not the case of public universities in Bulgaria, which mainly depend on state funding (Interview 43: policy maker/expert). Private universities in Bulgaria do not receive any state funding that is not on a competitive basis. Yet, they also experience the consequences of the funding model as they like the public universities that are receiving financial support, have to meet the same governmental requirements:

“We experience the consequences of the funding model as we do not receive any funding from the government, but at the same time it (the governments) requires the same from us and the public universities... The state funds only the public universities, although it has the same requirement for both public and private universities. This is unfair... So, funding and regulation has bound our hand and foot and has limited us when it comes to innovation” – (Interview 26: vice-rector, public university, business and economics).

Furthermore, this statement is strengthened by the claim that the current funding model privileges public universities over the private ones, and stimulates soft disciplines over the hard ones:

“(..) the second issue is the imperfect mechanism of financing. In case of Bulgaria, funding is discriminative toward private universities in favour of public universities. Funding is based on the number of students, which is sort of appropriate. In other words, there is a student – there will be allocated funding. It is logical, right? However, the problem of this funding model is rooted in the stratification between different categories of students:

full time, part time, soft disciplines or hard disciplines. This is not well planned, as basically we (the government) are stimulating so-called 'soft discipline' – which require just a board and lecturer". – (Interview 36: expert/policy maker, former minister of education and science).

However, on the positive side the fact that private universities do not receive any state funding for granted (on a competitive basis only) – means that they are more competitive. Thus, according to the literature, is of a significant importance for entrepreneurship (Hermannsson, Lisenkova, McGregor and Swales, 2015). A private university vice-rector claims that all external funding (except the student fees) that the university receives is on competitive basis only:

"We are fully funded on a competitive basis including when it comes to governmental funding (i.e. Operational Program Research Fund and other European programs). We (from this university) have won several from the most competitive European funding such as "the 20-20 horizon" and the "COST" initiative" – (Interview 32: vice-rector, private university, business and economics).

Data findings demonstrate that public university are privileged over the private ones in terms of receiving state funding by right (based on number of students). However, from innovation and entrepreneurship perspectives – this rather discourages public university to be competitive and to seek for excellence. According to Fatkullina et. al. (2015), the post-communist context of Eastern European Countries (EEA) is still highly influencing their attitudes when it comes to funding and governance of higher education system as the role of the state is strongly emphasised. Thus, it is not unusual that the answers of interview participants indicate that funding model is defective and at the same time the overall quality of education is dropping.

As previously mentioned, there appeared therefore to be an assumption that the criteria for funding of the higher education institutions (HEIs) is another significant problem of the current funding model (Interviews: 40, 14, 45, 32, 16, 5, 23, 43, 29, 10, 27, 33). For the majority of the participants that were interviewed in this study there is a sense that the criteria for funding is either wrong or non-transparent:

"(..) the second problem is the funding of universities by the state subsidy, which is related to the state procurement. In fact, it is not clear to me who determines it. I haven't yet seen an objective criterion published somewhere about the procedure that determines the amount of funding. There is no transparency" – (Interview 33: academic, public university, engineering).

The participants of this study believe that the funding criteria is wrong, because it is on quantitative basis only (number of students), which has a very destructive impact on quality of education and students' motivation:

“There are not qualitative criteria for the university funding...The existing funding model is actually a model, which indirectly assures students that they will graduate no matter what efforts they make. It totally demotivates them” – (Interview 27: academics, public university, law and international law).

This policy (funding per student) incites universities to generate new courses and lower the quality criteria and requirements toward students' performance – as HEIs cannot afford to lose the subsidy for students:

“Well, some of the students do not possess the qualities associated with higher education. However, the universities tolerate and allow them to graduate with higher education diploma even with the lowest achievement just to keep the subsidy for them” – (Interview 23: faculty dean, public university, criminology).

Basically, the current funding model in Bulgaria does not endorse quality in education (Interview 5: policy maker/expert) and obstructs the optimisation of HEIs and the whole HE system (Interview 2: faculty dean, public university, hard disciplines) by stimulating HEIs not only to increase the number of students, but also the number of courses, modules in which they have no traditions and capacity to teach (Interview 16: University rector, public university). Looking at the problem of funding distribution and functioning from a big picture perspective, an expert is explaining:

“(.) this is because the funding of higher education system and all incentives for its functioning are linked in a perfectly vicious way. The higher education system completely relies on the government. The state funding is a function to the well-known cliché that ‘money follows the student’. In other words, the outcome that the higher education system produces is not of an importance – the number of the enrolled students is what really matters. This absolutely twists the whole system and makes it totally inappropriate” – (Interview 43: policy maker/expert).

Despite the differences in the roles and perspectives, the data suggests that participants are sharing the common viewpoint that the existing funding model is inappropriate and inefficient. None of the participants mentioned directly the potential impact from the funding model to the innovations in the higher education system. Yet, their responses indirectly outline a relationship between funding model and innovations in higher education system. To elaborate, according to the participants the current funding model stimulates quantity over quality, and it is not distributed on a competitive basis (Interviews: 40, 14, 45, 32, 16, 5, 23, 43, 29, 10, 27, 33). Moreover, the fact that the public universities in Bulgaria fully

depend on the state funding additionally twists the whole system and make them incapable in the context of innovation and entrepreneurship.

Key insights: Why funding is perceived as a challenge?

The data suggests that model of funding of the Bulgarian higher education is considered as very problematic and imperfect as it is based on quantitative criteria only. Furthermore, a debate on whether funding of higher education must be provided by the state or must be on a competitive basis also emerged from the findings of the study. It is also disputable whether funding of HEIs is insufficient or it is the control of this fund that is inadequate.

4.2.5 Material resources

Material resources were frequently mentioned by the interview participants who consider them a challenge when it comes to innovation and quality of higher education (Interviews: 7, 10, 12, 13, 17, 19, 2, 21, 23, 27, 28, 30, 31, 34, 38, 39, 40, 41, 45). Data findings suggest that material resources is a term summarising several sub aspects: finance related issues (Interviews: 23, 29, 13, 27, 30, 31, 39, 4, 45, 7), facilities (Interviews: 17, 10, 2, 21, 23, 27, 31, 28, 38, 41, 45), data resources (Interviews: 19, 34, 40, 43, 12, 14, 19, 27, 28, 30, 8), human resources (Interviews: 2, 14, 28, 41, 45, 11, 15, 18, 21, 23, 25, 28, 35, 36, 4, 43, 42, 7, 9, 27, 33, 40). Despite the division of the term ‘material resources’ into sub-terms, the data indicates that the financial aspect is rooted in each of them. As it can be seen ‘material resources’ and their all related issues were mentioned by the majority of the interview participants apart from their role and background. Participants stressed on the significance of this issue during the interviews, which perhaps due to the fact that the interview participants were aware that the topic of this study is related to innovations in higher education. Discussing innovation when basic conditions are missing, explains the emphasis on this challenging issue.

Key insights: Why material resources are perceived as a challenge?

According to the interview participants the deficiency of finances is very challenging for HEIs. In most of the cases the facilities and other material resources such as human resources, data access etc. are very limited, which according to the interviewees affect negatively the quality of education. This is especially valid when

it comes to human resources, as the low wages demotivate talented academics and force them to have a second job or to leave the higher education sector.

4.2.5.1 Financial resources

The lack of enough financing is an issue concerning interviewees from public universities (Interviews: 23, 29, 13, 27, 30, 31, 39, 4, 45, 7). The majority of these participants are academics (Interviews: 29, 13, 27, 30, 39, 45, 7) except few management representatives (Interviews: 4, 23, 31). From a management perspective the lack of financing is a significant problem, which grows into other issues (Interview 23). A faculty dean in a public university claimed:

“Money is very important aspect for every activity including education. If you have money, you can overcome any kind of staff problem. There is a famous phrase stating that quality of employees matters the most. Well, this phrase has a paraphrase stating that actually money matters the most, because if you have enough money – you can afford to hire the most competent people to do the job” - (Interview 23: faculty dean, public university, criminology).

Another faculty dean is elaborating that there is financial deficiency when it comes to the state funding, which covers the social aspect of higher education:

“Another big problem of higher education in Bulgaria is the economic shortage of money. I mean deficiency of money as a social program because education is both social activity/service and business” – (Interview 1: faculty dean, public university, soft sciences).

From an academic point of view, the limited finances are an issue with a huge impact on them and their job performance. An academic from a public university is sharing:

“The biggest issue that I am facing every day is related to material resources and the limited opportunities in the state. Education is one of the main aspects of social policy. When there are no financial resources, it means there cannot be an active social policy” – (Interview 7: academic, public university, law and political science).

Another academic from hard sciences (natural) argues also that the deficiency of funding affects the quality and the nature of research, which according to them is predominantly statistics based:

“Few people from this university are doing experimental research, the majority is doing statistical research because of the lack of financial resources” – (Interview 30: academic, public university, medicine).

This is also supported by another academic representative of natural sciences, who claims that the lack of financing for experimental research make the HEIs and their academic researchers non-competitive to their Western European colleagues:

“In my opinion the financial problem is the most crucial one. The quality of the scientific research is not comparable with this in the Western Europe. For instance, for the simplest scientific research related to the examination of vitamin D level costs between 30 – 40 BGN per person. A statistically significant research requires at least 500 people and this is the price for not the whole research, but just for one tag” – (Interview 13: academic, public university, medicine).

4.2.5.2 Facilities

It is evident that university facilities are still of a big concern in Bulgarian higher education system (Interviews: 17, 10, 2, 21, 23, 27, 31, 28, 38, 41, 45). Interview participants pointed out that the present university facilities are a big weakness of higher education, as there are even cases when they obstruct the normal teaching process (Interview 41). An academic from a public university confesses:

“I normally work with big number of students and often experience situations in which the lecture halls are not big enough for all the students. This directly influences the learning process, as the attendance drops simply because students know that there are not enough spaces for everyone. Some modern and normal conditions are missing” – (Interview 41: academic, public university finance).

Academic from the biggest public university in Bulgaria confirmed that the university facilities are very limited and obsoleted in many aspects such as: facilities, staff training, IT and communications. Academics and administrative staff do not use email and other IT communications actively, which is an additional obstruction for modernisation of higher education in Bulgaria:

“The material problem is related to the lack of normal university facilities, lack of staff training and lack of information communication technologies at the university as a whole”- (Interview 28: academic, public university, law).

Similarly, another academic stated that academics in their university cannot effectively apply new technologies, because there is no multimedia products and IT facilities. This makes the learning process old-fashioned and the university less competitive compared to private universities as it cannot offer e-courses for instance (Interview 27: academic, public university, soft sciences). There are cases when in the IT sciences the students own much more modern technologies than what university can offer. This affects the self-esteem of the lecturer (Interview 21: academic, public universities, media).

A faculty dean explored the idea that the technologies and the human factor must be in tune with a little precedence of technologies over the human factor:

“In fact, in every sphere including education, there are two factors: technologies and a human factor. They have to be connected, because when the human factor has very high requirements and theoretically prepared, but the technological base is undeveloped – the human factor must go down to the level of the technological base” – (Interview 2: faculty dean, public university, medicine).

The participant pointed out the reasonable importance of facilities and technology for the staff development. Yet, most probably this importance varies among the different disciplines.

4.2.5.3 Human resources

Interview participants recognise human resources as a rapidly growing challenge of the higher education system (Interviews: 14, 2, 28, 41, 45, 12, 18, 21, 23, 24, 25, 28, 30, 31, 36, 4, 40, 42, 43, 8, 9). Usually, the challenges are related to work conditions and low salary ranges; hence it results in unattractiveness of both academic and administrative jobs in the HEIs in Bulgaria. A significant number of interview participants share that the academic staff is aging, and attracting young people in the academic field is extremely rare and hard because of the work conditions such as low salary and unsatisfying career growth (Interviews: 12, 41, 45, 23, 24, 30, 31, 36, 4, 40, 42, 7, 8, 9). According to an academic in a public university most of academics in his university work two jobs – one academic and one non-academic (Interview 7: academic, public university, law and political studies). Furthermore, participant of (Interview 7) confess that this deprives academic staff of the opportunity to conduct academic research. An expert in education and innovations adds especially in the case of IT sciences that university facilities plus the low salaries of

academics will result in a significant deficiency of academic staff in 10 years (Interview 40, expert). A faculty dean argues that all types of human resources (i.e. academic, administrative, technicians) are a weakness of the higher education system:

“For example, a good maintenance of the internal IT systems in universities can be provided only by an IT specialist, who will receive high salary. You cannot expect much from someone who accepted a job position of an IT specialist for the salary between 600-800 BGN per month when in the private sector their starting salary is around 2000 BGN” – (Interview 23: faculty dean, public university, criminology).

Likewise, according to an academic from a public university, the higher education institutions struggle to regenerate the academic workforce because the salaries are humiliating:

“There are not young people who wish to work in the academia, because the salary is humiliating” - (Interview 9: academic, public universities, medicine).

Although the majority is of the opinion that academic salaries are very low - there are interview participants from a public university that are pleased with the salary that their institution is offering them (Interviews: 37, 39). One of them, who is a faculty dean explained their position:

“Well, there are no economic obstacles. If someone tells you that our salaries are low, they are relatively low if we compare them to these of our Western Colleagues. Academic salaries are not that low for the living standard in Bulgaria. Moreover, there are plenty of opportunities for additional activity. I see the environment as supportive” – (Interview 37: faculty dean, public university, IT).

Complementary to this, a former minister of education and science suggests that academic staff is not motivated because ‘the salaries are relatively low’ (Interview 36: policy maker/expert, former minister of education/expert).

Next, according to a faculty dean in a public university, another demotivating aspect of academic jobs are not only related to the academic salaries but also to the legislation that regulates academic career path (Interview 4: faculty dean, public university, soft disciplines). A young academic from a public university also argued that career development in Bulgarian higher education system is not designed in a way to support young academics to grow in

their career. Moreover, career development of academics is not related to increased finances – it is only related to the moving up the academic career (Interview 30: academic, public university, medicine). This opinion is also expressed by another academic who justifies:

“There is no real established career path, regardless of the constant push for career growing. However, academic development is not just related to the getting of some diplomas and titles” – (Interview 41: academic, public university, finance).

The lack of established effective paths for career development is an inauspicious factor that impact negatively the motivation of both - young qualified workforce (to choose academic career) and the current academic workforce (to develop and improve its job performance) - (Interviews: 22, 30, 41, 38, 4, 45, 28).

4.2.6 Standardization of higher education between Bulgaria and European Union

Developing countries are ‘pushed’ to modernise their HE systems in order to match the education standards set by the developed countries. This is especially valid in the case of the European Union countries, which aim to establish standardisations in all sectors including education. Moreover, the open borders of the EU allows a great number of student candidates from the EE developing countries to study in Western European Universities. Thus, the HEIs of the EE developing countries are now in situation of competition with the HEIs from the developed countries within EU. Findings emerging from data show the interview participants perceive ‘competition’ with the European HEIs as a very serious issue (Interviews: 26, 44, 32).

“The problems of the higher education stem from the fact that we are now in a highly competitive environment with the European universities” - (Interview 44: vice-rector, public university, natural science: chemistry and biology).

Competition with European universities is seen as a significant problem, because of the existing inequality between the developed and the developing countries within EU:

“We are not competitive with Western Europe. They can afford more self-funding when it comes to participating in a European project. In addition, there are a number of rules and conditions that protect larger universities and western universities. For example, the payment conditions per hour have to be compliant with the local economic standard.

This means that, the local lecturer (in Bulgaria) will receive 5 Euro per hour, while the western European lecturers will receive between 25-30 Euro per hour for the same amount of work - and this is written in the EU directives. So, this makes us not competitive internationally”- (Interview 26: vice-rectors, private sector, business and economics).

According to the interview participant the inequality between competitors results in one-sided mobility defined in literature as ‘brain drain’, rather than two-sided mobility ‘brain circulation’:

“(.) on the other hand, this openness of Bulgaria to Europe, which has enabled mobility, is one-sided. In this sense, there is mobility and migration from Bulgaria to Europe, but not the opposite. So, this is also a big disadvantage of the system” (Interview 32: vice-rector, private university, business and economics).

One sided mobility is reasoned with the limited number of English taught courses in the EE developing countries, especially in the humanitarian and social sciences:

“Another big problem of the Eastern European countries (EEA) is still the language barrier and teaching in English especially in the case of the humanities. As a result of this, very few English-speaking international students come to study here. However, this does not apply to the medical and technical universities – it is mainly valid for the humanitarian universities” (Interview 19: faculty dean, public university, arts).

Key insights: Why standardisation of higher education between Bulgaria and European Union is perceived as a challenge?

The data suggests that standardisation between Bulgarian higher education system and the requirements of the European Union as well as the open borders results in inequality between developed and developing countries and one-side mobility known also as ‘brain drain’.

4.2.6.1 Application of EU models

As already mentioned, the standardisation of higher education systems within the European Union (EU) means that the developing countries have to match the developed countries in terms of quality and standards. This is also the case of Bulgaria, which as a

comparatively new member of the EU, is required to transform its national higher education system by applying and integrating EU models in the Bulgarian context. Many of the interviewees perceive it as a problematic issue. For example, one of the interviewees sees the way how these models are applied to Bulgarian context as destructive for the higher education system:

“It’s even more destructive the fact that imbued models are imitated... as we have traditions in education” (Interview 20: expert/policy maker).

This is an opinion of an expert and academic from the old generation, but it is also shared by a young academic:

“The influence of the foreign culture – this is the biggest problem of our higher education system” (Interview 39: academic, public university, arts).

According to this participant the influence of foreign culture is primarily focused on computing and technology at the expense of the human factor. In other words, emphasis is on the organising the system in a way that the role of computers and technology is more crucial for the system than the role of the individuals involved in it. The data also shows that actors from the Bulgarian higher education system are not convinced in the advantages of the EU’s vision about the future development of the system (Interviews: 17, 35).

Data suggests that the reserved position of the actors of Bulgarian higher education system toward the adoption of EU models, is rooted in their general scepticism about standardisation. Standardisation of the higher education system is comprehended as a discount of the individual culture:

“I am more inclined to stick to our national legislation, because I don’t accept the idea that a few people (10-15) from the EU can establish a strategy of the development of the education and science – and it is the same strategy for the whole European Union. We speak about education and science, not about manufacturing of cars or furniture, where standardization is possible”- (Interview 35: academic, public university, criminology). In addition, this participant believes that regulating and framing science promoted by the European Commission, actually limits the academic freedom and creativity.

The data also indicates that the participants consider that the models proposed by the EU are not always as effective and efficient in all contexts that they are applied. Moreover, one of the interviewees argues that some of the EU models and problem-solving strategies, which are believed to be novel, were in fact previously applied to Bulgarian context and they did not work there - (Interview 21: academic, public university, media). The data leads to the assumption that actors of the Bulgarian higher education system are not encouraged by

the EU to innovate and propose new models but rather to apply the ones that are already proposed by the EU experts and policies. For instance, one interviewee shares:

“I am also a supporter of the idea that we can also create some models that are perfect enough” (Interview 21: academic, public university, media).

In contrast, another interviewee does not support the idea that using an imported knowledge or model rather than creating one, has a negative impact on the higher education system in Bulgaria:

“I doubt that this is really a problem. If we have to use only what we invented, it would mean that we would still use “horse-drawn vehicles” - not cars” (Interview 23: faculty dean, public university, criminology).

As it can be seen from the responses of interview participants Bulgarian higher education system is stuck between the past models and the new modern trends and requirement. There is a prevailing feeling of ‘pressure’ to transform the HE system in accordance to the EU requirements, to which the system actors respond with high level of resistance.

Key insights: Why application of EU models in higher education is perceived as a challenge?

The data illustrates that there is a tension between the old knowledge models and the imported knowledge models: traditionalists versus importers.

4.2.6.2 Commercialisation of higher education

The evidence would further indicate that commercialization and massification of higher education is perceived as a fundamental problem of the modern higher education systems, as they are believed to affect negatively the quality of education. Stronger emphasis is therefore given to “over-addressing of the business and economic aspect of higher education at the expense of the quality” (Interview 27, 45, 20, 11). Commercialization and massification of higher education are perceived by the interview participants as

“problematic” due to two reasons. The first one is related to the increased number of HEIs (higher education institutions), as well as the number of the enrolled students – which is believed to influence negatively the quality of education as “not everyone is suitable for higher education” (Interview, 36: ex-minister of education/expert, both sectors). The second one is related to the present perception and role of higher education compared to the past:

“The biggest problem of the higher education system is its strong commercialization. Nowadays, we are talking about education like we are talking about selling sausages. However, education is the main conservative element in the functioning of a country. It is like in the army – you can change it a bit, but not entirely” – (Interview 20: expert).

As it was already discussed in the literature review chapter, the higher education sector have been going through a great transformation around the globe in the several past decades. Universities are now required to operate as ‘business organisations’ with a strong accent on “entrepreneur culture”. Therefore, it is not surprising that commercialisation of higher education is perceived as problematic by the interviewees because of its negative impact on quality (Interview, 20, 27, 31, 45, 16). Commercialisation and entrepreneurship in higher education sector are perceived as contrasting with the traditional education, which also influences their outlook. For example, one of the participants shares:

“(..) business-oriented universities... By business universities I mean those orientated toward profit making, I don't count them. When science is orientated toward making money, then we cannot talk about real science. When if you paid your student fee, you will defend a dissertation for sure – then we are not talking about real science... That's why I previously mentioned universities with traditions, because these traditions are not based on student fees or business orientation. They are a result of many years of experience and solid internal criteria instead” - (Interview, 11: academic, public universities, criminology).

The concept of business-orientated universities excludes the public universities in Bulgaria – as they rely mainly on state funding. Business orientated universities mentioned by this participant are foreign (Western European research universities) or in the national context such universities can be the private ones. Private universities in Bulgaria do not receive a state funding unless it is on a competitive base (Interview: 26, 32), so they are ‘pushed’ to be orientated toward profit-making.

Higher education is seen as ‘conservative’, which is believed to be beneficial as it is considered to be the main factor that has helped it to survive until now (Interview, 20: expert,

public sector). Not all participants have a firm opinion that the business orientation and commercialization of higher education system is always a negative thing. In fact, other participants see the benefits of business orientation unless it affects the quality of higher education in a negative way (Interviews: 45, 33).

The participant of Interview 32 suggests also that inequality between the higher education systems in the developing countries and the developed ones depends also on their image. For example, Interviewee 32 (vice-rector, private university, business and economics) emphasises on the ‘mistrust’ in Bulgarian higher education, which according to them due to fact that today the universities are experiencing the effect from 10 – 15 years ago. This results in a damaged image of the higher education system, which affect students’ choice (Interview, 4: faculty dean, public university, soft disciplines). In addition, according to one participant, higher education cannot be observed independently from other factors such as: living standard of the country, economic and political conditions: *“In my opinion, it is a matter of an image and living standard. It is not just because of the quality of education. There are many other factors that influence young people to choose a destination for studying”* – (Interview, 32: vice-rector, private university, business and economics).

The above quotation indicates that the inequality between the developed and developing countries is also related to the economic environments, living standard and employability between these countries. This reasonably leads us to the next sub-theme illustrating the poor link between higher education and industry in Bulgaria.

Key insights: Why commercialization of education is perceived as a challenge?

Data findings suggest that commercialization and massification of higher education decrease significantly the quality of education.

4.2.6.3 Poor link between HEIs and industry

In many instances, academics and management felt that higher education system is functioning independently from industry (Interview, 31, 42, 40, 43, 18, 11, 46). According to one of the participants, there are few bridges between universities and industry (Interview, 42: head of department, public university, economics). In other words, it means that the level of external collaboration in the universities in Bulgaria is relatively low.

When we observe the link between university education and industry, several aspects of this link are submitted by the interview participants. Firstly, the lack of such link affects the employability skills and chances of the students as the university education is rather theoretical and not orientated toward practice, which lower their employability chances (Interviews: 40, 31, 24). In this set of thoughts, one of the participants is sharing their attitude toward law discipline in particular:

“The law, besides being a great science, of course, is also an art in some sense - it is also a "craft". One has to have a little more knowledge about the practice they will work after graduation. This practical skill in Bulgaria is underdeveloped” – (Interview, 31: head of department, public university, soft disciplines).

The same opinion was shared about soft disciplines only such as journalism and business (Interviews: 40, 31, 24), none of the participants mentioned it for the hard sciences. Despite the stress on the too much theoretical orientation of higher education, there are other factors that affect employability of students such as: undeveloped economic environment and mismatch between the university education and the demand of industry. On one hand, some of the academics and educational leaders believe that higher education must respond to the requirements of the industry, which means more practical orientation (Interviews, 40, 31, 24). On the other hand, other participants believe that universities have different purpose:

“(..)this is not the purpose of higher education institutions (HEIs). Universities are not craft schools. The purpose of HEIs is to give the fundamental base to students and to shape their way of thinking” – (Interview, 31: head of department, public university, law).

In fact, the data suggests that it is debatable whether higher education must adjust to the requirements of industry and offer courses with more focus on practice or stick to the classic and traditions in education. There is no solid evidence that if higher education adjusts to the requirements of industry this will improve its quality. The data findings show that academic participants (Interviews: 12, 18, 24, 45) believe that the quality will increase as the teaching programs will be up-to-date and the students will be better prepared for real life if higher education is designed in accordance to the requirements of the industry. A head of department argues that higher education will never be able to fully prepare the students for the real life. In fact, the purpose of higher education is to form their way of thinking (Interview 31). This is also supported by a faculty dean, who shares that higher education cannot adjust to dynamics in business quickly:

“We (universities) cannot always respond to the requirements of the industry or business, where changes are happening much faster” – (Interview 46: faculty dean, public university, journalism).

Conversely to the assumption that adjusting to the industry requirements will improve the quality of higher education, a head of department and policy-maker expert argue that:

“There is no such thing in Bulgaria (connection between education and industry), which makes this call for connection and collaboration between the two for me is absolutely vicious and deeply hypocritical. The two systems (industry and higher education) do not need each other...If we have to honestly admit what business wants, it does not want higher education at all. Business wants servants with some technical knowledge and nothing else. In fact, it is not industry’s fault because it is how it has been shaped and transformed and vice versa (after the post socialist period)” – (Interview, 43: policy maker/expert).

Despite the presence of controverting views whether quality will be positively or negatively impacted such adjustment between higher education and industry, it is totally undebatable that the interactions between HEIs and industry in Bulgaria are missing. The majority of the participants that listed this problem do not give more details and explanation for the causes of this issue or simply blame the industry for its passive and inadequate role (Interviews: 45, 42, 40, 11).

To elaborate, interview participants share that on one hand, employers’ organizations are either passive and do not initiate any contact with universities (Interview 1: faculty dean, public university, law), or when they establish a connection with HEIs – their demand for future graduate employees, is associated with secondary education level or craft schools. This attitude is also shared by other interviewees (Interviews: 1, 35, 43), who also believe that industry in Bulgaria does not need qualified workforce. On the other hand, the majority of the universities in Bulgaria are public and receive state funding, which might also affect their drive to establish a solid collaboration with the industry.

The data indicates that universities are willing more to collaborate with industry, which is only one side of the story as no industry representatives have been interviewed. Yet, as policymakers and experts are also target audience of this study, their attitudes will be used as data validation. The interviewee 43 (policymaker/expert) argues that undeveloped

economic environment in Bulgaria is the reason for the missing link between universities and industry, and all written strategies for establishing such links are ‘cliché’:

“When we talk about the link between education and business and the education design, there is one dumb cliché:

- Let’s link Bulgarian higher education with the demands of businesses.

I’ve always asked: ‘Which businesses’? – The business of changing dirty sheets so-called tourism.

This business creates servants and does not need quality workforce. Moreover, this business does not offer product with high added value... So, if we respond to the needs of business, it means that we have to eliminate/destroy higher education completely” - (Interview 43: expert/policymaker).

An expert in innovations and higher education is confirming the opinion of (Interview 43) by claiming:

“(..) economics, science and higher education – the link between them is generally lacking” – (Interview 40: innovation and higher education expert).

However, this seems to be not only a national problem in Bulgaria, but within EU as well:

“I dare to say that the lack of close relationship between industry and higher education institutions is not only Bulgarian problem. It is also a common European problem. I had the chance to go to innovation forum of higher education in Albach 3 years ago. The majority of the delegates of this forum stated that this close relationship between industry and higher education is not established massively within the EU. Yet, there are universities, which manage to implement it”- (Interview, 18: academic, public university, journalism and media).

It must be taken into consideration that the above statement is about Britain, which is a developed European country but still finds it challenging a close relationship between universities and industry to be established.

Key insights: Why poor link between HEIs and industry is perceived as a challenge?

As indicated in the data findings, there is a debate about whether higher education have to be more orientated toward practice or has to focus on providing a

fundamental base to students and shaping their way of thinking. Data suggests that the link between HEIs and industry in Bulgaria is broken.

4.2.7 Demographic crisis

‘Demographic crisis’ is a term used by the interviewees, which summarises sub-issues like brain drain, birth rate and imbalance between the vacant places and the number of applicants (Interviews: 4, 7, 11, 14, 17, 25, 28, 30, 32, 38, 40, 42, 43). For the academics, educational leaders and experts who were interviewed in this study there was a prevalent feeling that demographic crisis is currently dominating issue causing a variety of other sub-problems (i.e. being some constrain for innovative universities; quality of education; brain drain). Many participants were of the opinion that there is a deficit of the number of student candidates, which results in decreased quality of education. Furthermore, competition is currently reversed – universities have more free vacancies than it is the number of students (Interviews: 4,11,14, 25). Thus, participants were conscious with the negative impact of the demographic crises on the quality of education, yet some of the adopted the strategy of either waiting crises to pass rather than responding to it:

“There is demographic decline, as there are not enough high school graduates. From next year their number will start to grow slightly, simply because there are years when the birth rate is higher than others. The hole is excessive, right?” – (Interview 28: academics, public university, law).

Interview participants list the preference of significant number of student candidates toward foreign universities. However, no attention is paid on how to improve their competitiveness and attractivity. Reducing the number of student candidates is not the only aspect of this problem (higher number of vacant places compared to this of student candidates). Some participants suggest that student mobility is not a problematic issue only in quantitative matters (reduced number of student candidates), but in quality matters as well. Reflecting on the demographic crisis as a major source of apprehensions, participants are additionally concerned with the ‘quality’ of the students. They believe that a significant number of student candidates chose Bulgarian HEIs are in fact ‘unsuitable’ for higher education, but universities still accept them because of their need to fill their free vacant places (Interviews: 17 and 45):

“Well, firstly, the country's gene pool is much reduced. The people who left here (in Bulgaria) are genetically unsuitable for higher education” – (Interview, 45: academics, public university, medicine).

Demographic crises affect equally both public and private universities, and hard and soft disciplines. A vice-rector from a private university in Bulgaria is sharing that the demographic crisis and brain drain in particular are seen as a ‘great constraint for innovative universities in Bulgaria’ – (Interview, 32: vice-rector, private university, business and economics).

However, the level and the kind of impact varies:

“We feel it (the demographic crisis), but we are not affected by it in terms of the number of candidates. Maybe this university is the only one, where 5 – 6 candidates are competing for one vacant place. There is no such case in Bulgaria, as this university is the only one that accept a limited number of candidates. This year, their number is just 120 people. However, overall quality is dropping” – (Interview 11: academic, public university, criminology).

As it can be seen, Interviewee 11 is explaining that their university is an exception of the overall tendency, which according to (Interviewee 23) is owing to the funding mechanism of this specific university. The given example of this particular public university is proved to be an exception of the total rule, as it is receiving funding from another governmental body.

Key insights: Why demographic crisis is perceived as a challenge?

It is strongly indicated in the data that the number of students is dropping dramatically due to the low birth rate and one-sided student mobility.

4.2.7.1 Brain Drain

What did emerge from the data in relation to demographic crisis was the significance of the ‘brain drain’ phenomenon. The data shows that in the case of this particular study, the term ‘brain drain’ unites both academic mobility and student mobility (Interviews: 7, 30, 38, 40, 42, 43). It is not surprising that the topic of ‘brain drain’ was discussed by the interview

participants, as it is a significant issue for the developing countries caused by the spreading globalisation.

“We are in a situation of competition not only inside, but also with the universities from the European Union. One fifth of the university candidates go directly to study abroad. We cannot attract them” – (Interview 42: head of department, public university, economics).

Yet, according to the interview participants the term ‘brain drain’ does not only refer to the student mobility but also to the academic mobility and the ‘shortage of qualified workforce’ (Interviews: 40, 43, 30, 38). In addition, participants recognise academic mobility as one sided only:

“The second problem is related to the redundancy of younger academics (in the higher education sector), as a result of which they leave the country. There is a significant mobility of scholars outside the state or in other sectors” - (Interview 40: higher education, employability and innovation expert).

The effect of academic mobility leading to ‘brain drain’ is a major issue for the EE developing countries in Bulgaria as highly educated people are rare resources in the developing countries. A policy maker/ expert gives example with scholars, who can generate ‘publishable’ research, but left the country:

“Bulgaria was stripped of qualified workforce as a result of the mobility of a great number of scholars especially in the field of applied sciences, mathematics, information sciences, which are publishable worldwide. Particularly in the 1990s a significant number of a qualified workforce left the country and moved to mainly Western Europe and North America. So, this is a fundamental problem” – (Interview 43: policy maker/ expert).

Moreover, the participant from Interview 43 reflects on the ‘brain drain’ process from economic and sociological perspectives and considers the ‘late modernisation’ of countries like Bulgaria for the main cause of this issue:

“Well, ‘brain drain’ is everywhere. Brain drain is distinctive for countries like Bulgaria. The problem is that when countries like Bulgaria are open to the outside world they are immediately absorbed. It is a very simple system. It is not like when you pour extra coffee to a cup of coffee and the amount is increased. It is just the opposite. When there are strong and weak economies and they have the same connection in between, the strong

economy sucks the weak economy. This is the story of modernisation of the modern world and the countries that are late in their development” – (Interview 43: policy maker/expert).

This was further highlighted by the participant of Interview 30, who argues that the conditions offered by the developed countries such as higher salaries, faster and easier career growing, and development are much more attractive compared to those offered in Bulgaria:

“Western Europe attracts young people with the higher salaries, and perhaps educational systems. As career growing and adaptation in a given environment is much easier and faster than here” - (Interview 30: academic, public university, medicine).

Key insights: Why brain drain is perceived as a challenge?

Data findings implies that Bulgaria like other developing countries is strongly impacted by brain drain phenomenon, which resulted from the redundancy of younger academics especially in the sphere of applied sciences, who left the country.

4.2.8 Research and development

Literature suggests that Research & Development is strongly related to innovation capabilities (Ren, Eisingerich and Tsai, 2015). Research & Development is a major challenging issue for the innovation of the Bulgarian higher education system as indicated in the data findings (Interviews: 12, 13, 15, 19, 2, 22, 27, 28, 29, 3, 32, 33, 34, 35, 38, 40, 41, 42, 43, 45, 6, 7, 8). The most outstanding causes that make research and development a very challenging issue of the higher education system are: the research community (Interviews: 2, 3, 15, 24, 34, 40, 43) and the lack of funding for scientific research (Interviews: 6, 12, 13, 30, 32, 33, 35, 38, 40, 45).

Research community in Bulgaria is weak according to an expert and policy maker:

“Well, it must be said that the Bulgarian universities and the Bulgarian research community in particular, are very weak. VERY WEAK” – (Interview 43: policy maker/expert).

‘Bulgaria was stripped of qualified workforce as a result of the mobility of a great number of scholars especially in the field of applied sciences, mathematics, information

sciences, which are publishable in the international ranked journals’ - Interview 43: policy maker/expert).

Publishing of humanitarian and economic research in international journals is extremely challenging because the economic environment in Bulgaria is not representative enough according to a head of department in public university (Interview 42: head of department, public university, economics).

An expert from both sectors argues that the problem of research community in Bulgaria is rooted in the inadequate university structures:

“The academic structure in our country is somewhat inadequate. Hence, every scientist works in his own area of research interest only. We in Bulgaria do not have any serious scientific group of researchers in the universities, like Western universities that work systematically on certain scientific issue and prepare PhD students in this field” – (Interview 40: higher education and innovation expert).

A language barrier is also an obstacle, which needs time (10 years at least) to be overcome according to a faculty dean (Interview 15: faculty dean, public university, hard sciences). Another essential point is made by an academic from public university, who claims that the amount of the academic load in Bulgaria is extremely high compared to academic workload abroad (Interview 34: academic, public university, history and civilisation). This interview participant explained during the interview that they have the opportunity to teach abroad, which allows them to make a comparison.

The second outstanding issue of research & development in Bulgarian higher education system is related to the funding of scientific research (Interviews: 6, 12, 13, 30, 32, 33, 35, 38, 40, 45). The majority of the participants listed above are of the opinion that the state does not provide enough funding for research projects. An academic in a public university suggests that the ‘state turns its back on science’, as if the state turned its face on science – it would fund it adequately (Interview 35: academic, public university, criminology). This opinion is also supported by another academic, who also thinks that scientific research projects are not funded enough (Interview 33: academic, public university, engineering). An expert in innovation and higher education shares:

“In recent years there have not been any projects in the scientific research sphere in Bulgaria, which is a very serious problem. The lack of finances for scientific research in the

universities affect negatively: the research activity, respectively the outcomes of these activities, and the introduction of novelties in the training and teaching programs” – (Interview 40: innovation and higher education expert).

Conversely, opposite opinions were also presented during the interviews. A faculty dean in a public university states that academics must not rely on state funding but to apply for research grants:

“Well, worldwide science is not an issue related to the stated or the so-called public sector... In fact, funding of research projects depends on the individual qualities of the academics. It is ridiculous to think that the state is obligated to provide research funding. I don't think this is sober. If you are a good researcher, you can always apply and win grants. We in Bulgaria are not exception as we are now part of the global world. There no restrictions and limits if you are very good – you can get research grants from everywhere you want. However, this is not the case when it comes to funding of education. Education funding must be a national strategy. State must fund education, bot science! I split them” – (Interview 2: faculty dean, public university, medicine).

The data findings suggest that there are examples of universities in Bulgaria, which does not rely on state funding. For instance, a deputy rector in a private university explicates that their university receives funding only on a competitive basis:

“My task as a deputy rector is to provide opportunities for both academics and students to participate in European projects funded on a fully competitive basis. We do not have any project that the state subsidizes for us”- (Interview 32: deputy rector, private university, economics).

The above viewpoints of interviewees (2 and 32) are quite unconventional compared to the opinion of the majority, which indicates a passiveness of academics and university management as well as weak inclination toward entrepreneurship.

Key insights: Why research & development is perceived as a challenge?

The data illustrates that the most outstanding causes that make R&D a very challenging issue of the higher education system are: the weak research community and the lack of funding for scientific research. Again, a debate

aroused on whether academic research should be funded by the government or on a competitive basis.

4.2.9 Quality

A significant number of interview participants are united around the idea that quality of higher education is debilitated as a result of the issues listed above (Interviews: 10, 13, 15, 16, 20, 22, 24, 25, 26, 27, 29, 3, 32, 33, 34, 35, 36, 39, 43, 45, 46). For numerous interview participants, accreditation and unclear assessment criteria (Interviews: 11, 13, 22, 26, 27, 31, 32, 34, 36, 39, 42, 43, 45), together with problematic issues that were already discussed in this chapter (i.e. number of HEIs, standardisation, funding and governance, R&D etc.), have impacted negatively the quality of higher education in Bulgaria.

The data indicates that interview participants are concerned about the quantitative criteria for evaluation of quality in higher education when it comes to teaching and research (Interviews: 22, 26, 29). An academic in public university states that salaries of academics are planned to be determined by the number of publications in future, which is a novation in the context of Bulgaria. Yet, teaching and quality of education is not considered during the assessment of academic performance. As explained by an academic in public university:

“The transformation of higher education when it comes to evaluation and assessment of academic performance is such that we academics are now pushed to have more publications. In x years’ time, the number of published academic works will become essential for determining academic salaries. This is an absolute clash of concepts. How can the quality of education be raised when measured through number of publications in prestigious journals? Overall, the criteria of whether students are well educated after university graduation remains neglected. In my opinion, there is some mistake in this” – (Interview 22: academic, public university, economics and finance).

Complementary to this, vice-rectors of private university claim that there is a quantitative measurement when academic research is assessed. The issue of evaluation of HEIs simply by the number of professors, doctors and PhD candidates not their qualities, was clearly of concern to two vice-rectors in a private university. Moreover, they also

explained that the assessment of academic research is based on only the number of pages not the content of the piece of work:

“A certain number of pages is required when it comes to publications. Quality is not considered. To illustrate, for a PhD thesis the candidates are obligated to write at least 200 pages with no requirements for the quality of the content. At the same time, if you have 50 pages of high-quality piece of work – this will not be taken into consideration and you will not be given the academic award” – (Interview 26: vice-rectors, private university, business and economics).

Interview 26 was a double interview – two vice rectors from the same institution participated to it. Both of them agreed on the above statement.

As already mentioned at the begging of this section, accreditation is seen as a fundamental issue with a significant importance for the quality of education in Bulgaria. There is evidence in the data that there is a lack of regulations and administrative frame of the accreditation system in Bulgaria, which results in anomalies and corruption such as generating PhD holders (academic rank), who are not merit to be awarded with a doctoral award (Interview 11: academic, public university, criminology). However, this participant states that there are cases where such absurd is more widespread than in Bulgaria (i.e. Romania). Despite the validity of the above statement cannot be evaluated, a closer analysis also reveals that the participant is of an opinion that accreditation is not a problematic issue only for the Bulgarian context.

Likewise, a head of department in a public university (Interview 31) admits that the academics in their university are allowed to grow quickly by compromising with the established criteria for academic growing in positions and ranks otherwise the university will lose its accreditation (as the accreditation requires a bigger number of doctors, assistants, professors and so on). Moreover, a head of department in a public university explains that:

“Unfortunately, the quality of academics tutors that have been promoted in academic ranks so quickly, is not always good enough” - (Interview 31: head of department, public university, law).

In comparison, a head of department in a public university and lecturer in a private university suggests that the focus and the principles of accreditation standards are now changed:

“Focus on new accreditation standards is on the quality of education as an outcome, not as simply providing education as it used to be. Previously, universities have been assessed though the number of the academic tutors, the number of habilitated academics, the number of the textbooks that they wrote and so on. Now the emphasis has been shifted on proving that you are worthy, up to date, liked by students and last but not least that you are competitive” – (Interview 42: head of department, public university/ lecturer in private university, economics).

As it can be seen this view illustrated by the participant of Interview 42 is entirely opposite to opinion of the rest of the interview participants. In fact, this participant is talking about the introduction of feedback systems as part of the assessment of the academic staff, which is valid for both public and private universities in Bulgaria. However, the same participant confesses that they have never seen the results of the feedback loop in the public university, which indicates that this is only a formal procedure with no real impact. Whilst, in the above statement refers to their experience in the private university, where feedback loops are taken into serious consideration.

This strengthens the assumption of an expert and academic about the quality of education in the private higher education institutions in Bulgaria. Private and public universities are delimited although both type of HEIs belong to the same higher education system as private university unlike public ones have a significant level of independence. Data findings suggests that quality related issues are identified in both private and public universities. However, there is a perceptible difference in the nature of these issues. As already discussed, the quality of teaching and research performance of the academic staff is not as important as the quantity (i.e. number of published articles, number of lecture hours etc.). Yet, the quantitative criteria for research and academic growth is the same for both public and private university, as it is established by the national accreditation system. An interesting observation made by an expert that shed light on the statement of interviewee 42, who suggests that student satisfaction is really taken in to consideration in the private universities, which are business orientated and students there pay much higher tuition fees. This, however, also affects the quality of education as academic salaries are fully dependant on the student tuition fees as assumed by and expert:

“My assumptions only. On a positive side, private universities can afford to hire better academic tutors and offer higher level of teaching. On a negative side, the salary of

academic tutors fully depends on the students. Students are the ones that ultimately bring the salaries of the academic staff” - (Interview 20: expert/policy maker).

This explains why much importance is given to whether the academics are up to date, liked by students and so on. Furthermore, a vice-rector in a private university shares that their university is also obligated to meet the requirements of the national accreditation system like the public universities (Interview 32: vice-rector, private university, business and economics). With regard to the standardized criteria for accreditation for both private and public universities, a faculty dean in other private university argued that the accreditation requirements are stricter and more precise for the private universities than the public ones (Interview 25: faculty dean, private university, media and communication). An explanation for why national accreditation system in Bulgaria is stricter toward the private universities over the public ones, is rooted in the fact that there is a general mistrust and reservation toward private HEIs in Bulgaria (Interviews: 42, 35). Data suggests that private universities are proactive in their striving to offer better service to attract a bigger number of students. For example, a vice-rector in a private university explained that their university pay to be certified by the British accreditation system in order to make their service more valuable:

“This university is currently in a re-accreditation period, and we expect inspectors from ‘UK Voluntary Accreditation Institution’ by the end of this month to confirm that we met the criteria of both British and European accreditation requirements. I strongly believe that we (this university) will achieve very good results again. In other words, this university has assessment of both national and foreign accreditation systems” – (Interview 32: vice rector, private university, business and economics).

Nevertheless, an academic in a public university who used to work also in a private university, states that when it comes to the quality of education there cannot be made a comparison between the two in a favour of the public ones:

“Private universities are neither very demanding nor really competitive (compared to the public ones)” – (Interview 7: academic, both universities, law and political studies).

Key insights: Why quality is perceived as a challenge?

The responses from the majority of interview participants suggest that quality of higher education is debilitated as a result of the challenging issues that were

already presented and discussed. In many instances, interview participants felt that accreditation is a fundamental issue with a significant importance for the quality of education in Bulgaria. Furthermore, it is a common feeling among them that compromises are made on a regular basis with the accreditation and assessment of both students and academics.

4.3 Barriers and drivers for the implementation of strategic reforms and innovations in the higher education system in Bulgaria

This section studies the perceptions of both education managers and academics regarding the implementation of innovations and reforms in higher education in order to identify the barriers and drivers to the transformation of the HE system.

4.3.1 Higher Education: sector specifics

In order views of innovations and strategic reforms to be examined in the context of higher education system, an awareness of the specifics of the system is necessary. This section gives insight of the nature of higher education seen through the eyes of the interview participants (Interviews: 12, 13, 17, 20, 22, 23, 31, 33, 35, 37, 38, 42, 43, 44, 45).

Reflection upon conservativeness of the higher education system appeared to be relatively common among the participants (Interviews: 12, 20, 22, 23, 30, 35, 37, 38, 44). This characteristic of the Higher Education system (HE system) has become a subject of discussion as it is fundamental for examining the potential for innovations and reforms within the HE system. Academics from two public universities emphasised on the conservativeness of the system:

‘the higher education system is conservative’ (Interview 12: academic, public university, accounting and finance), and its resistance to dynamic changes: *‘our profession and higher education in general, do not change dynamically’* (Interview 35: academic, public university, criminology). In addition, a head of department in a public university argued that higher education is more conservative and rigid when it comes to undergraduate degrees, but a high mobility and flexibility can be seen in the master courses in the past years (Interview 42: head of department, public university, business and economics).

Likewise, a deputy rector explained that their personal experience shows that changes in higher education system have to be slow but gradual:

“Well, at the end of the day higher education systems is one of the most conservative (everywhere), and the concepts that educational quality a result of traditions in education are stereotypes that are very hard to be overcome. I’m personally not worried about having a resistance as I know that even changes are slow and gradual they are achievable”- (Interview 44: deputy rector, public university, natural sciences: biology and chemistry).

In contrast, a faculty dean in a public university proposes that *‘higher education has to be consolidated in order to be elite’* - (Interview 37: faculty dean, public university, IT).

However, a university rector confessed that nowadays it is very hard for higher education to create elite values as a result of the shifting in the value systems:

“Higher education is no longer massively seen as a value as it used to be” – (Interview 17: rector, public university, natural sciences).

Academics in a public university resonated the changed value of higher education by arguing that nowadays it is simply a business (Interview 45: academics, public university, medicine). Shifting of the nature of higher education from value to business is also approved by an academic in a public university, who consider such changes as quite positive:

“Generally speaking, my observations are that universities have started to change especially when it comes to seeking actively alternative sources for research funding. My personal impressions are that European fund projects have a great contribution to the shifting of HEIs behaviour from fully relating on the state funding into seeking alternative ways to attract funding for academic research” - (Interview 33: academic, public university, engineering).

A policy maker and expert doubts that the changes in the attitudes and behaviour of HEIs in relation to attract funding for research will grow into creating or implementing innovations in the higher education system, which if happens - must be done cautiously:

“I am a supporter of the idea that changes have to be promoted cautiously. When it comes to innovations, I associate them with a knife. You can cut a bread with a knife, but you can also kill someone with a knife. Reflection on innovations in higher education, the

right question is: 'What education?', 'What society?' and 'For what purposes?' Because I constantly repeat that Bulgarian higher education and education system in its present form—does not need innovation. This is not because the system is good or bad, it's just its design, and the type of the society. I know that it will sound ridiculous, but Bulgarian society does not need innovation” – (Interview 43: policy maker/expert).

4.3.2 Reforms in the Higher Education system

Discussion about past, current and potential reforms in the higher education system, intrigued a significant number of interview participants, who actively contributed to the discussion (Interviews: 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 21, 22, 23, 25, 27, 28, 31, 35, 36, 37, 38, 39, 40, 42, 43, 44, 46). The sub-topics that emerged during this discussion were related to resistance to changes and reforms among system actors (Interviews: 9, 12, 15, 16, 18, 21, 22, 23, 28, 31, 35, 36, 40, 42, 44); acceptance of change and reforms (Interviews: 10, 13, 16), and the need of reforms within the system (Interviews: 14, 39, 46).

Data findings show that a part of the interview participants that discussed the higher education reforms, were of opposite opinions: some were against reforms (Interviews: 11, 15, 17, 35, 38, 39), whilst others were totally up for them (Interviews: 14, 16, 26, 31, 37, 46). It could be easily sensed during the interviews that there is a growing demand of reforms in many areas of higher education, but at the same time the resistance to changes is also that big. A faculty dean in a public university argued that even when HEIs are not responsive to the external call for reforms and try to keep the status quo, conditions are getting worse by time:

“In my personal view, there are many aspects of higher education that need to be reformed. When these needs are not met, things are getting worse by time” – (Interview 14: faculty dean, public university, business and economics).

A head of department in a public university added also that any reforms in the higher education would be beneficial for the system, but not for all the stakeholder groups:

“Education is an area in which all reforms are beneficial. However, do you realize what will happen if tomorrow the government decides to reduce the number of HEIs and proposes to the National Assembly to close a university? This will cause regional uprising, the whole city where this university is located will be uprising. I am convinced of this. As

you can see, it is very difficult to implement such reforms” – (Interviews 31: head of department, public university, law).

Some participants suggested that reforms and innovations must be slow, gradual and smooth (Interviews: 46, 16, 38, 44, 11). Yet, there were supporters of more radical reforms and changes. An example of this is the statement of a faculty dean in a public university, who shared that:

“Maybe my opinion is quite extreme, but the principle is as follows: A gangrene wound cannot be cured with Rivanol” – (Interviews 37: faculty dean, public university, IT).

The participant implies that problems of the higher education system can be compared with a ‘gangrene wound’ meaning that they are quite deep and fundamental. Slow and constant changes and reforms are compared to the Rivanol medicine (a very basic solution that cannot solve a complex problem). In other words, small and constant reforms are perceived by this participant as an inappropriate and pointless solutions for complex problems. More importantly, this interviewee opens a debate whether the reforms and the re-design of the higher education system have to be implemented radically or incrementally.

According to an academic in a public university, it does not matter what will be the method of reforming the higher education system – as innovations and reforms have social aspect, which cannot be overcome with changing the system:

“The system can be re-designed. This can improve it in a way that the material world will immediately be benefited. However, the spiritual aspect of this change is what is missing. Systems can be perfectly designed, but people are the ones who give a soul to these systems. All relationships (collaborations and interactions) within the system are generated by the people in the system. And people nowadays are like rotten apple from the inside. This is why I do not believe that things can change for better” – (Interview 39: academic, public university, arts).

This lengthy extract holds an unconventional prospect of how change in the design of higher education system through innovations and strategic reforms, is strongly dependent of the economic and societal development. Here, the interviewee indicates that system design has a spiritual aspect not just a material one. Furthermore, building on the above point, this interview participant seems to regard change of the system design sceptically as according to them people are the ‘soul of the system’, which is responsible for the quality of interactions and collaboration within the system.

4.3.2.1 Resistance to change

The proceeding section discusses the sub-topic of ‘change resistance’ that emerged in a great number of interviews (Interviews: 9, 12, 13, 15, 16, 18, 21, 22, 23, 28, 31, 35, 36, 40, 42, 44). This section further adds to the explanation of the obstacles of innovations and reforms in within the higher education system by presenting findings of how education leaders perceive this resistance to change.

In general, interview participants find resistance to change strongly pronounced both at institutional and national level. On the contrary, only one of the interviewees shared that they have never observed resistance to any form of change (i.e. reforms, innovations) in their university as well as among their colleagues:

“Well, from what I hear from my colleagues, everyone wants this university to develop. This is especially valid for the ones among my colleagues, who have a lot of work experience at this institution and consider it as part of their lives. I have never had a feeling that anybody from my colleagues resist change and does not want to develop” – (Interview 10: academic, public university, criminology).

A university rector of a public university also shared that their university has always supported any initiatives for reforms and changes, unlike many other higher education institutions that are against of such changes:

“This university (the name of the institution) has always been one of the leading universities, not because it has traditions or offers the highest quality of education - these things can be easily proved. Actually, what makes this university one of the leading ones is the fact that it has never tried to avoid quality measurement. Furthermore, this institution has always been initiative for reforms some of which are even radical such as establishing a new design of the whole higher education system. Well, this has led us to conflicts with other HEIs, which does not want reforms of any kind to be introduced” – (Interview 16: university rector, public university).

This narrative indicates a very high resistance in the entire environment, not just in the context of one isolated institution. What strengthens the validations of the above statement is that the source is a university rector. All university rectors are having discussions related to the contemporary issues of higher education system during both annual rector councils

(Interview 17: university rector, public university), and meetings with the governmental representatives. Consequently, they are more likely to be aware of the higher education system not just at institutional level but at a national level as well. Further narratives support both directly and indirectly the idea that generally that the higher education system in Bulgaria as a whole is very resistant. This becomes evident from both the direct and indirect responses of the participants. An expert in innovations and higher education explains that the hands of the government are tied, because of the very strong resistance among academics:

“Bear in mind, that the hands of the government are tied, because of the strong resistance of the academic community towards changes and reforms. They are happy with the high number of HEIs, because each of them wants to continue to manage their institution. By the way, the same is valid for the Bulgarian Academy of Science, which is constantly complaining because of the extreme poor conditions and low academic salaries, but at the same time does not wish to make any serious restructuring and optimization” – (Interview 40, expert in innovations and higher education).

The extract indicates that the strongest resistance is among the academic community and in particular those in management positions. The idea of change and reforms in higher education becomes unwanted as it will mean that many academic in manager positions would lose them if the number of higher education institutions is reduced. Furthermore, as it was previously discussed with the head of department in a public university – implementing such reforms would cause upspring in the cities that these institutions are placed, as the local economics fully relies on them. Similarly, a faculty dean in a public university suggests that changes and reforms in the higher education system must be implemented very carefully because they will cause changes in other systems as well as social buffers (Interview 4: faculty dean, public university, law). This implicitly points a systemic perception and a sense of the whole among these participants when it comes to any kind of change including reforms and innovations.

This preceding section examines a generation (age factors) as a prerequisite for resistance to changes and innovations. This issue arose during the literature review, where it was indicated that post-socialism countries like Bulgaria are in a transition period between the old structure of the higher education system established during the socialism and the modernisation of HE systems promoted by the European Union (Dobbins and Kwiek, 2017). At the same time, narratives provide evidence for a strong resistance to changes and reforms among the academic community. Hence, this section examines a potential relevance between

the age of the academics and their resistance to changes – as may be the older generations that were part from the old system would be more rejecting to the modern one. However, data findings do not categorically reject or approve this statement. Basically, two kinds of opinion were presented regarding the relevance between resistance to changes and the age of academics and leaders: a) one suggesting a relevance between resistance to change and the age of the individual (Interviews: 13, 21, 22, 39); and b) another rejecting such relevance (Interviews: 12, 18, 23, 35).

The first group of interviewees that argue that there is a relationship between the age of the academics and their predisposition toward resistance to changes can be divided into two sub-groups:

1. The first group suggests that older generations are more likely to be resistant to changes (Interviews: 21 and 22);

2. The second group claims exactly the opposite considering the younger generations as more likely to resist changes and reforms (Interviews: 13 and 39).

- 3.

An academic in a public university explains that older generations are more unaccepting to changes and modernisations in the higher education as:

‘the tendency is such that old-generation academics are more change resistant. This due to the fact that old generation academics are brought up in a way that is no longer relevant in the present times. They insist to do their job in a certain way are no open for new experiments’ – (Interview 21: academic, public university, media).

4.3.3 Innovations in Higher Education

What emerged strongly from the data was that the interview participants were either convinced with significant importance of innovations in the higher education sector (Interviews: 1, 2, 44, 11, 15, 18, 19, 24, 29, 32, 37, 38, 41, 46, 9, 21, 24, 36), or absolutely sceptical about both the success of their implementation and the outcomes that they would bring (Interviews: 10, 20, 16, 34, 39, 43, 25, 26, 28, 5, 33, 34, 4, 40, 45). The scepticism of some of the interview participants is based on their observations and experience related to reforms and innovations in higher education. Moreover, the interview participants, who demonstrated rather sceptical and reserved position towards innovations and strategic reforms in higher education, were dominated by the feeling that the term ‘innovation’ is simply a commercial modern term.

Starting with the first group of participants, who consider innovations in higher education significantly important, it can be seen from their replies that although they are supporting innovations – they are not fully aware how innovations can be applied in higher education. For the most of them, innovations are mainly technological. Stronger emphasis is therefore given to the exact and applied sciences, which according to an academic in a public university, are more likely to generate innovations. In addition, this interview participant mentioned the role of the context and culture in the implementation of innovations in an indirect manner:

“Innovations occur, but they are not applicable in all areas of knowledge. Well, it firstly depends on what we understand by innovation. If innovation is seen as the usage of the experience and knowledge of the leading ones – it is not applicable in all areas. If innovation is perceived as the achievement of the various sciences – this is undeniable. However, such achievement is unquestionable only in the case of the exact and applied sciences. When it comes to the humanitarian sciences, it is very controversial ‘where innovation is? (..) Moreover, it is very relative what innovation can be successfully applied in China, in India, in the United States or in England. Well, same innovations can be successfully applied in US, Canada and UK, because of the similar culture that they share” – (Interview 11: academic, public university, criminology).

With reference to this a faculty dean in a public university claims that innovations are of a significant importance as they are part of every process of development. In addition, according to them the role of innovations in higher education in Bulgaria as a member of the EU is to generate cadres that have to meet the EU requirements and contribute to the development of the EU:

“Innovation accompanies every process of development. Higher education cannot be lagging behind modern trends, in the educational sphere, and most of all, the European values that have evolved in this sphere because Bulgaria is a member of the European Union and it is understandable that we, as part of the European family, we also create comparable cadres, which then work for the development of the European Union's economy... The prime objective of any higher education in modern conditions is to create such workforce that is competitive worldwide” – (Interview 1: faculty dean, public university, law).

Furthermore, deputy rectors in a private university argue that the dynamics in business and technologies are so great that currently education worldwide, not just Bulgarian education, have to follow these changes and dynamics. These interview participants shared also:

“It should be the opposite education system has to be one step ahead. Dynamic in real life has been so great in the last 10 years that in fact universities are trying to catch it up with very low rates compared to the speed of technological development. This is a big problem, so we must generate innovations within higher education institutions. However, before to be able to generate innovations, one has to be prepared for change in their mind. This is the hardest thing” – (Interview 26: deputy rectors, private university, business and economics).

The information collected by participant of interview 1 about the role of innovations in higher education reveals that they perceive that Bulgarian higher education has to be designed in a way to match the EU culture and values. However, what is more interesting is the assumption of participant 1 that Bulgaria and the other developing countries within the EU can share the same culture and context with the developed EU member countries. This idea is completely rejected by an expert and policy maker, who thinks that standardisation of the quality of higher education in the European Union is impossible:

“This is a big ‘blah blah’. It’s absolutely impossible. This is complete bullshit. Excuse me for my directness in speech” – (Interview 43: policy maker/expert).

In view of the importance of innovations in higher education, there were different reasons behind this idea. As already discussed, some participants stated that this will help Bulgaria to meet the EU standards. Other claim that innovation in higher education are very important for the development of the academic staff. For instance, a faculty dean in a public university in Bulgaria shares:

“Innovations are really important. There is no development without innovations, because if universities want to improve the quality of education in a traditional way – they will need a huge amount of finances. While if the emphasis is on innovations, universities can improve the quality of education with less investment. In fact, we are looking for a staff that innovation-oriented because there is no academic lecturer, who wants to be far behind in their development from their colleagues” – (Interview 15: faculty dean, public university, IT).

The above opinion is an absolute opposite to that of the policy maker and expert, who argues that generating innovations requires a huge financial resource:

“It is not a coincidence that the research-type universities that are typical for the Anglo-Saxon world are closely related to the sixth technical revolution. In fact, the Anglo-

Saxon world generates this revolution to some extent, as there it can be seen a narrow productivity between the innovative business and the universities that contribute by providing fundamental and applied knowledge. Furthermore, the innovations generated by the universities in the Anglo-Saxon world can be immediately used and integrated in their economy. The creation of innovation is very profitable in the Anglo-Saxon world, so it compensates the unsuccessful trials for innovation. Do you know that in principle only 1 out of 1000 trials of innovations is successful, but you have to be able to provide funding for all the 1000 trials? This is only possible if the effect of one single innovation is of such added value that can compensate all the 1000 trials for innovation. This is why there is a connection between business and an innovative business that is interested in generating innovation as this will bring more profits” - (Interview 43: policy maker/expert).

The information shared by the participant of the interview 43, suggests that massive financial investments are a necessary condition for the creation of a single innovations. Furthermore, the economic environment has to be developed enough in order to integrate innovations quickly, and the business that invest into these innovations to be able to make huge profits from them. Anglo-Saxon world is considered to be the context where this model is successfully integrated. Bulgaria is neither part of the Anglo-Saxon world, nor a developed country. Its economic environment is not developed enough, which explains why the interview participants are rather reserved when it comes to innovation in higher education, or not too deep in their analysis and views about innovation. The viewpoint of a university rector confirms what the expert shared by stating that the broken link between the university and business and the undeveloped national economy are great obstacles for innovations in higher education in Bulgaria. The outcomes of globalisation that affect the prospective innovations in HEIs are also mentioned:

“If we are talking about innovations in the economy that are generated at the universities – this is very tough because such innovations occur in partnership between universities and business. It is valid for both cases: a) when business contact us because it needs innovations; or b) when we create innovations and contact business to sell them. Whatever is the case, it is very difficult for the HEIs in Bulgaria to establish a collaboration with business, as the business in Bulgaria is predominantly small and medium sized that has little interest in innovation. In contrast, big sized business is rarity in this country. The big sized business in Bulgaria is mainly composed of international companies, which have research centres positioned abroad. So, this is a great obstacle” - (Interview 16: university rector, public university).

Therefore, universities in Bulgaria rely on EU funding through projects and programs, but as explained by a faculty dean in a public:

“The problem is that in our country innovations are mainly stimulated and funded by EU projects, which makes them very dependent on the funding of the specific project. Usually, innovations continue until the end of these projects, and are hardly funded afterwards” – (Interview 19: faculty dean, public university, arts).

The fact that innovations in education can be hardly supplied with financial resource at national level, makes such projects unsustainable. In other words, innovations in higher education in the country are either absent, or temporary. Innovations in higher education are absent in Bulgaria because the national economy is undeveloped and the presence big sized business consists mainly from global international companies, which have own research centres abroad. In the cases when there are innovative projects in the higher education sector in Bulgaria, their duration is restricted within the period of the project – because it is hard to be sustained through national funding.

On one hand, the fact that innovation projects funded with EU finances are not sustained through national funding, speaks that innovations are not priority of the country, which is in contrast to the views of an academic in public university who claims that:

“Innovations must be priority of every single country and state” – (Interview 29: academic, public university, accounting and finance).

On the other hand, a question is raised whether a developing country with undeveloped economy can or should make innovations its priority?

Views of the interview participants about innovations in higher education are quite reverse in spite of being beneficial for the system. A former minister of Education and Science in the Bulgarian Government states that:

‘the research process is more important than the knowledge’- (Interview 36: former minister of Education and Science/Expert/Policy maker).

While, a head of department in a public university insists that Bulgarian higher education system needs innovations to generate new educational product (Interview 42: head of department, public university, business and economics). A vice-rector in a public

university perceives innovations as reforms and argues that they are of a significant importance and must be implemented as soon as possible otherwise the problems of the higher education system will be deepened (Interview 44: vice-rector, public university, natural sciences: chemistry and biology). This is also supported by a vice-rector from another public university, who shared during the interview that innovations must not be perceived as a luxury – they are a necessity for HEIs if they want to survive:

“Universities must be constantly changing and updating if they want to survive. They have to constantly renew their teaching programs, courses design, curriculums and methods” – (Interview 6: vice-rector, public university, business and economics).

While numerous participants support innovations (Interviews: 1, 2, 44, 11, 15, 18, 19, 24, 29, 32, 37, 38, 41, 46, 9, 21, 24, 36), many others are rather concerned, reserved (Interviews: 10, 20, 16, 34, 39, 43, 25, 26, 28, 5, 33, 34, 40, 45) or even unfamiliar (Interview 4). A faculty dean in a public university located outside the capital Sofia, confessed that he is not aware with the meaning of the term ‘innovation’ and needs to google it. An explanation was provided to this participant whereat he shared that he cannot comprehend how innovation can be integrated in higher education system due to its high level of conservativeness. According to him education rejects any sudden movement, which means that innovations can only complement a reasonable conservatism. Moreover, this faculty dean states also that innovations are not of a concern of small universities or universities, where finances lack even for the necessities. This participant compared the term ‘innovation’ with ‘solar eclipse’. He assumes that somewhere innovations are happening but in the context of his university and the majority of the universities in Bulgaria:

“this term sounds like ‘solar eclipse’ - something that we are aware of, but it is very distant from us” – (Interview 4: faculty dean, public university, law).

The opinion of this interview corresponds with what was previously discussed about the inability to focus and think about innovation when financial resources for the necessities lack. In addition, this view was also endorsed by academic in another public university, who argued:

“I think that most of the people do not know what innovation is” – (Interview 39: academic, public university, arts).

At the same time, views demonstrating redundancy toward the possibility of innovations in higher education system were reasoned by lack of expert capacity (Interview

28); outcomes of innovations (Interviews: 33, 34, 43); lack of solid fundament (Interview 39); broken link between HEIs and industry (Interview 40); lack of national organisation and strategy (Interviews: 40, 45). As already stated, academics in a public university argue that the lack of expert and administrative capacity makes them reserved about the success of projects or reforms that are related to innovation. Moreover, they shared that there is a political will and policies in favour to innovations, but the administrative and expert capacity of the government is very low:

“On one hand, there is political will. On the other hand, there are problems with the administrative capacity at national level. Hence, innovation projects cannot be funded when administrative capacity lacks which will cost the Bulgarian government loss of finances. If we look at the situation at national level, we will see that it is a vicious circle, because in order innovations to be implemented or generated there must be finances. The finances are there, but there is no administrative capacity in both parties – the provider of financed and the implementors of projects related to innovations in education. I am talking about big innovation projects” – (Interview 28: academics, public university, law).

As mentioned earlier, a number of participants demonstrated quite reserved position toward the outcomes of innovations in higher education (Interviews: 33, 34, 43). An academic in a public university argue that innovations are not the solution to every problem and must not be an end in itself:

“Reviewing innovation, we cannot deny the technological and methodological achievement (i.e. learning outcomes and all new forms of education, methods, forms, technologies that support education. In any case, this is good. However, this does not mean that innovation is panacea (the solution to any problem) – no way. Do you know what is interesting? Sometimes, the drive for innovative approaches is stronger than the pursuit of the goal of education. Then the golden thread that needs to be followed is lost. So, innovation is something of a great importance, but we have to consider and apply them only when they help us to achieve the goals of education or training – (Interview 33: academic, public university, engineering).

An expert and policy maker shared that the assumption that:

‘there is a solution to every problem is a part of the infantile modern thinking’ - (Interview 43: expert/policy maker).

Moreover, he adds that currently innovation has become an obsession worldwide including Bulgaria (Interview 43: expert/policy maker). The paradox is that the obsession in the pursuit of innovation ends with itself. The probable benefits and outcomes of innovations such as solving social or business complex problems are not of an importance. Furthermore, the data suggests that participants are not even convinced with the idea that innovative solutions are better just because they offer novel solutions. An example was given with the distance learning by an academic in a public university, who claims that although this is an innovative form of education – it is a semi-education. Semi-education means that the quality of distance learning is much lower compared to the classic education (Interview 34: academic, public university, history and civilisation).

An academic from other public university explains their scepticism toward innovations in higher education in Bulgaria with the lack of a solid base (Interview 39: academic, public university, soft sciences), which according to academic in other public university results only in efforts to adapt to innovations and changes imported from abroad, which according to them is meaningless (Interview 45: academics, public university, medicine). In other words, innovations are not perceived as tools that can establish major fundamental changes. For an expert in higher education and innovation, organisational innovations are of a primary importance as they are used to change the model of the education system:

“Of course, if we discuss innovations in higher education - we have to start with organisational innovations as they are the ones that modify the system model. Furthermore, the link between transfer of technology and knowledge is completely broken, which is actually the link between university and industry. Innovations and entrepreneurship universities do not exist in Bulgaria, because the government and the HEIs do not have an official policy related to innovations. Innovations in Bulgaria are on paper only. I am stating this as a member of innovation committees”- (Interview 40: expert in innovation and higher education).

4.3.3.1 Aspects of higher education mostly need innovation

When it comes to aspects of higher education that need of innovation three major ones have been indicated by the data findings: a) curriculum (Interviews: 13, 22, 26, 35); b) teaching methods (Interviews: 4,14, 31, 36, 43, 44); and c) IT technologies and high technologies (Interviews: 2, 3, 15, 27, 40). Although, interview participants were not too specific when pointed out the areas and aspects of higher education that have to be improved,

but there could be easily sensed that innovation and change is needed. It is also strongly indicated in the data that these three aspects of higher education are not at the level of the leading European universities. This is seen as being valid for all the three aspects (curriculum, teaching methods and IT and high technologies) listed above.

The evidence from the study would suggest that curriculum and teaching programs need to be updated or even changed, which is especially valid for specific disciplines such as some hard sciences, where technologies are rapidly developing. At the same time, there is content that is no longer relevant and have to be removed (Interview 13: academic, public university, hard sciences). Academic from other public university shared that the changes in the curriculum can be also related to the electronization of education:

“It is not so easy to change the curriculum, but once you do so – the adaptation process is quite fast. We see that a very large part of education is getting electronized. I used to work for Americans, who were doing online courses 10 years ago. In other words, all of the teaching materials are produced in electronic format instead of in print – this allows and encourages students to be more flexible and independent in their learning. Thus, the role of the teachers/ lecturers is somehow minimal. They are more like assistants to students rather than the main figure in the teaching process. As far as I know this is a long-established trend in the developed countries. Bulgarian higher education needs this shift toward electronization, and this university (the name of the university) is the leader in these matters as we have already started to do a significant part of our administrative and teaching jobs electronically” – (Interview 22: academic, public university, economics and finance).

Deputy rectors in a private university are also sharing the opinion that teachers/ lecturers must have more supportive and assisting role and the students must be more independent in their studies, but they expressed their position in a much more radical manner. According to them the current curriculum is out-of-date and has to be completely changed not just upgraded, which is valid not only for Bulgaria but for the whole world:

“Well, first of all, the structure of the curriculum and the content of the curriculum are the most urgent aspects of higher education that need innovation. They must be revised entirely, because curricula in the Bulgarian higher education institutions are designed to meet the education requirements of 20, 30 years ago. However, this is not valid only for Bulgaria, it is valid for the whole world. Education was designed in the past in a way that teachers/ lecturers had a leading role, and students rely on the teachers to explain them the content. It was a common practice that lecturers teach between four to six hours per subject

per week. Why? Because students from 20 years ago did not have access to internet, and their only source of knowledge was their lecturers” – (Interview 26: vice-rectors, private university, business and economics).

A clear theme running through the data was interviewees’ awareness that higher education must adapt in accordance with the social and economic dynamics. In other words, higher education system must be flexible enough to address the contemporary issues of all kind. In this set of thoughts, an academic from public university shares that the introduction of new sciences/disciplines is essential form of innovation as in their field new type of problems and issues are emerging that did not exist in the past:

“There must be innovations related to the introduction of new disciplines. For example, in the case of the science that I teach – there are new kinds of crime, so we must update our curriculum and introduce a new discipline that deals with these new forms of crime. Such innovations are essential as life and issues are changing and so do their solutions” – (Interview 35: academic, public university, criminology).

Other key aspect discussed was related to the need of innovation regarding to teaching methods (Interviews: 4,14, 31, 36, 43, 44). A head of department in a public university suggested ‘distance learning’ as an innovative method that needs to be integrated in the higher education system in Bulgaria, as it will improve the access to education:

“The modern world is such that students, especially undergraduates, cannot always attend to the lectures and seminars. Most of them have to work or to look after their children if they are older. It would be great if we had this option to offer distance learning as an innovative form of studying along with the traditional forms of teaching” – (Interview 31: head of department, public university, law).

As it was previously discussed in this chapter, although distance learning is perceived by the interview participants as innovative teaching method, which improves access to higher education. However, distance learning is associated with low-quality of education. This is indicated in the data, when an academic in a public university names it ‘semi-education’ (Interview 34: academic, public university, history and civilisation).

Many interview participants were aware with the importance of innovation related to the teaching methods (Interviews: 4, 14, 31, 36, 43, 44), but they had contrasting ideas about the exact teaching method that needs to be improved. For example, a former minister of

Education and Science argued that innovation in the context of teaching method has to be related to the promotion of new kind of relationship between students and lecturers:

“In this sense, I’m not sure what exactly should be done, but I will share my point of view. In my opinion, the relationship between students and academics has to be a subject of innovation in this country. This will increase the control of lecturers over the students. Students in Bulgaria are very relaxed during the semester (not engaged in the learning process), and extremely stressed during the exam sessions. This is something which is not typical for the modern higher education systems”– (Interview 36: policy maker/expert, former minister of education and science).

Similarly, a deputy rector in a public university emphasised on the importance of innovations in terms of the communication environment within the university and the teaching methods including student and staff engagement and workload:

“Actually, we have a credit system, but this is not enough, there is much more to be done in this area. The situation in Bulgaria is such, that by law the lecturer is the one who chooses their methods of teaching”- (Interview 44: deputy rector, public university, natural sciences: chemistry and biology).

Data findings indicated that innovation in the teaching methods is a matter of personal commitment rather than a national innovation policy. At the same time, as it was already discussed in the previous chapter – the improvement of facilitates is perceived as a top priority (Interviews: 17, 10, 2, 21, 23, 27, 31, 28, 38, 41, 45). There is a common belief signified in the data that the improvement of the facilitates in the higher education institutions will lead to the improvement of the quality of education. Thus, little attention is paid to the teaching method. An expert and policy maker challenged the idea that the improvement of facilitates and technologies will enhance the quality of the educational product:

“I associate innovations in higher education with many things. However, one of the most important ones is the teaching method. You will find many HEIs that pretend to offer a high-quality educational product because of the fact that they use computers, IT systems and technologies. This is a deep misunderstanding of the problem, as they are focusing on the subject not the method” – (Interview 43: policy maker/expert).

Furthermore, data from the interviews revealed that innovations in higher education in the context of the developing countries like Bulgaria, have a different meaning and significance in comparison to the developed ones. As it was already discussed, innovations in higher education cannot exist in isolation from the economic environment which has to

be developed enough in order to absorb them. The fact that the innovation based developed economy is absent, explains why the idea of innovation in higher education comes down just to renovation of facilities and the introduction of new technologies. Nevertheless, there cannot be denied that in the case of some sciences such as medical and natural sciences, technologies and facilities are of a crucial importance in contrast to humanities and social sciences (Interviews: 2, 15, 27, 40). A faculty dean in a medical university reasoned this by explaining that technologies and facilitates have to be a bit more advanced than the human factor in the case of the medical sciences (Interview 2: faculty dean, public university, medicine). Likewise, a faculty dean in other public university considers that innovations in higher education should involve following of the Estonian model:

“I think that the Estonian model is very relevant to the Bulgarian context. Their model is IT-orientated with little contribution of human factor” – (Interview 15: faculty dean, public university, IT).

It further appeared in the data findings that the focus on technological innovations is a global trend:

“In general, the focus is now on technological innovation. This means the natural sciences: biology, chemistry, physics and, most of all, engineering sciences. My observations are that companies in the information communication technology (ICT) sector, are orientated toward innovation. So, if academics, in the area of ICT, are proactive – they can establish collaboration with the industry” – (Interview 40: innovation and higher education expert).

4.3.3.2 Experience related to innovation

Data findings suggest that interview participants have limited experience related to innovation. More importantly, what is seen as ‘innovation’ in a developing country like Bulgaria, is no longer perceived innovative in the developed countries. The responds of the interviewees, who discussed their experience related to innovation, can be organised into three categories: a) showing a lack of innovation-related experience (Interview 2); b) confirming that they have innovation-related experience but providing no further evidence and details about it (Interviews: 3, 37, 46); c) stating that they have innovation related experience and provided details about it (Interviews: 20, 1, 15, 41, 44).

A faculty dean in a public university confessed that the only source of innovation related experience is the faculty itself. However, innovation related experience is quite limited and insignificant, which is not perceived as a problem as medical education is generally more conservative:

“My experience in innovative projects or practices is limited to the activities of this faculty. However, this faculty cannot boast much of any significant innovations. Well, medical education in nature is more conservative and sustainable, so that it has to offer a solid ground for further development rather than to be more innovative” – (Interview 2: faculty dean, public university, medical science).

At the same time, a few stated that they have been involved in innovative projects, but do not provide any further details about these experiences (Interviews: 3, 37, 46). For instance, a faculty dean in a public university reported that although they have not been involved in projects orientated toward innovation - they are implementing innovation in their everyday job activities such as methods of education or IT related updates (Interview 46: faculty dean, public university, media sciences). Similarly, a faculty dean in a public university considers their job as a form of innovation as it is related to digitalisation of libraries, which is a process that started recently in Bulgaria (Interview 37: faculty dean, public university, IT).

Last but not least, a faculty dean in a public university described their contribution to a project, which they perceive as innovation:

“My example for innovative project/activity that I contributed to was when Bulgaria joined EU. When Bulgaria became a member of the European Union, the state needed many experts that are familiar with the legal system of the EU. Fortunately, this faculty had staff members that specialized in European countries and were able to quickly respond to this demand. They organized courses and disciplines related to EU legacy and its relation to the national legacy, provided sources like textbooks and articles, and last but not least, established sustainable collaboration with colleagues from other EU states (i.e. France). In fact, these new courses were the first source of information for the majority of the population in Bulgaria (except those who studied abroad). As a result, this faculty has been hundreds of experts in EU legacy so far, which were absorbed by governmental administration. So, as you can see sometimes even humanitarian sciences are responding to the new social

demands and global trends. I consider this as a form of innovation” – (Interview 1: faculty dean, public university, law).

Participants demonstrated that innovations in the case of the developing countries are related to implementing of novel modern improvements into the national context in place of generating such improvements. It is strongly indicated in the data that the role of higher education leaders in the context of developing economies is to translate the knowledge generated in the developed ones and to support its adaptation and integration in the national economy. As already discussed in this chapter as well as in the previous one, distance learning is seen as a form of innovative teaching method. Thus, all projects that introduce distance learning are also perceived as innovative.

A deputy rector in a public university shared that:

“we recently finished a project related to implementation of distance learning”- (Interview 44: deputy rector, public university, natural sciences: chemistry and biology).

Similarly, an academic in a public university discussed that they participated in several projects that promoted innovations in the teaching methods in the context of finance and accountings (Interview 41: academic, public university, finance). Well, there are examples of interview participants who have been part of the expert members of European commission and co-related projects such as Horizon 2020, which were related to emerging and innovative technologies (Interviews: 40, 15). Last but not least, one of the interview participants explained that they showed self-initiative when a few years ago designed a new discipline, which promotes quite innovative and opposite of the orthodox way of thinking in the context of history. The discipline was called a ‘*Comparative history*’, which aimed to build more critical and objective thinking among history students and was novel to the established models of studying history in Bulgaria:

“I was inspired by Herodotus, who stated that Greeks are great, but so do are the Persians, Egyptians and Chinese” – (Interview 20: academic, public university, humanities).

4.4 The internal and external factors shaping the transformation of the higher education system

This section studies the internal and external factors that impact the implementations of innovations and strategic reforms in the higher education system in Bulgaria. This allows

the researcher to gain deeper understanding about the institutional and national contexts. Furthermore, this chapter is divided into two sub-sections: the first one illustrating the main internal factors influencing innovations and strategic reforms in the higher education system: ‘collaboration’, ‘interactions’, ‘decision making’ and ‘organizational structure’; the second one illustrating the main external factors impacting the higher education system: ‘economic’, ‘political’, ‘cultural’ and ‘governmental’.

4.4.1 Internal factors

4.4.1.1 Collaboration

Interview participants were asked whether they collaborate with external organisations or with other departments, as the link between collaboration and innovations is strongly indicated in the literature (i.e. Moon, Mariadoss and Johnson, 2017; Hrabowski III, 2014). According to Hrabowski (2014:291) ‘a surprising number of innovations fail not because the market is not ready to absorb these innovations, but because the responsibility to build business is given to managers are not capable of running it successfully’. ‘The topic of ‘collaboration’ was discussed by 70% of the interview participants. The majority of the interview participants suggested that they or their organisations have established good collaborations (Interviews: 1, 4, 10, 12, 14, 15, 16, 17, 18, 23, 33, 37, 39, 40, 41). At the same time, other interviewees reported that they are not collaborating with business-orientated external institutions (Interviews: 2, 3, 31, 41, 27), or demonstrated a rather reserved position regarding the role of collaborations in general (21, 24, 36) which indicates that they are not collaborating in their work.

4.4.1.1.1 Lack of business-orientated collaborations

A dean from a medical faculty explained that their faculty is not collaborating with external organisations on alliances basis:

“Our discipline is such that we produce doctors, who are on the labour market in the public sector. Therefore, no specific organisation or structure has an interest in financing or stimulating such alliance”- (Interview 2: faculty dean, public university, medicine).

Similar is the situation with the international relations discipline, as according to academics in this field their discipline is also not of an interest of business-driven organisations, but they do collaborate with international or public sector bodies:

“Our students have a mandatory internship in the Ministry of Foreign Affairs, which requires our department to collaborate with the ministry at an administrative level. Furthermore, we also collaborate with international partners on some international projects” – (Interview 28: academics, public university, law and international relations).

The above section shows a lack of business-orientated collaborations with external bodies. In fact, data findings suggest that the academic disciplines are predetermining for the potential collaborations with the industry or any organization that is likely to invest financial resources in such an alliance. Some disciplines are more attractive for the industry than others. Well, this has some limitation and context specifics, as a university rector who is a representative of natural science also listed mainly organisations from the public sector, which their university collaborate with:

“So, we mainly collaborate with: The Ministry of Agriculture; the Forest holding; the Ministry of Education and Science; Employers and the Bulgarian Chamber of Commerce”- (Interview 3: university rector, public university, natural sciences).

4.4.1.1.2 Scepticism toward the role of collaborations

Some interviewees demonstrated a scepticism toward the importance of collaborations based on their personal experience and observations (Interviews: 21, 24). They explained their scepticism with the lack of defined roles and rules within the collaborative projects, which is an obstacle for the multi-disciplinary projects: “In my point of view, within a collaborative project three things must be clearly defined: the tasks, roles and the desired outcome”.

The above statement indicates that academic collaborations are rather precedents that is why they are not regulated and disvalued by the participants. Moreover, a former minister of Education and Science admits that collaboration with people is an integral part of every activity. Yet, they expressed a doubt in the proclamation that collaboration is a key influencing factor for innovation:

“Well, I don’t know whether this is the case. This, I think, is a dogmatic statement, and I am not personally convinced with it” – (Interview 36: policy maker/expert, former minister of education and science).

This interview participant also denotes about the importance of the context where collaborations are observed, as according to them academic profession is more individualistic than collective:

“To be fair, I am also more individualistically oriented, and I think cool ideas are born by some smart people” - (Interview 36: policy maker/expert former minister of education and science).

4.4.1.1.3 Good collaborations

As previously mentioned, interview a big number of interview participants reported that they or their organisations have established good collaborations. These collaborations can be overall divided into four categories: with private organisations (Interviews: 16, 17, 40, 41), with public organisations (Interviews: 1, 4, 10, 37), academic (23, 33, 39), and mixed (Interviews: 12, 14). Data findings suggests that the nature of the discipline is relatively determining about the type of collaboration. In other words, some disciplines are more likely to collaborate with private organisations like the business/economy, IT or applied sciences than others such as the humanitarian. Therefore, it was not surprising that participants 12, 14, 16, 17, 40 and 41 are collaborating with private organisations as they are representatives of the business sciences or applied sciences. Similarly, it is not that surprising that participants 1, 4, 10, and 37 responded that they are collaborating with public organisations or non-for profit ones only as the majority of these participants are representatives of law, police and humanitarian sciences. In fact, law sciences are likely to establish collaborations with both public and private organisations. However, this is not the case of Bulgaria, which is a developing economy, which relies much on its public sector. Thus, multi-disciplinary collaborative projects are very rare in Bulgaria. Yet, there are examples of interviewees who participated in such projects. For example, an academic in the sphere of technical and engineering sciences shared that they participated in a multi-disciplinary research project funded by the EU.

“It would be very positive multi-disciplinary collaborations to be encouraged between universities to seek solutions to complex problems as this will boost the progress in the scientific field. Information technology nowadays allows broad-spectrum analysis on the

one hand, and on the other hand a complex solution to problems” – (Interview 33: academic, public university, engineering).

Similar is the case of the interview participant 40 (an expert), who participate in many collaborative projects with EU funding. The difference, however, is that this participant has been engaged in collaborative projects because of their own individual enterprising and motivation:

“Well, now most of the projects I have been working on since 2004 are funded by the European programs for science and technology development. What I have learned from all the collaborative projects that I engaged in is that the most important thing is the trust and teamwork. This mainly depends on the project manager. Thus, I invite colleagues who I worked with before”- (Interview 40: an expert in innovations and higher education).

4.4.1.2 Interactions

Participants in the interviews were asked about their interactions with colleagues from their own department or other departments. This topic was commented by less than a half of the interview participants (Interviews: 1, 2, 3, 12, 14, 17, 18, 19, 24, 31, 37, 38, 39, 41, 44, 45, 46).

The majority of the interview participants that discussed the topic reported that they have positive interactions with their colleagues (Interviews: 1, 3, 12, 14, 19, 31, 41, 44, 45, 46).

Interviewees divide interactions between administrative and academic, and according to a faculty dean the interactions between academics are *‘quite good’*- (Interview 1: faculty dean, public university, law). However, the interactions on an administrative basis are much more challenging:

“Interactions at administrative level are more challenging because people are different. Some of them are more involved in the organisational problems, while others are uninterested, which causes problems” – (Interview 1: faculty dean, public university, law).

Moreover, there is also a gradual difference between the interactions of people from the same department and with those from other departments:

“Interactions in these two cases are different in nature. Interactions with other faculties is related to the operating of the university and higher education in general”- (Interview 1: faculty dean, public university, law).

In other words, this participant sees interaction with other faculties as less conflicting compared to the inter-faculty interactions. This, however, fully contrasts the point of view of another faculty dean, who see interactions with the other faculties as ‘complicated’:

“So, (pause), the term that best describes these interactions is complicated. I will tell you why. As I previously explained, only three faculties in this university are profitable: Law school, Math school and ours. All the rest are facing losses to some extent. These losses must be compensated by the profitable faculties like mine. So, it is normal that the interactions between me and the deans of the not-profitable faculties will be ‘complicated’ as they have to take money from my faculty” – (Interview 2: faculty dean, public university, medicine).

Individualism of the academics was one again mentioned and suggested by another interviewee who finds it hard to interact with some of their colleagues, because of their strong individualism, and see it as the main obstacle of interactions:

“Interactions are possible with people who are good-natured (positive and open), but there are many people who are self-centred. In other words, they are narcissists who are not cooperative. It’s very hard to interact with such people and we have problem with them” - (Interview 17: university rector, public university, natural sciences).

Data findings suggests that interactions at work is essential for the job performance (i.e. Interviews: 38, 19, 12, 14, 46):

“I think that the positivism and openness for interactions are of great importance for the quality of work”- (Interview 19: faculty dean, public university, arts).

Furthermore, ability to interact with others is given more importance than the professionalism at work:

“According to me communication and interactions between people is much more important than their professionalism” – (Interview 38: university rector, public university, medicine).

Data findings also show that among people, who reported that are intensively interacting in their work, there are some who do it only because they are obligated to (Interview 17).

A university rector from a public university argued that for some job roles and positions, interactions are compulsory:

“When you are at an administrative and management position, as the one of university rector, you basically have no other choice. You have to interact with many people, and each of them has a different problem” – (Interview 19: university rector, public university, arts).

Similarly, a faculty dean in a public university also shared that the interaction with people is challenging, which mainly due to the fact that universities operate as public organisations:

“Well, the most complex problems are related to the interaction with people. In the public administration and academia, you cannot choose the people you work with like in the private sector. So, we have to adapt to people and their professional skills” – (Interview 37: faculty dean, public university, IT).

4.4.1.2.1 Poor interactions

Although, interactions are considered to be quite beneficial and even mandatory for the working process, one interviewee expressed a regret that there is no enough communication between academics within the same faculty:

“Unfortunately, there is no broad professional dialogue in the faculty and I do not know what my colleagues are doing” – (Interviews 18: academic, public university, journalism and media).

The same thing was confirmed by another academic, who also shared that the synchronisation and communication within the department lacks:

“There is no reflex inside the department. To be fair, this is mainly a problem of the management. Previously, we used to discuss and redesign our disciplines together, so there was some synchronicity” – (Interview 24: academic, public university, journalism).

An academic in a public university also proposed that the lack of communication and synchronicity between different departments, institutions and units within the whole higher education system, is the biggest problem (Interview 39: academic, public university, arts).

Basically, data findings also indicate that there is a strong fragmentation and lack of a sense of the whole.

4.4.1.3 Organisational structure and decision making

The preceding two sections discussed collaboration and interactions of the higher education institutions, which aims to give an insight about their internal environment and culture. This section adds further to the narrative of these internal context specifics by presenting findings of how decisions are made within the universities, faculties and department and also for their culture. This topic was discussed by more than the half of the interview participants (Interviews: 1, 2, 3, 4, 14, 15, 16, 17, 19, 23, 25, 26, 28, 31, 32, 36, 37, 38, 39, 40, 41, 44, 46).

4.4.1.3.1 Organisational structure

Organisational structure of the higher education institutions is partly regulated by law, and partly depends on the management (Interviews: 1 and 14). Universities are managed by both collective bodies, and top management:

“So, by law, the university structure is hierarchical. We also have collective management bodies that have legislative powers (i.e. academic and faculty councils). This is all regulated by law, but operational management is rather hierarchical”- (Interview 14: faculty dean, public university, business and economic).

In general, interviewees describe that the operational and administrative work is a responsibility of the top management (i.e. university rector, vice-rectors and deans), while the legislation and the important decisions are discussed and taken by the councils (i.e. academic councils, dean councils or rector councils). This general rule does not apply to the case of every university, although it is regulated by law. In some cases, the role of the rector is more central and important than in others, which is a matter of individual organisational settings:

“The rector's figure in the Bulgarian universities is complex in the context of being a head of administration. However, the function of dean's council, which is the next management unit after the academic council, is not even regulated in the legislation of Higher Education. Moreover, this collective unit is somewhat lost and unregulated, but

practically exists in all Bulgarian public universities. Rather, the structure is as follows: a rector, an academic council, a council of the deans”- (Interview 1: faculty dean, public university, law).

The role of the university rector is believed to be very significant for the environment and the climate of the HEIs according to a faculty dean:

“State universities in Bulgaria have academic autonomy defined in the national law and interorganisational regulations that are publicly acknowledged in the websites of all universities. Decisions are taken collectively, as the bodies that make these decisions are academic council, faculty council, and scientific councils. It is very important, however, who and how leads these boards as it is the leadership of a particular person. In this case of HEIs this will be a rector or a dean of a faculty, whose role is of a great importance for creating a good organisational climate” - (Interview 19: faculty dean, public university, arts).

An interesting point was made by the representatives of smaller universities, who argue that the size of their organisation is an advantage over the larger ones, which are less flexible and optimised:

“I am fascinated by the university management when it comes to flexibility, communication, mobility and decision making” – (Interview 29: academic, public university, accounting and finance).

Larger universities are seen by the interview participants as more rigid, because of the cumbersome administrative procedures. As already mentioned in the preceding sections, public universities maintain large administrations that is, in most cases, ineffective:

“First of all, the administration should be in the service of the academic staff. I will be honest with you... this is not the case. Unfortunately, administration of this university is working itself” – (Interview 28: academics, public university, law).

4.4.1.3.2 Decision making

As seen earlier in the chapter, according to Bulgarian legislation universities are governed by both collective and sole governing bodies. However, the distribution of power between the academic board and the rector depends on the specific organisational context. Nine interviews report that the strategic decisions are made collectively by either the board

of deans or academics (Interviews: 2, 4, 14, 15, 16, 32, 38, 39, 44 and 46). Three of the interviewees, who discussed the topic implied that decisions are actually made individually by the top management, and the board's role is rather formal. When asked whether decisions are made by the faculty board, an academic replied:

“Formally. I understand what I mean. Decisions are pre-made before the councils. There is no discussion” – (Interview 41: academic, public university, finance).

Although, the role of the university rector is related to operative job responsibilities according to the legislative norms – in reality, however, the role of the rector is more significant:

“It is predetermined that the position of the university rector is very important, which is normal because rectors have very big responsibilities. Yet, they are required to present a report to the General Academic Assembly” – (Interview 37: faculty dean, public university, IT).

A university rector clarified that top management is responsible for the administrative decisions, while the decisions related to the academic issues are made by the academic councils consisting of forty members (Interview 16, public university).

A faculty dean in a public university also highlighted the role of the rector for the university:

“I have always told students that fish usually rotten from its head”- (Interview 14: faculty dean, public university, business and economic sciences).

Furthermore, the management style of the university rector is determinative for the decision-making process, and particularly whether decisions are made collectively or individually:

“I have read in the textbooks that there are two types of managers. One is authoritarian manager, and the other is a liberal and democratic, a leader rather. The present university rector is a leader type of manager. Therefore, all of us stick to a common policy that we all have chosen” - (Interview 14: faculty dean, public university, business and economic sciences).

The same was the answer of a deputy dean in another public university who also stated that the decisions are made collectively, because the dean has a “democratic” style (Interview 15: deputy dean, public university, IT and computer sciences).

Four interview participants from public universities reported that almost all decisions are made collectively after a broad discussion (Interviews: 4, 38, 39 and 44). Three out of these four interviewees are part of the top management: dean, deputy rector and rector.

Decision making process in the private universities is much more flexible and facilitated, compared to the public universities. Top management of the private HEIs has more decision-making power and flexibility compared to the top management of the public universities according to an expert in innovations and higher education:

“In fact, in the private universities, almost everything depends on the top management. If any change or idea is approved by the top management, then everything proceeds very fast and there are no hindrances. Private universities are much more flexible to any modifications in both bachelor and master’s programs. In all respects, all kind of decisions are made much faster” – (Interview 40: expert in innovation and higher education).

This is approved by a faculty dean in a private university, who stated that decisions in the public and private universities, are influenced by different factors:

“There are different principles that influence management decision in the state university compared to the private ones which are dependent on state funding. Private universities have to strive to be the best and to enhance their competitiveness” – (Interview 32: faculty dean, private university, business and economics).

4.4.2 External factors

4.4.2.1 Economic

The economic environment was mentioned by many of the interview participants (Interviews: 1, 10, 11, 14, 16, 18, 19, 22, 23, 25, 29, 19, 22, 32, 36, 43, 44, 7). Almost all of these interview participants shared that the economic have a strong impact on their organisations and on the higher education system as a whole. Only one of them explained that the economic environment is not influencing their institution so strongly, because their institution has more social than economic purpose. This means that the jobs of their graduates are guaranteed:

“The situation in this university is more stable as we know that our annual budget is guaranteed. Hence, the economic environment does not strongly impact us” - (Interview 10: academic, public university, criminology).

However, this is not the case of the other HEIs as reported by the interviewees (Interviews: 1, 4, 5, 11, 14, 16, 17, 18, 19, 22, 23, 25, 29, 31, 32, 36, 41, 43, 44 and 46). Economic factors have two aspects: one related to funding of the higher education system and another related to the graduate employability according to a faculty dean in public university:

“If we compare the funding of the higher education sector to the funding of other European countries, we will see that our financial recourses are comparatively insufficient. This is especially true when it comes to the budget of other countries for academic research funding. This funding can be provided only if the economic environment is somehow developed. In other words, it means that there is enough money in the state budget, so allocating more funding for academic research is not going to be a concern. Moreover, things are correlated – one hand economic environment is a consumer of the graduate workforce. On the other hand, a quality workforce is needed to further develop the economic environment”- (Interview 1: faculty dean, public university, law).

The undeveloped economy strongly influences universities in Bulgaria, as the choice of the student candidates is motivated by their future realisation in the labour market. There are universities and courses, which struggle to find student candidates because of the insufficient productivity of the national economy, which cannot offer them working places (Interviews: 17, 14 and 24). A university rector shared:

“The influence of the economic environment on the higher education institutions is massive. If there are factors in the heavy industry, then most of our courses would be overcrowded. People choose this education that can find them a job” – (Interview 17: university rector, public university).

Moreover, economic situation affected more negatively universities in the smaller cities as the majority of the students cannot afford to study without working. A faculty dean from public university in a small city replied to the question of whether the economic environment affect their university in the following way:

“Of course, we are one of the universities that are located in a small town (I mean small in terms of the economic environment) that cannot offer many workplaces. The tendency in the past several years is such that young people have to work while studying,

which is due to the undeveloped economy. Therefore, student candidates prefer to study in the universities located in the big cities, as the business is situated there, and they can easily find jobs. This is not the case of this university, so this is how the economic environment strongly influences us” – (Interview 14: faculty dean, public university, business and economics).

The undeveloped economy affects also the student solvency, which additionally affects the higher education institutions. Private universities are more affected by the student solvency, because they are not financially supported by the state and have to rely mainly on student fees:

“The economic situation is extremely dynamic, unfavourable and threatening for our university as we do not receive any state funding. Our revenue is formed by the student fees and working on projects” - (Interview 25: faculty dean, private university, journalism and media).

Student solvency affect as strongly public universities according to a rector in a public university, who explained that their university cannot:

“Increase the student fees, because of the lack of solvency” – (Interview 16, university rector, public university).

However, a former minister of Education and Science demonstrated a doubt that the economic environment is the only reason for the financial deficiency of the case of the public university mentioned above. He actually implied about the role of the university management:

“Undoubtedly, the economic environment has a strong influence on the higher education and universities. The financial deficiency of the (name of the university) is very strange and it (the name of the university) does not do anything to change it. I don’t know whether you noticed while you are walking around the corridors of the (name of the university), but when you enter into any institution you can easily get what is the situation there. I can draw a conclusion about a minister, simply by entering in the ministry house. Firstly, does anyone stop you and ask you where you are going? Secondly, does someone tries to help you or just kid you and so on? In the (name of the university) when you see that there are six different types of lights: 40, 60 and 80 watts. When you see that students have to wait for 2 hours in a queue just to enrol for the next semester, which is documented in a

notebook which looks almost as a Slavonic-Bulgarian History (laughs) – then it is pretty clear that many things must be improved” – (Interview 16: former minister of education and science).

Implicitly, the interview participant confirmed that the situation of the national economic environment is very challenging, but also stressed on the ways how HEIs respond to these challenges. A faculty dean was categorical that countries which economies are undeveloped, cannot afford better education. The participant suggested also that although it is not a rule that every strong economy has a strong education system – there cannot be observed cases when weak economies have strong education systems. This was reasoned in the following way:

“Education, culture, sports etc. – they are always an expense for every country. The returns of the investments in these spheres are very little. So, a wealthy country can afford to invest in better education, while a poor one can only afford mediocre education” - (Interview 23: faculty dean, public university, police/social sciences).

A policy maker and expert provided a detailed explanation about the link between the industrial development and the development of the higher education. According to him higher education is fully dependant on the industrial development, which explains why the higher education systems in the developed countries are much more advanced compared to these in the developing ones:

“Now it is 2017, and Bulgaria is a de-modernized country with a relatively primitive economy. There is no technological pressure or demand from the so-called Bulgarian business to the HEIs for creating cadres with a high degree of competence in modern spheres, etc. Unfortunately, the Bulgarian economy is not such. Now, I'm not talking about the exceptions, I'm talking about the rule. It is a vicious circle with all the accompanying consequences... In the best case, Bulgarian economy produces products with low or medium added value. So, while the world's leading countries are talking about the sixth technological revolution, while we were at the fourth technological revolution, and we are now back in the 3rd and vice versa. And we are progressively regressing. At best, we are extremely happy if a Western company has a branch in Bulgaria, and open 200-300-1000 workplaces in a factory that produces car detergents” – (Interview 43: policy maker and expert).

In sum, findings suggest that economic environment is a key impact factor for the enhancement and reforms within the higher education systems. At both national and global level, it creates inequality between universities. First, seeing it from a global perspective, according to the findings from the interview series – countries with developed and strong economies have an advantage over the developing ones. This is explained with the low rate of return of the investments in the education sector, which makes it difficult for the governments of the developing countries to devote such great financial resources. Second, at national level inequality is related to two things: 1. big cities are in a more advantageous position compared to the smaller ones, because their economy is more developed and are able to offer jobs for the majority of students who cannot afford to study without working; 2. some universities, faculties or departments struggle to attract student candidates more than others, because the labour market cannot provide work places for their courses and disciplines (i.e. chemical engineers). Last but not least, the organisational capacity of the HEIs for responding to the economic challenges were also considered by the interview participant as extremely important.

4.4.2.2 Political

Political environment was the next external factor that was suggested by the interview sessions and was highly covered (Interviews: 1, 2, 3, 4, 5, 7, 15, 16, 20, 21, 22, 24, 26, 27, 29, 30, 31, 32, 34, 35, 37, 39, 41, 44, 45, 46). Politics related issues are considered to be sensitive (Lancaster, 2017; Renzetti and Lee, 1993). Therefore, participants were informed that this question is related to the political environment in general, and that they are not expected to comment on a concrete party to share their political views. Thus, participants were more relaxed to share their views. The majority of the interview participants, who discussed this topic argue that it has a significant impact on the higher education system and respectively on the higher education institutions (Interviews: 1, 2, 3, 4, 12, 15, 16, 20, 21, 22, 26, 27, 30, 31, 32, 34, 35, 41 and 46). Yet, there were interviewees, who shared that they cannot feel such influence on their institutions (Interviews: 29, 37, 39). Those interview participants, who claimed that political environment does not impact their institutions reasoned their opinions in different ways. For instance, an academic in a public university stressed on the autonomy of the higher education, which makes them totally independent from the political environment:

“Well, I cannot say that the political environment has any influence on the HEIs. Universities are autonomous, this is valid for both the private and public ones. So, the

political environment cannot impact funding of the HEIs”- (Interview 29: academic, public university, accounting and finance).

Perhaps, this interview participant considers that the political environment does not influence higher education institutions because they were only concerned about funding. Yet, according to many of the interviewees there are other ways in which the political environment can impact the higher education institutions such as uncertainty. This uncertainty due to the frequent government resignation in the country during the past 8 years (Interviews: 2, 13, 14, 16, 17, 25, 27, 28, 32, 35, 37, 41, 45 and 46).

The next interview participants, who does not really consider the political environment as an influential factor explained:

“Political situation in Bulgaria is relatively stable compared to what is happening in Europe. Despite the extremes in a political context, our main institutions are functioning” – (Interview 37: faculty dean, public university).

This participant does not give much credit to the uncertainty as an external impacting factor as it is a global issue which is handled relatively good at a national level according to them.

As it was already revealed the majority of the interview participants that discussed this topic see that the political environment as highly influencing external factor (Interviews: 1, 2, 3, 4, 12, 13, 14, 15, 16, 17, 20, 21, 22, 25, 26, 27, 28, 30, 31, 32, 34, 35, 41 and 46). However, the reasons why they see it as a problematic issue differ. Overall, data suggests that there two aspects of the political environment that are impacting the higher education system within the country. The first one is related to the uncertainty and political instability (Interviews: 1, 2, 3, 22, 30, 32, and 45). The second one is related to the politicised education system (Interviews: 3, 15, 16, 20, 35 and 41).

4.4.2.2.1 Uncertainty

According to a faculty dean politics is directly responsible for the passing of laws, polices and regulations. When asked whether the political environment influences the higher education system, the participant from the interview 1 replied:

“Of course, it is possible as the fast-changing political environment leads to the adoption of variety of laws and regulation that affect higher education system, and respectively the higher education institutions. As an example, it has been proved that the law for the development of the academic staff is a failure as it has created many problems in the development of the academic staff. To elaborate, on the one hand, it accelerates career and academic development. On the other hand, it lowers the quality of the academic staff – (Interview 1: faculty dean, public university, law).

Many narratives shared the same perception of the political environment and the uncertainty that it generates. Lack of sustainability in the norms and regulations concerning higher education, is pointed out to be one of the most problematic aspects of uncertainty:

“There is uncertainty in the regulatory framework, in the projects we work on. Always someone from the government says, ‘we have to change this or that’. There are often cases when the government proposes a normative act at the beginning of the year and then changes it five times by the end of it. So, it is this environment of uncertainty that must be changed as there is no stability and certainty. You probably know that there are 200-300-year-old laws in England, which might be absolutely ridiculous, but they are a norm. One can adopt a behaviour on the basis of a norm if this norm is sustained” – (Interview 2: faculty dean, public university, medicine).

An academic in a public university also added that this frequent government resignation prevents reforms and innovations, as what is generated by the former governmental leaders is not sustained by their successors (Interview 30: academic, public university, medicine).

A faculty dean in a private university provided an explicit explanation about the effect of the frequent change of the governments on reforms and innovations in the higher education system:

“The fact that five governments have been changed for two years in Bulgaria, creates huge problems for this university, which is working on European research projects. These projects were frozen because of this political ambiguity and instability in the country. There cannot be any educational reforms when the country is managed by administrative governments until the permanent ones are elected. The governing period of these

administrative governments is very limited, and they often are committed with a certain task” – (Interview 32: faculty dean, private university, business and economics).

The above segment was also confirmed by a university rector, who gave more information of what frequent changes in the top governmental management means:

“I have been a university rector for six years now. Eight ministers of education and sciences have changed since then”- (Interview 17: university rector, public university).

Moreover, the above point of view was also shared by another academic from a public university, who also shared that the political environment can bring either stability of instability. According to them, in the case of Bulgaria it has a negative impact on the higher education system:

“Political instability affects industry and respectively higher education. Unfortunately, this is also the case in Bulgaria” – (Interview 22: academic, public university, economics and finance).

In this set of thoughts, academics from a public university explained the lack of sustainability in the policies and regulations with the emphasis on the individuals rather than the strategies:

“These political and governmental changes lead to the big flow of different people in the management of the governmental bodies who have diverse priorities and do not stick to any national strategy” - (Interview 45: academics, public university, medicine).

A faculty dean in a private university stated categorically that they cannot see a policy of a sustainability (Interview 25: faculty dean, private university, media and journalism).

4.4.2.2.2 Politicised education system

The findings suggest that political environment does not influence the higher education sector only through creating uncertainty, but also by the politicising of the higher education system and institutions (Interviews: 15, 16, 20, 35 and 41). An expert in higher education and public governance explained that the political environment and politics in general directly influence the education sector:

“Politics directly impacts higher education sector. The very first harm or positive that a government makes in two spheres: education and law” – (Interview 20: exert/policy maker).

Interview participants suggested that the most common way of politicians to interfere in the higher education system is through allocating state funding to some universities over others. They can hardly interfere in the teaching curriculums as especially public universities are more rigid and conservative. An academic in a public university was even brave to share that the state finances that higher education institutions receives are only based on personal relationships rather than any professional merit:

“Politics directly influences HEIs as I know that the budget of this university depends only on personal contact with political and governmental figures. It is not based on professional merit despite the common rules of the state regarding the funding of the HEIs. For example, in order the university building to be repaired it must be approved by the ministerial council, which means that we need to have a direct connection with some of the leading figures there otherwise we will not receive any money” – (Interview 41: academic, public university, finance).

A faculty dean in a public university validated the above statement, which according to them is absolutely wrong and in conflict with the purpose of education:

“Education is developed on the basis of traditions and needs of both the economy and society, not on the basis of the political situation in the executive (government)” – (Interview 1: faculty dean, public university, law).

An academic from a public university explained also that politicising of the public sector is very common in Bulgaria including higher education sector. According to him the private universities are even more likely to be influenced by this politicisation, as they are less conservative:

“Here in the public universities, things are more conservative, more stable and more disciplined than in the private universities, where politics probably has a bigger influence” – (Interview 35: academic, public university, criminology).

As implied by the findings, politicising of the higher education system is malicious as according to a faculty dean in a public university:

'It consumes the good professional cadres'- (Interview 15: faculty dean, public university, IT).

It is clear from the interviews that the professional qualities of higher education management in both the government and HEIs are less important than their political belongingness. In addition, the political system is such that politicians are not stimulated to think and act strategically, which results in lack of continuity of government:

"I told the media more than 12 years ago that the most serious and fundamental problem in the current system is that politicians (including top management in the education and science ministry) think within their mandate only. This due to the fact that they cannot benefit from a strategy that will bring fruits after 10 or 20 years, so that they are only interested in tactics that will give results within 1-2 years" – (Interview 16: university rector, public university).

To sum up, data findings show that the political environment has a direct impact on the higher education system and all related institutions. Moreover, it promotes uncertainty, instability and lack of continuity at both system and institutional levels. The situation is also worsened by three facts: 1. Top management in the higher education sector is giving priority to tactics over strategies; 2. Top and middle management positions in both the government and higher education institutions are mainly given to political rather than professional candidatures; 3. Political interference is quite common.

4.4.2.3 Governance

This section complements the previous one by giving a closer look to the national governance of the higher education system, and its role for the implementation of strategic reforms and innovations. This topic was highly covered by the interview participants, who mainly discussed two aspects of it. The first one is related to 'the role of the government' (Interviews: 1, 3, 4, 5, 13, 15, 16, 19, 24, 25, 26, 27, 28, 30, 32, 33, 35, 37, 38, 41 and 45), and the second one is related to 'whether education is a priority of the government' (Interviews: 2, 12, 14, 17, 23, 29, 31, 34, 36 and 45).

4.4.2.3.1 The role of the government

This theme starts with the introduction of how the government functions and what are its mechanisms to impact the higher education system and mechanisms. Understanding of the relationship between the government and the university is significantly important for correct judgements of the views of the participant. The first participant who gave an explicated explanation about the national structure concerning higher education about the legislative role of the government. They explained the legislative regulation as follows:

“The role of the government according to the Bulgarian constitution is to ensure that laws and norms are implemented correctly. This means that our country needs a new modern and perfect legal framework, which must be created by the government. In fact, government prepares the draft laws, which have to be discussed and adopted by the National Assembly... What the government is currently missing, is the assessment of the impact of the normative acts of the law on the higher education over a certain period time... Education is a sphere where there must not be a conjunctural policy, there must be continuity instead” – (Interview 1: faculty dean, public university, law).

The segment above indicates that the government proposes changes without being interested in their effect on the higher education. As it was previously indicated top management prioritise tactics over strategies and does not assess the impact of the norms and regulations that they propose. In addition, the lack of assessment of the effect on the laws and norms is perceived by the interview participants also as a lack of regulation. A university rector claimed that the role of the government should not only end with the proposal of the normative acts and regulations. It has to also involve an implementation of control and regulation of these norms:

“The government has to regulate things without (C) in the universities. I have always said that the easiest way to regulate things is to stimulate the best ones by promoting a competition between universities. For example, a competition related to the quality of academic research and publications between universities” – (Interview 16: university rector, public university).

Higher education system in Bulgaria in its current version does not foster innovations, reforms or competition between universities, which according to one of the participants can be explained with the lack of motivational mechanisms. In fact, the higher education system

is characterised with “inertness” (Interview 24: academic, public university, journalism). An interesting point was made by academics in public university, who shared that the EU funds is what motivates the government to implement reforms and changes to the higher education system, but at the same time there is a lack of administrative capacity:

“The principle of the cohesion policy for the current programming period of 2014-2020 is money for reforms. So even if the government is not motivated to implement reforms, it is obligated to do it because of the EU funding. So, many strategic documents have been written and proposed to the European Commission regarding education reforms. A national strategy has been adopted accompanied by two operational programs in the field of innovation: ‘Competitiveness and Innovation’ and ‘Science and Education for Smart Growth’ ... The introduction and implementation of reforms require two things: political will and administrative capacity. The political will is there, but the administrative capacity at governmental level is lacking” – (Interview 28: academics, public university, law).

The above segment indicates the lack of quality human resources among government administration, which is perhaps related to the brain drain phenomenon discussed in the previous chapter. The views of the interview participants differ when it comes to the role of the government for the implementation of strategic reforms and innovations. These views can be summarised into three categories: 1.the government has a major role (Interviews: 4, 5, 15, 17 and 44); 2.the government has a regulatory role (Interviews: 16, 32, 33, 38, 42); 3.the government has a secondary role (Interviews: 13, 19, 25 26, and 29).

Those of the interviewees who see the role of the government as a major one neglect the individual and institutional responsibility. This perception can be explained with the political background of the country, which is a former socialist republic. In the period before the fall of the socialist political regime, the government played a comprehensive role in all economic and social activities (Dahl, 2017). Furthermore, interview participants that consider the role of the government as a major one, believe also that the state should be the main financial sponsor of the higher education institutions and their activities. A policy maker compared the expectation industry to fund education and science as an ‘illusion’:

“The role of the government is significantly important. In Bulgaria, the government is the social factor that is responsible for the optimal distribution of the financial resources among universities. I think that this illusion that the private initiatives and private funding will displace the state function, has long been forgotten. The government and the state have

an exclusive responsibility for the development of higher education. In my opinion, no one should question the role of the government” – (Interview 5: policy maker/expert).

Likewise, a university rector in a public university demonstrated total scepticism to the idea that the private sector can fund academic research:

“I’ve been told that a lettuce greenhouse factory will fund scientific biological research, but this all myths and legends” – (Interview 17: university rector, public university, natural sciences).

A balanced approach was demonstrated by a faculty dean in a private university, who on one hand criticised that the present governance of the higher education system, but on the other hand consider the role of the governmental body as considerably important. The present design of the higher education system is not orientated around the right motivational factors, which puts the public universities in a less advanced position compared to the private ones. Thus, it is a responsibility of the government to change these motivational factors:

“I believe that the role of the government in the creation of innovation policies is extremely important for a number of reasons. Starting from provide funding, setting rules for business regulation, and reforming the system. So, the role of the government should not be neglected. Moreover, it has, in my opinion, a central role for the reforming of the higher education institutions” – (Interview 32: a faculty dean, private university, business and economics).

A former minister of education and science explained that the role of the government in the present situation is significant, because higher education institutions are mainly funded by the state (Interview 36: former minister of education and science/ expert). As it was mentioned above, a number of interview participants think that the role of the government should be rather regulative and moderative (Interviews: 16, 33, 38, 42). Their views were closer to the capitalistic philosophy where the governmental body should be rather regulatory and complementary (Dahl, 2017). Moreover, these interviewees expressed the opinion that competition between HEIs is a crucial motivation factor that can increase the quality of the education product. An academic in a public university stated:

“I don’t think that the state should have a leading role, it should be a moderator and regulator instead which supports and facilitates the process of interaction between, industry, science and education” – (Interview 33: academic, public university, engineering).

Data findings suggest that although the role of regulator is essential for the higher education system, the government does fulfil it:

“The government has many tools to influence the higher education system. In fact, the government likes to manage directly than to regulate, because regulation requires other type of competences such as mediation between two sides, broaden horizon and long-term orientation” – (Interview 42: a head of department, public university, business and economics).

In other words, a regulation requires rather long-term orientation, systemic approach and focus on strategy rather than tactics. As it was previously discussed in the previous section, this is a problem resulted from the political system in the country. Yet, there are interview participants who give more credit to the institutional and individual roles than to the government (Interviews: 13, 19, 25, 26 and 29). An academic in a public university stated that the role of the academic councils at universities is bigger than that of the government (Interview 13: academic, public university, medical science). Moreover, faculty dean in a public university sees students as a major driver of reforms and innovations:

“Ministry of Education is definitely trying to endorse innovations, but I think that in the field of higher education – students are the main factor that stimulates universities to implement innovations” – (Interview 19: faculty dean, public university, arts).

An academic in a public university also shared that the initiative must start from within HEIs, not from the government:

“In my opinion, higher education institutions are the ones that are active, not the government, when it comes to innovations and reforms. Government is responsible for the composition of a national policy, which is modified in universities. Yet, initiative comes from within” – (Interview 29: academic, public university, business and economics).

4.4.2.3.2 Is higher education a priority of the government?

Despite, the differences in the opinions of the interviewees of whether the role of the government is primary or secondary – data findings show that it is a significant one. Therefore, participants were asked whether they feel or observe higher education sector be a priority of the government. A number of interviewees discussed this topic (Interviews: 2, 12, 14, 17, 23, 34 and 45), whereas six out of seven are of the opinion that education is not a priority of the government. A university rector in a public university was the only one among the participants who discussed the topic, who thinks that higher education system is a priority of the government:

“In fact, education is important for the government. Any government is concerned about education” – (Interview 17: university rector, public university).

The rest of the participants demonstrated a disappointment of the fact that higher education is neglected by the government, which according to an academic in a public university has been the case even during the socialist period:

“Education has been funded by a residual principle since Todor Zhivkov’s period (the period of socialism) ... All governments state that education is their top priority, but it is only words. Actions and funding are not matching these words. It is absolutely wrong education to be funded on a residual principle”- (Interview 34: academic, public university, history and civilisation).

Interview participants deliberate that education and respectively education is not a priority of the government due to two reasons: 1. funding of the HE system; and 2. regulation of the HE system. A head of department in a public university displayed their discontent in a direct manner by implying that the government has been passive in its role of regulator as it was already discussed. When asked if the higher education system is a priority of the government, the interviewee replied in the following way:

“No! It’s definitely not. I am saying it frankly without any worries and concerns. I am not speaking about any concrete government...Unfortunately, higher education has never been a priority of the governmental policy. If it was a priority, at least the government would do an evaluation of whether Bulgarian society needs 9 law schools or not”- (Interview 31: head of department, public university, law).

A faculty dean in a public university even stated it is not only the education is not a priority of the government – according to them, it is actually its last concern (Interview 2: faculty dean, public university, medical sciences).

To sum up, the findings from the interviews state that the governance of the higher education system is perceived by interview participants as a very influencing and at the same time challenging external factor. The majority of the interviewees believe that the role of the government is more meaningful for the transformation of the system through strategic reforms and innovations than this of the higher education institutions. Yet, still there were participants who were of the opinion that the personal and institutional initiative and role is more important for innovations and reforms than the governmental.

4.4.2.4 Cultural and historic background

This segment portrays briefly the Bulgarian context, where two main aspects are covered: 1. Historico-cultural background; and 2. Bologna framework. The review of the literature outlined two context specifics, which importance for the Bulgarian context is evident. The first one is related to the alignment of the Bologna framework in 1999 (Interviews: 11, 23, 33, 34, 42 and 43), and the ongoing transition period since the fall of socialism in 1989 (Interviews: 7, 19, 33, 40 and 43). Moreover, a policy maker and expert emphasised on the importance of examining the context of the problem for building a holistic point of view. Explaining a problem out of the context is perceived as rather a fragmented approach (Shaw and Bruin, 2013):

“We need to understand the problem, so we have to look at its system-historical context precisely. Thus, we can evaluate whether some strategies or changes are possible to occur. Only if we are aware of the design of the higher education system, we can understand the resistance to change, the resistance to reforms” – (Interview 43: policy maker/expert).

4.4.2.4.1 Transition period

Overall, the participants described this period as negative for the country and especially for the higher education system. An academic in a public university described the transition period in the following way:

“It is characterised by moving from one crisis to another” – (Interview 7: academic, public university, law and political science).

Higher education was strongly impacted by the crisis of the transition period especially at the beginning of it because the reforms and the development were neglected (Interview 21: academic, public university, journalism and media). Furthermore, data findings suggest also that the transition period is also characterised by a duality of visions:

“The problem of the transition period is the influence of both the old and the new authorities” – (Interview 33: academic, public university, engineering).

Elaboration is needed as due to the linguistic and cultural dissimilarities, as the meaning attached to the quote cannot be simply explained in a single sentence. This participant means that the higher education system is equally impacted by the old design and philosophy (from the socialism period), and the new global (western) influences and models. An expert in higher education and innovation proposed also that the transition period impacted quite negatively the higher education sector by the one-sided mobility of the high-quality cadres to the private sector or abroad:

“I have analysed these trends, and my analysis show that the transition period has had an adverse effect on the entire scientific community and the whole higher education system. Those who are cadres of a high-quality moved to the private sector. This is also valid for the government administration” – (Interview 40: an expert in higher education and innovation).

The explanation of the academic and administration mobility is rooted in the low salaries in the public and higher education sectors. As it was already mentioned several times higher education institutions are predominantly public. Furthermore, they are operating as public institutions. An academic in a public university shared that the change resistance of the older generations further aggravates the situation. In fact, interview participants indicate that the Bulgarian higher education is torn by two opposite forces: one that is a supporter of

the old design of the system (during the socialistic period); and another that wants the system to be modernised (Interviews: 7, 33 and 36).

“Old generations that are burdened by a pseudo-Marxism, find it very hard to change. They haven’t still accepted and reconciled the change of the system” – (Interview 7: academic, public university, law and political studies).

4.4.2.4.2 Bologna framework

The question related to the role of the Bologna framework for the alignment of the historico-cultural background were guided by literature. This topic is a subject of interest for this thesis due to the widely spread conviction that science-based innovation is the driver of economic growth and development. Thus, higher education institutions are seen by political leaders to have central roles in the transformation into knowledge-based economy and society (Vögtle and Martens, 2014). Surprisingly, this topic was slightly covered (Interviews: 11, 23, 33, 34, 42 and 43), although it was indicated by literature to be considerably important (Vögtle, 2019, Olsen and Maassen, 2007; Vaira, 2004; Krucken, Kosmutzky and Torca, 2007). Interview participants suggested that the main purpose of the Bologna framework is to structure and organise education and respectively higher education system:

“The Bologna system actually structures the higher education systems as follows: bachelor, masters and doctor degrees”- (Interview 42: a head of department, public university, business and economic science).

Data findings suggest that interviewees display rather sceptical or negative positions toward the Bologna framework alignment or at least how it is applied to the Bulgarian context. An academic in a public university associated the Bologna framework alignment with reducing of the quality of education:

“In short, the essence of the Bologna process is to change the structure of the higher education degrees to 3-2 (3 years bachelor’s degree course and 2 years master degree courses). I’m personally sceptical about what I observe as it seems to be that everything is getting worse including people. Quality is diminishing due to a number of issues. The Bologna framework promotes a new strategy for structuring higher education, which is similar to when a football coach changes the system from 4-3-3 to 3-5-2. However, it is the players that play not the system”- (Interview 35: academic, public university, criminology).

Much more radical point of view was demonstrated by an expert and policy maker, who described himself as firm opponent of the Bologna system, as its philosophy fully conflicts with his views regarding the design of the higher education system:

“I am a complete adversary of the so-called Bologna system. To me, this system produces a massive quantity of morons. Einstein said, I will quote directly: ‘There is nothing more practical than good theory’. So, a person who has a fundamental theoretical knowledge can be good in any specific direction. Bologna system, which is absolutely dominating in Europe, is just the complete opposition of this philosophy. In other words, Bologna system is orientated toward generating people, who are big experts in very narrow areas. As you maybe know, Aristotle said: ‘What is a specialist? A person who is learning more and more about a more and more narrow field, and in the end this person is an idiot’...On the contrary, the broad-minded person, who got fundamental theoretical training, is the best practitioner. The opposite is not true”- (Interview 43: policy maker/expert).

This response signifies that the Bologna system is opposite to the philosophy around which the Bulgarian higher education was built. This conflict reflects the polarisation of the higher education system, as the previous system design and the one that the Bologna system introduces are contradicting. Thus, it results in a massive change resistance among half of the system actors (Interviews: 33, 23 and 11). Torn between the old system design and the new one promoted by the Bologna system - the higher education system is still in a transition period. Bologna framework was introduced in Bulgaria since 1999, but it was not fully applied which the interviewees consider to be the biggest problem:

“So, this process of adaptation is influenced by the conservative education system in Bulgaria, which does not accept changes. We accepted the Bologna system on paper only”- (Interview 23: faculty dean, public university, criminology).

The change of the higher education system design is related to the change of the political system in the country. An expert shared that the previous system was criticised a lot for being primitive and too politically bound:

“They say that the previous system was very primitive. It is true that we used to teach about partisans (members of irregular military), but it is also true that we used to teach

Shakespeare, Goethe and Pushkin. We were learning a little bit about everything, which I do not find a weakness. It is just the opposite, this supports and enriches the process of thinking, and made it possible for a 16-year-old to be able to choose their career path at this age” – (Interview 20: expert).

Despite, the prevailing negative and sceptic views among interview participants, yet there were positive ones. An academic in a public university shared that the biggest advantage of the Bologna system is related to the academic and student mobility:

“The positive changes are related to the exchange of students and lecturers. This is a very positive thing, which is on the merit of the Bologna system. Bologna system supports academic collaborations by facilitating and funding it. Funding is not based on the university capabilities and development. Student exchange raise horizons, visions even when it comes to teaching methods, or the accumulated knowledge” – (Interview 11: academic, public university, criminology).

Chapter 5 Further Analysis, Interpretation and Discussion

5.1 Chapter Introduction

The review of the literature reveals that there is a growing need for conducting research on innovation outside of the traditional science, which involves mainly technological and product innovation (Shaw and Bruin, 2013). There is a demand for gaining more insights into innovation within social settings, where both theory and context are equally important. Furthermore, millions of people around the globe seek to find collective solutions to the both social and economic issues that they face, which according to Gallouj, Rubalcaba, Toivonen and Windrum (2018) can be achieved through social innovation. Social innovation is a form of innovation that is believed to bring balance in the socio-economic development (Moulaert, 2016) by proposing original solutions to old societal problems and issues, which are more efficient, effective and sustainable than the existing ones (Ims and Zsolnai, 2014). As previously discussed, innovation in the higher education system, which transforms it into modern higher education system is an example of social innovation (Johannessen, 2013).

This thesis examines the transformation of the higher education system through the implementation of strategic reforms and innovations, which are associated with organizational change, transformation and sustainability (Howard-Grenville et al. 2017).

This thesis studies the transformation of the higher education system through the organisational learning perspective, as it represents the process of ‘generating, distributing, developing and translating knowledge into innovation’ (Zappa and Robins, 2016: 295). This study aims to fill the gap in the existing literature by offering an empirical examination of the phenomenon of social innovation from a system perspective, which according to the secondary findings, is ‘fragmented’ and ‘non-cumulative’ (Cajaiba-Santana, 2014; Dawson and Daniel, 2010; Pol and Ville, 2009). Therefore, this chapter sights to address the following research questions:

1. What are the main challenges of the higher education system in Bulgaria?
2. What are the barriers and drivers for the implementation of strategic reforms and innovations in the higher education system in Bulgaria?
3. What are the internal and external factors that influences the transformation of the higher education system in Bulgaria?

To address these questions the researcher:

- Reviewed a number of relevant studies, which guided the interview questions.
- Adopted a single-case study strategy, which in the context of this research, means a whole higher education system.
- Conducted 46 semi-structured in-depth interviews with three categories of education leaders: academics, policy makers/experts and top and middle university managers (rectors, deans and head of departments) from fifteen universities and two governmental bodies (Ministry of Education and Science; and The Education and Science Committee in the Parliament).
- Employed qualitative research methods, cause-effect analysis, multi-level analysis and thematic analysis.

Additionally, with regard to the literature on social innovation, the argument made by Japperson and Meyer (2011) also guided the researcher to apply multi-level analysis (individual, organisational and system) to the second research question. As already discussed in the literature review chapter, Hasanefendic et al. (2017)'s paper is the first attempt to fill this gap by offering a qualitative empirical investigation (interviews) that focus on individual and institutional levels. This research is guided by Hasanefendic et al., 2017 and Shaw and Bruin (2013), who propose that future research must go beyond the institutional environment, and the social innovation phenomenon need to be examined in variety of contexts. Secondary results indicate there is a deficiency of research examining social innovations in the higher education context. Moreover, social innovation needs to be further examined in the three levels: individual, organisational and system, but in a more systemic and integrated manner (Japperson and Meyer, 2011; Hasanefendic et al., 2017). This is essential as the studies examining innovation in higher educations by applying multi-level analysis, focus mainly on the individual level (i.e. Rossano-Rivero, 2018; Aldahdouh, Nokelainen and Korhonen, 2018).

When it comes to the context of this thesis, the literature review shows that the higher education systems of the Eastern-European Developing countries are understudied (Sari, Firat and Karaduman, 2016; Slantcheva-Durst, 2010). Eastern European developing countries have gone through a great transformation since the fall of the socialism in 1989 (Slantcheva-Durst, 2010), which hugely impacted their education systems. These transformations and crisis are in number of aspects: deep geopolitical, economic, and social changes (Tarman and Chigisheva, 2017). At the same time, literature suggests that social

innovation might produce different results in the developing countries compared to the developed ones (Ims and Zsolnai, 2014). Therefore, this thesis aims to gain a deep understanding about both the context and the phenomenon.

Taking on board the above suggestions and views, this study aims to:

1. Provide a diagnosis of the higher education system in Bulgaria summarizing its main challenges, and exploring their relationships. For this purpose, both thematic and cause-effect analysis have been applied.
2. Identify the main drivers and barriers to transformation in the higher education, and classify them in the three levels: individual, organisational and system. In order to achieve this objective, both thematic and multi-level analysis have been applied.
3. Recognise the internal and external factors that influence the transformation of the HE system in Bulgaria through strategic reforms and innovations by using thematic analysis.
4. Creating a theoretical framework illustrating the individual, organisational and system obstacles to the transformation of the HEIs into learning organisations.

5.2 What are the main challenges of the higher education system in Bulgaria?

This section deliberates the results generated by the in-depth interviews reflecting the first main objective of the study to recognise the main systemic issues of the Bulgarian higher education system. Correspondingly, answering the first research question:

Q1: What are the main challenges and issues of the higher education system in Bulgaria?

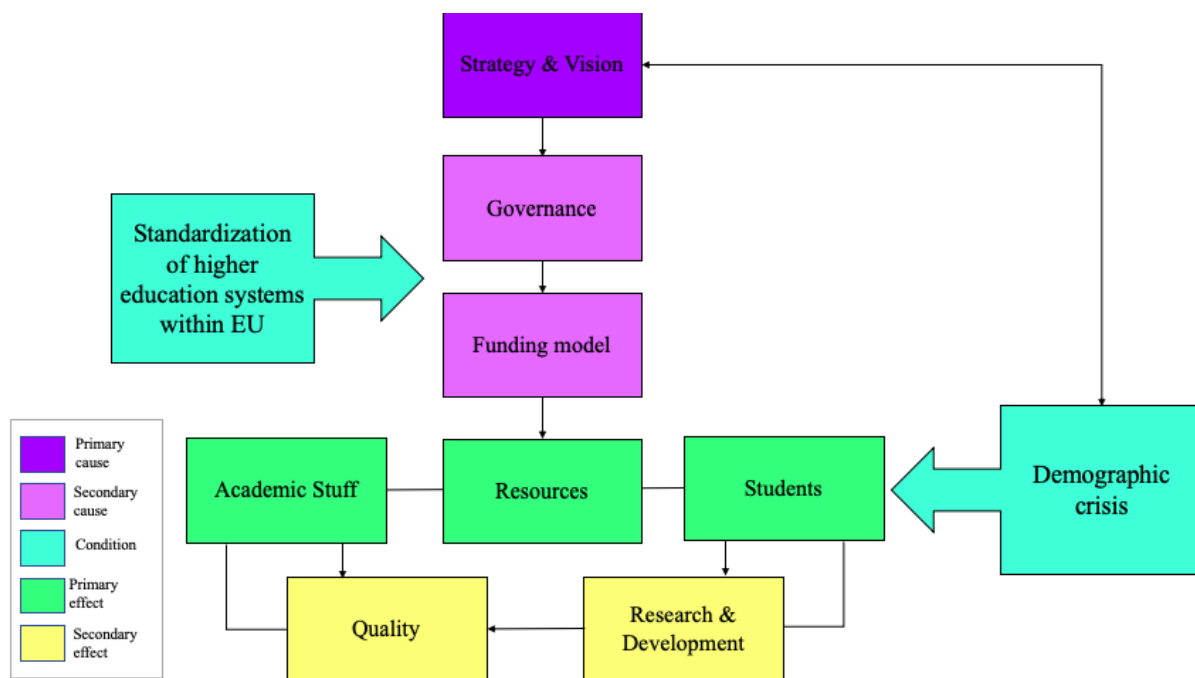


Figure 7. Main challenges of the HE system in Bulgaria and their relationships.

While the communist system collapsed in Central and Eastern Europe about 30 years ago, the former socialist systems that are still going under reformation process, are largely absent from the mainstream ‘transition’ literature (Stephens, Lux and Sunega, 2015). Thus, this study focuses on identifying the main challenges that these countries are facing during their transformations. In this regard, results from the 46 in-depth interviews identified 10 main challenges that are influencing the higher education system: “Strategy and vision”, “Governance”, “Demographic crisis”, “Standardisation of higher education systems within EU”, “Funding model”, “Resources”, “Academic Staff”, “Students”, “Quality” and “Research & Development”. An accurate diagnosis of the problem situation is seen to be the first one of the six step change management model proposed by Beer, Eisenstart and Spector (1990). In other words, implementing system and organisational change is not possible without a diagnosis of their problematic issues (Stouten, Rousseau and De Cremer, 2018).

Thus, the purpose of the first research question was to provide a diagnosis of the main challenges that the higher education system is currently facing. The data findings were structured and classified as: causes, effects and conditions, which were either primary or secondary in nature. Data shows that the lack of strategy and vision is the primary cause that creates a precondition for the emergence of the other challenges of the system. Literature review confirms this funding by suggesting that developing of a vision is the second most important step of any transformational and change process (Stouten, Rousseau and De Cremer, 2018). In fact, the review of the existing literature shows that there are not previous

studies offering so detailed diagnosis of the HE systems. Actually, the report of the EU commission (Strategy for Development of Higher Education in The Republic of Bulgaria for the 2014-2020 period) has already identified the majority of the challenging issues that impact the Bulgarian HE system, however:

1. First, it is not an academic research.
2. Second, it only lists the major challenges without analysing their relationships and interconnections.

This research was guided to apply both thematic and cause-effect analysis as the examination of the transformation of the HE system through organisational learning involves bridging the traditional scientific approaches to management and non-traditional approaches like systems thinking (Wang and Ahmed, 2003). Systems thinking approach reviews the cause-effect relationships between the different variables (Richmond, 1993).

As it can be seen from figure 7.2.1. the current study found that the lack of strategy and vision is a primary cause, which leads to other challenges classified as secondary causes: ‘governance’ and ‘demographic crisis’. This is confirmed by the existing literature, which suggests that transformation of HEIs into learning organisations required commitment of faculty, academics and other system actors. This can be only achieved through motivation, commitment, openness to change and innovative ideas, which cannot occur without a shared vision (Filho, et al., 2018). Thus, it is not surprising that the lack of system vision leads to other fundamental problems such as drop in the quality of education. Yet, literature suggests that quality of education is a global issue resulted from the massification of the HE system around the globe (Altbach, 2013; Altbach, 2012), which can be only handled with an appropriate strategy (Pucciarelli and Kaplan, 2016).

The current study found that the process of standardisation of the Bulgarian higher education system with the EU models strongly impacts its governance and design. The standardisation of the HE system is a condition resulted from Bulgaria’s accession to the European Union, which has political, economic and social significance for the country (Spendzharova, 2003). This result may be explained by the fact that Bulgarian economy is undeveloped, and according to theory developing countries, which are poor and have low income, are experiencing more complex challenges due to educational attainment (Naz and Ahmad, 2018). Moreover, Altbach (2015:2) argue that trends like globalisation of knowledge and increased use of internet, are likely to create problems for academic institutions and systems in poorer or smaller nations, which are now in a situation of competition with the developed ones. The findings observed in this study mirror those of the

previous studies that propose that the increased competition has a negative impact on the developing countries, because of the inequality between them and the developed ones (Aktan, 2007; Sari et al. 2016). The context of this study challenges the general idea that competition is positively associated with innovation and growth (Dobele and Rundle-Theile, 2015), which has proved to be valid in the context of the developed countries.

In this study, governance and funding are found to be secondary causes that resulted from the lack of strategy and vision, and that have been impacted by the standardization of the HE system. This is not surprising, as these results supports previous literature that recognise funding and governance as top global challenges of the higher education systems (i.e. Marshall, 2018; Nagy, Kovats and Nemeth, 2014; Fatkullina et al. 2015). This is not surprising as it is strongly indicated by theory that the massification and uncontrolled expansion of higher education is a cause of many problems such as funding and governance (Akalu, 2016:262; Trow, 2000). Surprisingly, the data shows that the governance and funding of the HE system in Bulgaria do not stimulate competition even at national level, as they promote quantity over quality, and funding criteria is not on performance basis, which is absolutely opposite to the global trends (Hillman, Tandberg and Fryar, 2015).

Furthermore, this thesis supports previous researches that propose that EE developing countries like Bulgaria, the Czech Republic, Cyprus, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia and Russia, have reached a fair level of autonomy (Shaw, 2018; Mok and Neubauer, 2016; Estermann – Nokkala, 2009; Jongbloed and Vossensteyn, 2016; Estermann et al., 2011). However, it this is paradoxical as the results show that the HEIs in Bulgaria fully rely on state funding. It was even more unanticipated to find that although the government is the main financial sponsor of the HEIs, it does not regulate and control how the funding is used and absorbed, which as indicated in the literature review chapter is the initial purpose of the governance (Jongbloed and Vossensteyn, 2016). Thus, the low resource capacity of the HEIs in Bulgaria is a primary effect predestined by both the primary and the secondary cause.

The results illustrating the relationship between the governance and funding and the resource capacity (human, financial, facilities etc.) have not previously been described. At the same time, this study has identified that the ‘demographic crisis’, and its sub-issues like ‘brain drain’, is a condition that significantly impacts the resource capacity of the HEIs. These results contribute to a great deal of the previous work in this field, which examines the effect of brain drain and demographic crisis on the developing countries (Baruch, Altman

and Tung, 2016; Siekierski, Lima and Borini, 2018; Maurseth, 2019; Altbach, 2004; Clark and Altman, 2016; Tung and Lazarova, 2006; Lazarova, 2015; Marinakou, Giousmpasoglou, and Paliktzoglou, 2016; Boncea, 2015; Chen, 2017).

The findings of this study show that all the causes and effects discussed above determine the ‘quality of education’ and ‘research and development’. Therefore, they are classified as secondary effects. According to the literature review research and development activities have numerous contributions to the national and regional economy as they improve the innovation capacity and capabilities of both institutions and nations (Ren, Eisingerich and Tsai, 2015; Kankovskaya, 2016; Demchig, 2015; Bikse, Rivza and Riemere, 2015; Sokol, et al. 2015). This research supports the findings of the previous studies, which argue that research & development activities in the developing countries are weak because of their underdeveloped economies (Erina and Erins, 2015; Dobbins and Knill, 2009; Kruss, McGrath, Petersen and Gastrow, 2015). Scientific research in the developed countries is funded by both the industry and the government, whereas their shares are: 70%-30% (Fleming, Greene, Li, Marx and Yao, 2019). This is very challenging when it comes to the low-income developing countries, as the state cannot afford to provide sufficient funding, and universities are unable to raise money from the business sector (Erina and Erins, 2015).

When it comes to the quality of education, the findings of this study classify it as a secondary cause, and propose that it is a major challenging issue. This is not surprising as the literature review has shown that it is a global major challenge of the higher education (Teeroovengadum, Kamalanabhan and Seebaluck, 2016; Krishnamoorthy, Aishwaryadevi and Bharathi, 2016; Ruben, 2018; Yavuz and Gulmez, 2016). Moreover, this study validates the findings from prior studies, which reasoned the low quality of education with the massification and commercialisation of the HE (Yavuz and Gulmez, 2016; Ritzer, 2011), which according to the theory is a global issue. It also identifies additional factors that negatively impact the quality of education such as funding model and governance, which are common the developing countries (Erina and Erins, 2015; Ruben, 2018; Altbach, 2007; Fatkullina, Morozkina and Suleimanova, 2015).

To sum up, the data findings and analysis of this research question do not only provide a deep insight about the context of the Eastern European developing countries, and Bulgaria in particular. It also contributes to the higher education governance and organisation theory and practice in the following ways:

- By not only identifying and listing the major themes, but also by indicating their relationships.
- Offering a holistic view and diagnosis of a whole HE system, not just of a segment of it.
- Extending the existing knowledge of the context specifics of an EE developing country, which are generally understudied (Fainshmidt, Judge, Aguilera and Smith, 2018).

5.3 What are the barriers and drivers for the implementation of strategic reforms and innovations in the higher education system in Bulgaria?

This section discusses the main results generated by the in-depth interviews reflecting the second objective of this study, which aims to identify the barriers and the drivers for the implementation of strategic reforms and innovations. Correspondingly, answering the second research question:

Q2: What are the barriers and drivers for the implementation of strategic reforms and innovations in the higher education system in Bulgaria?

5.3.1 Barriers for strategic reforms and innovations

The table below summarises the data findings related to the barriers for strategic reforms and innovations by applying a multi-level analysis. The method of analysis of the data finding of the second research questions was guided by the works of the Japperson and Meyer (2011) and Hasanefendic, Birkholz, Horta and Sijde (2017), who identify three levels of analysis of the more complex forms of innovation such as organisational and social: individual, organisational/institutional and system. The findings related to the second research question of this thesis, builds on the Hasanefendic, Birkholz, Horta and Sijde (2017)'s work, which examines the individual level – by integrating the three levels in order to gain a system perspective. This is a significant contribution to the theory of social innovation examined in the context of the higher education, as the studies that examine the topic, focus mainly on the institutional (Marshall, 2010; Zhu, 2015; Porter and Graham, 2016), or the individual levels (Rossano-Rivero, 2018; Aldahdouh, Nokelainen and Korhonen, 2018).

Table 1: Classification of barriers for reforms and innovations

Clusters	Categories of barriers	Related subcategories of barriers
Individual barriers	Lack of shared vision	<ul style="list-style-type: none"> • Not convinced of how reforms and innovations will benefit them • Cultural/context concerns • Unwillingness to be implemented strategic reforms and optimization
	Resistance to change	<ul style="list-style-type: none"> • Strong resistance to change • Lack of strive for development • Conservativeness and rigidity
	Unwillingness to learn	
Organisational barriers	Inequality	<ul style="list-style-type: none"> • Low administrative capacity • Lack of financial resources and sustainable funding • Lack of capacity (both human and financial) to compete with HEIs from the developed countries
	Organisational structure, culture and design	
	Broken links with industry and other external bodies	

System barriers	Lack of big picture orientation	Lack of system vision and national policy	<ul style="list-style-type: none"> • Lack of collaborations with industry • Undeveloped economy that does not need innovations • Big companies have own research centres abroad • Not a priority of the government • Fragmentated approach • Lack of solid fundament • Lack of national administrative capacity
		Social buffers	<ul style="list-style-type: none"> • Government's hands tied • Resistance to changes by variety of stakeholders • Threat of uprising if the number of HEIs is optimized • Strong resistance to change among the academic communities

Table 6. Classification of barriers for reforms and innovations

Data findings presented in the table above, clearly demonstrate that the developing countries have a lower capacity to achieve transformation and modernisation compared to the developed ones, although they have a stronger need to do so. This finding corroborates the ideas of Ims and Zsolnai (2014), who suggested that social innovation might not be as beneficial for the developing countries, as it is for the Western developed ones. As it can be seen from the table, the individual barriers to reforms and innovation are: ‘unwillingness to learn’ and ‘lack of shared vision’, which are both theoretically and data reasoned to refer to the concept ‘resistance to change’. Notwithstanding, change resistance is a subject of many recent studies (i.e. Grama and Todericiu, 2016; Jones and Van de Ven, 2016; Burnes, 2015; Georgalis, Samaratunge, Kimberley and Lu, 2015; Battilana and Casciaro, 2013; Hon, Bloom, and Crant, 2014; Oreg, Bartunek, Lee and Do, 2018). However, this thesis was unable to identify prior studies in the existing literature that examine resistance to organisational change in the higher education context.

The result classifying ‘resistance to change’ as a major aggregate dimension of the barriers to innovation and reforms at individual level, can be explained with the high level of conservativeness that characterize the higher education (Arkady and Tatiana, 2017; Brooks, 2017, Altbach, 2000). This is especially valid for the EE developing countries, as the structure of their HE and administrative systems are strongly hierarchical and bureaucratic (Bodovski, Jeon and Byun, 2017). This is a huge obstacle for their reformation and modernisation, because of their financial and institutional inflexibility (Dlouha, Glavic and Barton, 2017). Furthermore, the HE systems and institutions in the post-socialism developing countries, are mainly non-profit (Altbach, 2007), which is quite challenging for them to redesign in order to meet the needs of the society today (Hasanefendic et. al., 2017). At the same time, it is apparent from the data results that there is a presence of a high-level change resistance in the entire environment, not just in the case of a single institution, which is not uncommon for the higher education context (Griffin and Moorhead, 2014).

Literature reasons it with the fact that change resistance is a common reaction as it involves difficult contexts and situation for the employees (Grama and Todericiu, 2016), which results in a high level of discomfort for them (Davis and Jacobsen, 2004). Employee resistance is one of the key impacting factors when it comes to failed organisational change

and reform (Jing and Avery, 2008; Ford and Ford, 2010; Ford, Ford and D'Amelio, 2008). Employee' reaction to organisational changes is a psychological phenomenon at individual level that is not fully explored yet (Senior and Swailes, 2010). Existing literature suggests that the role of the employees is significant for the process of transformation and change, as they are either 'change implementers' or 'change recipients' (Georgalis, Samaratunge and Kimberly, 2015:90). Moreover, the success of the implementation of innovation depends heavily on the change agents in the higher education institutions, which might not be easily recognised by the top management (Nieth, 2019; Fonseca, 2019; Radinger-Peer, 2019). Exploring the resistance to change at individual level, the researcher was somehow led by the assumption that the older generations are more likely to resist changes. Surprisingly, no significant were found in the behaviour of individuals on age basis, which builds on the Kunze, Boehm and Bruch (2013)'s work, who found no correlation between age and change resistance.

When it comes to organisational/institutional barriers, data results identified that these are 'inequality between the HEIs in the developed and developing countries' and the 'broken links with the industry'. Theoretically, these barriers refer to organisational structure, culture and design. In fact, the inequality between universities in the developed and developing countries does not due only in the mismatch between their capacity and resources. The lack of links between HEIs and the business is a component of entrepreneur universities in the developed countries. According to Nieth (2019) though long-term change at both regional and national level fully depends on these coalitions, it is often observed that these three parties (government, industry and higher education) are prioritising their own short-term interests (Sotarauta, 2004). This is not surprising, as the fundamental forms of innovation are very costly, risky and path-dependant (Zanello, Fu, Mohnen and Vantresca, 2016:884). Therefore, pioneering innovations, which are linked with specific forms of university science, research capacity, and among a small number of firms, are concentrated in few rich developed countries (Zanello, Fu, Mohnen and Vantresca, 2016:884).

The results of this thesis, related to the inequality, support the findings of Ims and Zsolnai (2014) and Altbach (2013), who propose that it is almost impossible the gap between the developed and developing countries to be overcome. However, Altbach (2013:317) argues that although it may not be possible each country to have a research university, many middle-income developing countries can develop universities with research capacity to join

in the world knowledge system. Low-income countries can enhance their research capacity by forming regional academic alliances to enhance their research capabilities in certain fields, in order to be increase their chance to participate in global science. Still, low-income countries cannot compete to leading research universities like Oxford and Harvard, but can support at least one university of high academic quality, which can participate in the global knowledge scene to develop key fields relevant to the national development (Altbach, 2013:317). Moreover, the findings of this study further support the idea of Alpaydin (2019) and Shaw and Bruin (2013) that the context and the geography of research and development play a significant role for the generation and successful implementation of innovations.

Yet, according to theory - innovation is crucial for the HEIs to increase their competitive capacity, which will reduce the gap between HEIs (Herrera, 2015; Namada, 2018; Salunke, Weerawardena and McColl-Kennedy, 2019). Furthermore, it has the potential to reduce the gap between the economic development of the developed and developing countries as described by previous studies, which argue that higher education institutions are knowledge generators and economy driver of every nation (Bejinaru, 2017; Benneworth and Fitjar, 2019; Sanchez-Barrioluengo, 2014).

The system barriers as identified by this study are the ‘lack of shared vision’ and the ‘social buffers’, which are theoretically reasoned with the lack of big picture orientation. It is not surprising that the lack of shared vision and strategy is seen as a major system challenge as the data results indicate strong fragmentation and lack of vision and common strategy for national development (Haque, TitiAmayah and Liu, 2016). However, categorizing ‘social buffers’ also as a major system challenge was an unanticipated finding that emerged from the data. In fact, social buffers refer to the interconnectivity between the different systems at a national context, which suggests that any significant reform like the optimisation of the higher education system will affect other systems in the state. The two challenges are correlated and indicate the lack of big picture orientation. As it was already discussed in the previous chapters, the transformation of the higher education systems into modern higher education system is an example of social innovation (Johannessen, 2013; Benneworth and Cunha, 2015). Yet, it is not clear what should modernisation of the higher education involve. The findings of this thesis are unable to answer this question.

Findings from previous studies are also contradicting, as according to some studies modernisation of higher education involves marketisation and privatisation (Middleton, 2000), which transforms HEIs from collaborative to competitive institutions (Marginson, 2011). However, others consider that such modernisation has a negative impact on the higher education systems as proposed by Bates and Godon (2017:24). They warn that the idea of ‘modernisation’ of the HE systems, involves both ‘aspiration to progress’ and a ‘danger of a narrow view of progress’, which is based on blindly denying tradition in favour to modernisation (Bates and Godon, 2017:24). Furthermore, as proposed by Rolfe (2013:9) the terms ‘modern’ and ‘entrepreneurial’ are often used as units of measurement, but at the same time these terms are not questioned as something that also need to be measured. The data findings of this study, supports the views of Bates and Godon (2017) and Rolfe (2013) by suggesting that innovations and reforms should not end with themselves. Moreover, data findings also question if innovations and reforms are always beneficial only because they are ‘new’ and ‘modern’. For example, distance learning is considered as innovative method (Tang, Coret, Qureshi, Barron, Ayala and Law, 2018), but as the data suggests it is associated with low quality of education.

5.3.2 Drivers for strategic reforms and innovations

The table below illustrates the drivers for strategic reforms and innovations at the three levels: individual, institutional/organisational and system. This section will be briefly discussed as the majority of the drivers are opposite to the barriers that have been already examined. At individual level, the analysis shows that ‘openness for change’ and ‘strive for personal development’ are the main drivers of innovation and learning, which builds on Lin and Sanders (2017)’s work. Furthermore, this thesis identifies that the willingness of individuals to learn, change and develop, having hand in the process of change combined with the competitiveness and motivational stimuli are the individual factors that enhance reforms and innovations. These findings support the previous findings of Hasanefendic et. al., (2017), who also found that academics (individuals) have to be engaged in promoting change in higher education, because of their social networks and influence.

At organisational level, data results of this thesis suggest that the drivers for innovations and reforms are related to changes in the structure, culture and design of the HEIs. To elaborate, data proposes that HEIs need to transform into both ‘learning

organisations' and 'business-oriented organisations' as these organisational models are associated with collaboration, enterprising and constant change and update. This is also indicated in the literature by Albach (2015:2), who suggest that that we are in the 'midst of a true revolution in higher education', which involves profound changes of our primary understanding of the role of the higher education institutions. In addition, Sitar and Skerlavaj (2018) stress on the importance of collaborations and proactiveness of HEIs. These findings also support previous literature on organisational learning according to which HE institutions will benefit highly if they become learning organisations (Jorgensen, 2018).

A possible explanation of the result suggesting that HEIs need to transform into both learning organisations and business-oriented organisations, is with the need of a more balanced approaches. Perhaps, if HEIs transform into business-oriented organisations only, this will increase the level of commercialisation and massification of the system. Moreover, the transformation of the HEIs into learning organisations can help them to overcome the challenges associated with commercialisation and massification of the system (Pucciarelli and Kaplan, 2016). Einsberg, Ignatjeva, and Ilisko (2018) claim also that the adaptation of organisational learning culture has the capacity to deal with the economic, political and social challenges. Yet, they suggest that adoption of such culture is very challenging, as it is not a government directive. It depends only on the individual and organisational motivation and willingness to learn and develop (Einsberg, Ignatjeva, and Ilisko, 2018:60).

Last but not least, re-design of the system and creation of strategy and vision and national policy are proved by the data findings and analysis to be the main drivers of reforms and innovation at system level. Theoretically, these two drivers refer to 'vision', which is not surprising as 'shared vision' is one of the components of organisational learning (Senge, 2014). Learning organisations are not capable of only continues improvement, but also of major change and transformation (Blackman and Henderson, 2005). It is not surprising that the data findings identify vision and its sub-themes 're-design of the system' and 'creating of strategy and national policy' to be the main drivers of transformation at system level. Major changes and transformations require a vision to determine the direction for development (Santa and Nurcan, 2016). Findings of this thesis empirically support those of Santa and Nurcan (2016), which are based solely on literature research.

Table 2: Classification of drivers for reforms and innovations

Clusters		Categories of drivers	Related Sub-categories of drivers
Individual drivers	Personal initiative	Strive for personal development	<ul style="list-style-type: none"> • Orientation toward the process of learning than just the knowledge itself • Willingness to learn • Motivation • Competitiveness
		Openness for change	<ul style="list-style-type: none"> • Having hand in the process of change • Shared vision
Organisational drivers	Change of culture and structure	Transform into business organisations	<ul style="list-style-type: none"> • Seeking alternative sources of funding • Enterprising • Enhance graduate employability
		Transform into learning organisations	<ul style="list-style-type: none"> • External collaborations • Interactions • Constant change and update
System drivers	Vision	Re-design of the system	<ul style="list-style-type: none"> • Building of solid foundation • Implementing strategic reforms • Optimizing the system
		Create a strategy and vision, and national policy	<ul style="list-style-type: none"> • Gradual changes • Big picture orientation • Education to be a national priority

Table 7. Classification of drivers for reforms and innovations

The findings and analysis corresponding to this research question are theoretically driven by the concepts of social innovation and organisational learning, and contextually by the higher education systems of the EE developing countries. In addition, this research study examines more complex forms of innovation (social and organisational), it does not focus on product or service innovations. This research question studies the barriers and drivers for the implementation of strategic reforms and innovations, because of two reasons: a) Innovations and strategic reforms are connected to organisational and system change, sustainability and transformation (Howard-Grenville et al. 2017); b) developing countries have urgent need to implement strategic reforms (Fatkullina et. al., 2015). This research contributes to the existing theories of organisational learning and social innovation by not only extending the existing knowledge in these fields, but also by examining them together. This method is guided by the literature, which suggests that these two theoretical bodies are overlapping, and are associated with more advanced forms of innovation that impacted by both internal and external factors (Rasiah, 2017).

5.4 What are the main internal and external factors that influence strategic reforms and innovations?

This section attempts to critically answer the third research question posed by this study based on the data results from the 46 in-depth interviews:

RQ3: What are the main internal and external factors that influence the transformation of the HE system in Bulgaria through strategic innovations and reforms?

The graph below summarises the data findings related to the third research question of this thesis. This research question was theoretically guided by previous studies, which identified that organisational learning and social innovation are influenced by both internal and external factors (Rasiah, 2017), which shapes the context that they are examined (Shaw and Bruin, 2013).

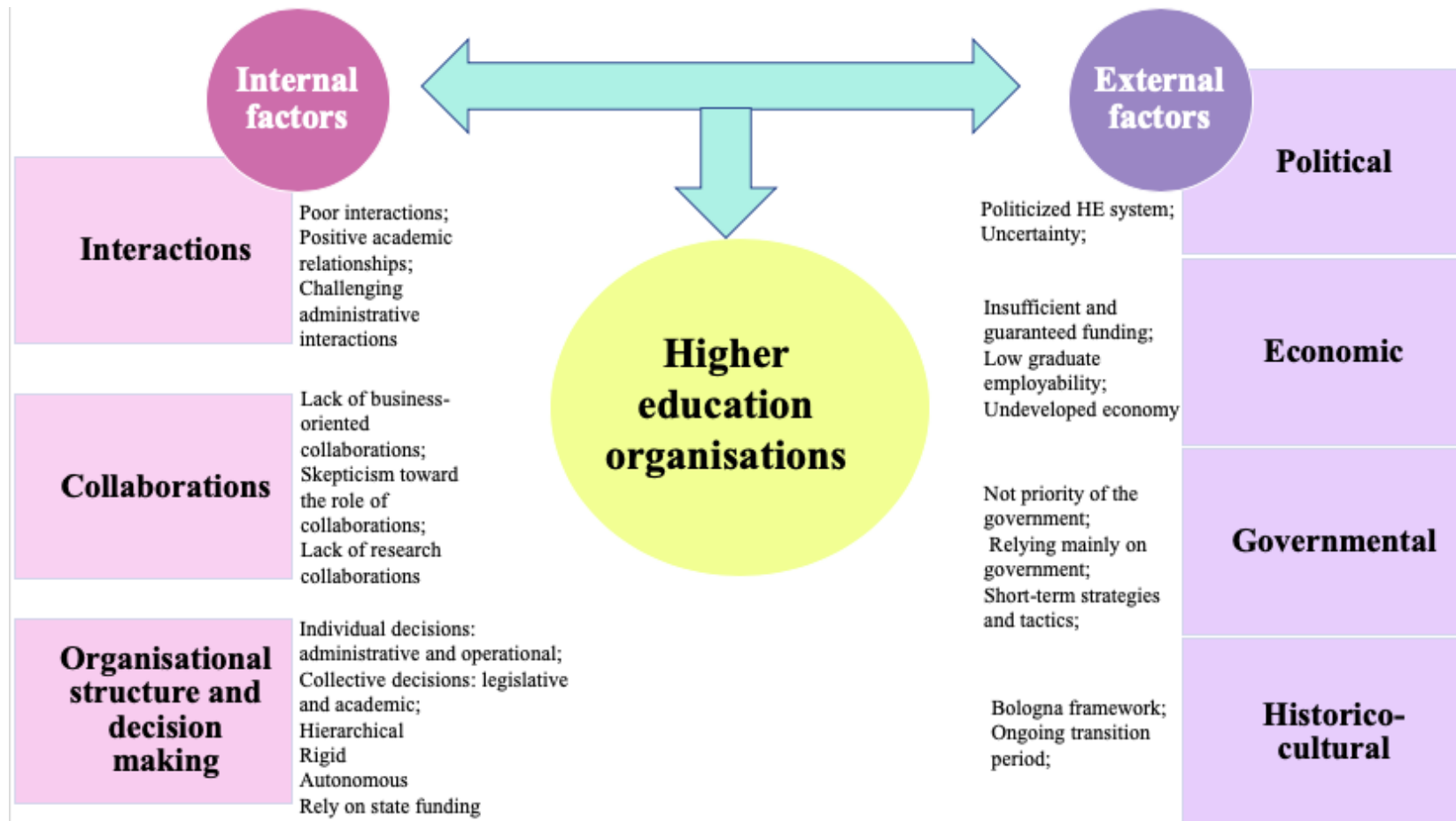


Figure 8. The internal and external factors influencing strategic reforms and innovations.

5.4.1 Internal factors

5.4.1.1 Collaborations

This thesis was guided by the existing literature, which suggests that there is a strong relationship between collaborations and innovations (i.e. Moon, Mariadoss and Johnson, 2017; Hrabowski III, 2014). As suggested by Draghici et al. (2015) collaborations have many benefits to offer such as: reducing costs, applying multidisciplinary approach, and expertise in a particular field. Moreover, collaborations between universities and industry has proven to enhance the business competitiveness of both sides that are participating in the collaboration (Ivascu, Cirjaliu and Draghici, 2016). The results of this thesis show that there is a lack of collaborations in the HEIs, and especially business or research-oriented collaborations, which partly explains the lack of strategic reforms and innovations. This also accords with the findings of Nicolas and Harrison (2018), which propose that the successful implementation of reforms requires institutional and contextual prepositions. However, this study does not directly confirm that collaborations are crucial for the implementation of strategic reforms and innovations, as the results of the in-depth interviews reveal a high-level of scepticism about the role of collaboration. This contradicts to the prior studies, which give a high importance to collaborations and their beneficial role for strategic innovations (Moon, Mariadoss and Johnson, 2017; Hrabowski III, 2014; Draghici et al., 2015; Ivascu, Cirjaliu and Draghici, 2016; Huang and Chen, 2017).

This study also identified that wide collaborations are more likely to occur in some areas than others. Therefore, it is not surprising that the representatives of the applied sciences (i.e. business, IT, technological and engineer) are recognising importance of collaborations. High-tech and technologies in general are fast emerging sectors in the past decades, that is why a sufficient amount of previous studies examine collaborations and innovations within these sectors (i.e. Lee, Nam, Lee and Son, 2016; Martin-de Castro, 2015; Keeble, 2017; Bustinza, Gomez, Vendrell-Herrero & Baines, 2019). Yet, findings of this study show that universities and the local economy strongly depends on the public sector. Yet, there are positive examples of business-oriented collaboration. The interpretation of the generated data suggests that although the economic environment and the current design of both the higher education system and universities do not stimulate such collaborations, such collaborations are possible if the individuals take personal initiative. Thus, data outlines three aggregate dimensions: national, institutional and individual. Results clearly

demonstrate that the role of the personal initiative is crucial, as the national context is shared. However, the situation at institutional level is contradicting as on one hand they can also depend on the personal initiative of the top management.

5.4.1.2 Interactions

Interactions are the second internal factor identified by this thesis. This is not surprising, as the quality of interactions and collaborations between individuals and institutions have proven to enhance the innovation capacity (Van Waarden, 2001; Bariakova, 2019). Furthermore, literature review suggests also that innovation is uncertain and social process, which fully depends on the interactions between different groups of individuals (Gluckler and Bathelt, 2017). Moreover, interactions between system actors are considered to be a key determinant of the national innovation capability and productivity (Arulrajah and Senthilnathan, 2016). Data supports Santos (2016)'s work that sees the individualistic nature of the academics as a major obstacle for interactions, and respectively for their job performance. Findings also indicate a strong fragmentation of the system, which requires change in organisational design that promotes interactions and collaborations between actors, departments and institutions. Moreover, individual and group interactions are main conditions of organisational learning (Namada, 2018). This thesis also identifies that there are two aspects of learning: academic and administrative. Administrative interactions are seen as more problematic, which can be explained with the low administrative capacity in the public sector of the EE developing countries (Dlouha, Glavic and Barton, 2017).

5.4.1.3 Organisational structure and decision-making

The researcher was inspired by the existing literature, which proposes that the design of the organisational structure and culture is a determining factor for the promotion of innovation and adaptiveness (Ismail, 2016; Taha, Sirkova and Ferencova, 2016). However, data findings indicate that there is no relationship between the management style and innovation in the case of the Bulgarian HE system. These results are consistent with findings of Sethibe (2018), which suggest that there is no relationship between the transformational and democratic and liberal style and innovation. This is evident from the information that interview participants shared regarding the management style in their institutions. In the context of this study, this can be reasoned by the fact that universities in Bulgaria are mainly public. Public institutions are dependant not only from the leadership style, but also from the political environment and the ability to obtain sufficient resources (Ricard, Klijn, Lewis and

Ysa, 2016). In general literature review suggests leaders have a crucial role for the implementation of innovation as they initiate change through strategic actions, re-design the organisational structure and routines, and re-mobilised resources in order to create more change accepting and adoptive environment (Lewis, Ricard and Klijn, 2018).

Surprisingly, although the decision making of the HEIs in Bulgaria is regulated by law, it was a common case scenario that the function of the collective bodies (i.e. academic councils) in only nominal. In reality, these collective bodies do not have real responsibilities, role, duties, and authorities. Decisions are made individually, which is a possible explanation of why the role of the top university management is considered to be the major one for both the success and the failure of the organisations. However, leaders need a high degree of freedom (Khan et. al., 2015), which is not the case of the public universities in Bulgaria. They are not fully autonomous, and in contrast to the private ones, not everything depends on the top management. Furthermore, as suggested by the data results, private universities are way more advanced than public ones when it comes to flexibility, change and innovations. Yet, contrary to the expectations, this study does not find a significant difference between public and private universities in their research and development activities, and implementation of innovations.

5.4.2 External factors

5.4.2.1 Economic

This research suggests that the economic environment is considered as the major external factor that influences not only the implementation of strategic reforms and innovation, but also the whole higher education system. In addition, data results illustrate that the national economic environment influences the higher education institutions in two ways: 1. referring to the graduate employability; and 2. referring to the funding of the higher education system.

The existing theory explains that the lack of enough collaborative, research and innovation related activities are the main precondition of the graduate unemployment (Ishengoma and Vaaland, 2016). Moreover, Bariakova (2019) claims that the developed countries within EU that are embedding social innovation (i.e. higher education reforms and innovations) have much higher student employability records (Maxwell, Irwin and Bennett, 2015). Yet, there must be acknowledged that the economic contexts of the developed and the developing countries in the European Union are entirely different. For example, a UK research suggests that 96% of the full-time graduates from innovation-oriented university

were employed within six months after graduation (HESA, 2015). Bariakova (2019), explains it with the embedding of innovation into every aspect of the student experience.

This thesis suggests that the undeveloped regional economic environment significantly impacts the HEIs, because it constrains the students' ability to raise money from the private sector during their studies (Estermann and Pruvot, 2011; Nagy et al. 2014; Erina and Erins, 2015). The situation of the private universities is even more challenging, which do not receive state funding. Consequently, student candidates have to pay much higher tuition fees. Although, the developing countries are undoubtedly in a less advanced position compared to the developed ones, still there are strategies that can be implied to improve the existing situation (Altbach, 2013). As it was indicated above, there are plenty examples in the literature when the universities are improving the regional economy and respectively the national one. However, this study suggests also that HEIs in Bulgaria are not taking any measurements to handle the challenging economic situation, because of their mental models. These findings help us to understand the role of the mental models, which are one of the five disciplines of organisational learning. Mental models is one of the elements of the organisational context, which affects an organisation's ability to learn, and respectively to grow and develop (Westbrock, Muehlfeld and Weitzel, 2019).

5.4.2.2 Political

Results of this study reveal that there are two ways of impact: the first one, referring to the direct or indirect interference of politics; the second, refers to the political uncertainty which due to the frequent changes of governments. The first aspect of political influence is associated with the post-socialist countries which higher education systems are characterised with a strong politicisation of both education and science (Osipian, 2012). Furthermore, such politicisation of the education and science is also observed in China (Gong and Dobinson, 2019), so this finding goes not only beyond the Bulgarian context but even beyond the post-socialist countries in Europe. For instance, the literature search shows that the present situation observed in the higher education system in Bulgaria is similar to this in Russia, where the politicisation of the system is now manifested into an organised anarchy with unclear rules and regulations, and strongly emphasised bureaucracy (Osipian, 2012).

The data results can also be interpreted that the previous politicisation of the system influenced the culture, the mental models and practices of the actors in the higher education system, which can now be seen as corruption or conflict of interest. Although, that thirty years have passed, the effects of the previous governance of the HE system are still palpable.

This can explain the high level of resistance and scepticism toward the transformation of the HE system, as countries of Central and Eastern Europe (CEE) like Bulgaria are now challenged to operate in the global economic context after decades of isolation (Soulsby and Clark, 2007). Moreover, their structures, cultures and organisations are based on very different social logic than this of the Western countries, which additionally worsen their ability to adapt to the uncertain and dynamic economic and institutional circumstances (Soulsby and Clark, 2007).

Findings from the interviews indicate also that the political uncertainty is another aspect of the political environment that constrains the transformation of the HEIs through implementations of reforms and innovations. However, this result has not been previously described. In contrast, the existing literature that examine how the political instability within a country affect the prospects for reforms and innovations, suggest that the governance reforms in the higher education sector are more likely to occur if there is a greater political instability (McLendon, Deaton and Hearn, 2007). Yet, should be considered that the higher education system in countries like Bulgaria, which contexts are characterised with political instability, face two dimensions of uncertainty: a) national; and b) global. The global uncertainty is related to common issue that HEIs around the globe are experiencing: to transform into profit-oriented organisation, which a prioritising public good (Altbach, Reisberg and Rumbley, 2009; Council of the European Union, 2014). Moreover, this rather contradictory results between the primary findings and the review of the existing literature may be explained by the difference in the cultural, economic and social logics between EE developing and developed countries (Soulsby and Clark, 2007).

5.4.2.3 Governmental

This study proposes that there are three aspects of the governmental factor that impacts the HE system and its transformation: 1. Education is not a priority of the state; 2. HEIs fully depend on the government; 3. Short-term orientation of the governments in the country. There is a feeling that the government is proposing laws and is making decisions without being much concerned about their outcome and effect. This finding corroborates the idea of Senge (1990) that this is a common decision-making problem of top management. Senge (1990:25) explains this phenomenon with the fact that decision-makers rarely experience the consequences of their decisions, as in the most cases their effect is a long-term one. It was already discussed earlier in this chapter that politicians and top managers focus only on tactics, and do not asses further the norms and regulations that they proposed. Moreover, results reveal that the role of the government is generally a very significant one, as

governments worldwide are now challenged to monitor a complex ecosystem (Nagy et. al. 2014). However, this is not the case of Bulgarian government, which is perceived to play a rather passive role. Findings of this study also suggest that the government is not only unmotivated to implement long-term reforms and innovations, but it does not also create any motivational stimuli and mechanisms for the system actors to change and develop.

A conflict in the views of the interviewees regarding the role of the government has emerged from the data. The role of the government is seen as either regulatory or central. A possible explanation for the difference in the views might indicate a deeper conflict of political and philosophical views. As the socialist regime is characterised with centralised governance (Cole, 2010), while the capitalistic philosophy promotes that the role of the government should be only regulative (Dahl, 2017). Moreover, this study shows a polarity in the view of the participants who believe that either the transformation of the HE system has to be initiated and led by the government, or it should start from the HEIs. Theory supports the second view as HEIs are seen to have a key role in transforming societies (Ramos et al. 2015). This finding is not surprising as in the developed economies, HEIs are initiative, while the government only regulates and stimulates them (Nagy et al. 2014). Last but not least, data results suggest that the low administrative capacity is not the only reason for the government not to regulate the system.

5.4.2.4 Cultural and historic background

This factor includes two important periods and events for the Bulgarian HE system – the transition period and the alignment of the Bologna framework. Gaining a good understanding about the context of any problem is extremely important for getting a holistic view (Shaw and Bruin, 2013). The transition period is seen as a period of entering from one crisis to another. The higher education system has been a subject of great transformation (Andrei, Lefter, Oancea and Stancu, 2010). In fact, the transition period hasn't ended yet, because of the battle between the supporters of the two philosophies and models, which caused the HE system to get stuck between the old system model and the new global trends and influences. Data findings show a polarisation of the system actors as a half of them want the HE system to be modernised, while the others prefer the old design of the system and react negatively to the reforms. This conflict causes a paradox in the HE systems of the post-socialist countries as although they are autonomous now, the government is still their only fund provider and decision maker (Silova and Eklof, 2012). Examining the battle between the different philosophies (the socialist and the capitalistic one) from organisational learning

perspective indicates that there is not a common shared vision for the development of the higher education system in Bulgaria, which is a crucial component of learning organisation (Liu, 2018).

Another crisis associated with the transition period is related to the uncontrolled massification of the HE system, and the demographic crisis.

The existing literature suggests that the transition period is actually the movement from centralised economy to market economy. The HE systems of the EE countries were previously designed to serve the needs of the centralised economy (Silova and Eklof, 2012). The number of the HEIs has been massively increased since the fall of the socialist period without much consideration about the demographic crisis and the national market needs (Andrei, Lefter, Oancea and Stancu, 2010; Altbach, Reisberg and Rumbley, 2019; Albatch, 2015). At the same time, the whole public sector has become less attractive for the employees as the salaries that it offers are much lower compared to the private sector. Therefore, the transition period is perceived to contribute to the process of brain drain as the majority of the high-quality cadres moved either in the private sector or abroad, which decreased dramatically the administrative capacity of both the government and the HEIs (Boncea, 2015).

The examination of the alignment of the Bologna framework as a significant event was motivated by the prior studies, which describe it as significantly important (Vögtle, 2019, Slatcheva- Durst, 2010; Olsen & Maassen, 2007; Vaira, 2004; Krucken, Kosmutzky and Torca, 2007). The results of this study indicate that the Bologna framework has had a negative impact on the education quality, but in contrast to the literature findings it is not given much importance. Bologna framework is perceived as challenging, because it promotes the standardisation of the HE systems (Krucken, Kosmutzky and Torca, 2007), which does not appeal to these system actors who support the traditional education. In fact, the literature suggests that the Bologna framework gives enough freedom to the countries that signed to it to re-design and reform their HE system in accordance to their national contexts (Vögtle, 2019:21).

Perhaps, the negative opinion of the interview participants about the role of the Bologna framework, are based on the way it is applied rather than the framework itself. Theory also explains that the idea of standardisation of the higher education systems around the world indorsed by the Bologna framework, is similar to this of globalisation which is *'near to utopian higher education system of a borderless Europe and beyond, with common values and shared fundamental vision and philosophy'* (Viðarsdóttir 2018: 387). Similar idea was promoted by the findings of this research, which supports the work of Ims and Zsolnai (2014)

suggesting that what works well in the developed countries, does not always work well in the developing. This is due to their entirely different contexts. However, this topic was slightly covered, caution must be applied, as the findings must to be sufficient enough.

5.5 Theoretical framework: individual, organisational and system obstacles for the transformation of the HEIs into Learning Organisations

Exploring the transformation of the HEIs into learning organisation (OL), three levels of obstacles have been identified: individual, institutional and governmental. In addition, the data findings examined from organisational learning perspective show that these obstacles are related the elements of the learning organisation (LO): mental models, personal mastery, teamwork, shared vision and systems thinking. The elements of the learning organisation that refer to the data findings are also classified as individual, institutional or system. This theoretical framework has been developed considering both the findings from the empirical data and the literature review.

The figure below summarises the findings of this research, which are examined from OL perspective.

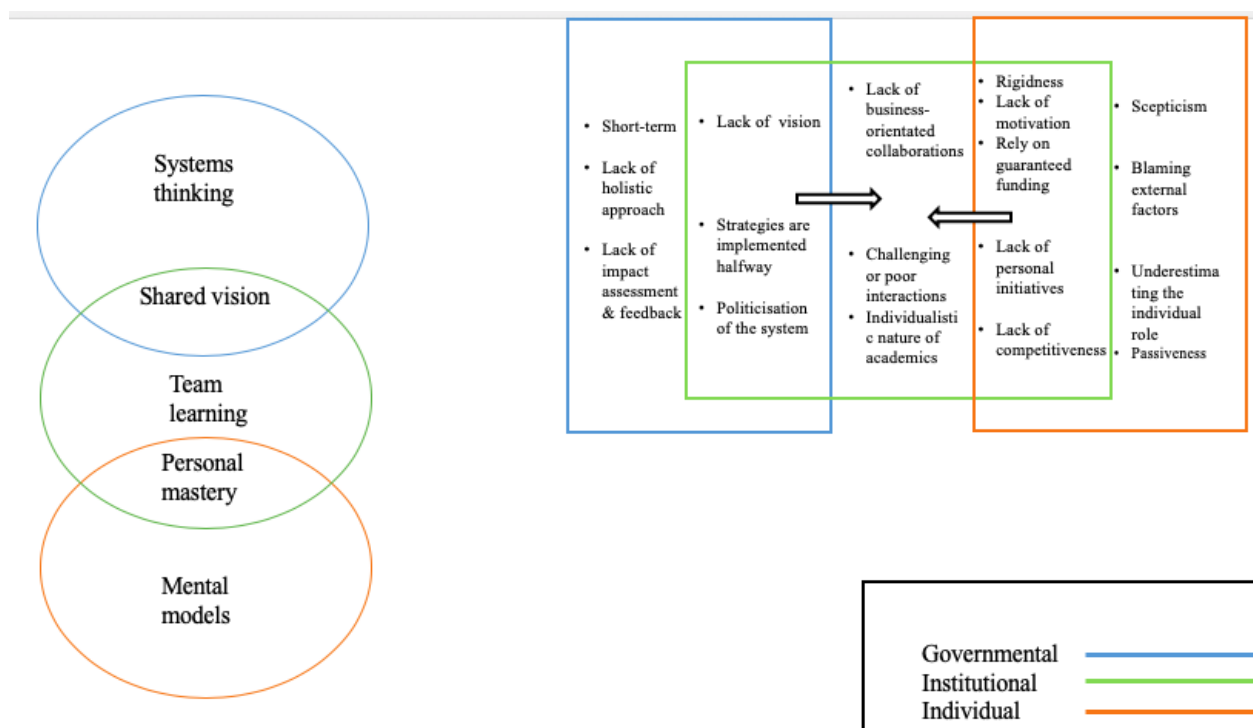


Figure 9. Theoretical framework: individual, institutional and governmental obstacles for the transformation of the HEIs into Learning Organisations.

- ***Mental models***

This research found that ‘scepticism’, ‘blaming external factors’ and ‘underestimating of the individual role’ are individual obstacles for the implementation of OL, which are associated with mental models. Mental models are one of the components of the Learning organisation and are seen as ‘deeply ingrained assumptions, generalisation, or even picture or images that influence how we understand the world and how we are taking actions’ (Senge, 1990:8). It is evident from the data findings that interview participants see the external factors (i.e. economic, political, governmental, globalisation etc.) as insurmountable obstacles for the transformation of the HE system and institutions. Interview participants demonstrated a high level of scepticism about the successful implementations of reforms and innovation. Moreover, data findings demonstrate that they believe that low-income developing countries cannot afford to have good and modernised higher education systems. Last but not least, participants underestimate their role as individuals and assume that the initiatives should always come from others (i.e. government, universities, industry or students). This explains their passiveness, as the mental models have the capacity to influence the judgement of the individuals and respectively their actions (Rook, 2013).

- ***Personal Mastery***

Personal mastery is the next component of the Senge’s learning organisation model. It refers to the ability of both individuals and institutions to create the results that they truly desire (Senge: 1990b). Moreover, personal mastery is helping organisations to design a model of organisational behaviour, which inspires all the employees to develop themselves in a way that can achieve the results and the objective that they want (Senge, et al., 1994). The findings of the study show that the personal mastery refer to both individual and organisational level. In the case of this study, both the HEIs and the system actors suffer from lack of motivation and competitiveness, lack of personal initiative, and strongly emphasised rigidity. Participants reasoned it with the current system design, which is not based on motivation or competition related stimuli. In fact, the results show that the majority of individuals and the public HEIs fully rely on the state funding seeing it as the only fund-provider. Moreover, the scientific research activity is weak because of the insufficient funding provided by the state for science and research, but at the same time both individuals and institutions do not take personal initiative to attract alternative funding (i.e. international grants as suggested by the participants of Interview 2). As it was already discussed, relying only on the state funding is one of the main characteristics of the former system design (Smolentseva, 2017). While, proactiveness and competition are characteristics of the modern HE systems (Tomlinson, 2017). The refusal to lay the old system models and design off is explained with a high level

of rigidity and closeness to change. It is not surprising that the implementation of innovations is obstructed, as personal mastery is a key component of the learning organisation (Fillion, Koffi and Ekionea, 2015). Organisational learning is known for enhancing the organisational performance through innovation (Garcia-Morales, Llorens-Montes and Verdu-Jover, 2007).

- **Team learning**

The following themes: ‘lack of business-oriented collaborations’, ‘challenging or poor interactions’ and ‘individualistic nature of the academic staff’ that emerge from the data findings are classified as institutional/organisational obstacles. They are associated with the next component of the learning organisation – team learning. Theory suggests that team learning is all about building team intelligence that goes beyond this of all its members (Fillion, Koffi and Ekionea, 2015). The majority of the interview participants suggested that they have poor or challenging interactions with their colleagues. In the case of this study, the term poor interactions refer to the lack of interactions. System actors might have positive relations with their colleagues and their interactions can still be poor if they are working individually. Although, there were participants who shared that they have positive interactions – they illustrate the exception not the rule. Moreover, while the presence of strong collaboration and interactions does not mean that team learning automatically occurs. However, team learning cannot occur if there are no interactions and collaborations between individuals as team members learn from each other only if they interact (Namada, 2018).

Shared vision

Shared vision is the next component of the learning organisation, which refers to ‘building a sense of commitment in a group, by designing shared images of the future that we desire to create’ (Senge, 2014:6). Moreover, according to Senge (2014:6) shared vision involves also adopting common guiding practices and principles, which help the individuals to reach their objectives. The themes associated with the shared vision that emerged from the data: ‘lack of vision’, ‘strategies are implemented halfway’ and ‘politicisation of the system’ - refer to both institutional and governmental levels. The interview participants explained that there is a power battle going between the supporters of both the old system design and those who want the HE system to be modernised. This polarisation leads to the halfway implementation of strategies and reforms. Moreover, a fair number of interview participants shared that the HE system is still somehow politicised, which affect both the norms and regulations of the system, as well as the distribution of money. In other word, universities which top management has close connections with the government leading figures will receive

a higher amount of funding than these that do not. Data analysis show that both the HEIs and the government have no clear idea about what they want to achieve by the implementation of innovations and reforms. Shared vision connects people by setting a common aspiration in them and creates a sense of community (Fillion, Koffi and Ekionea, 2015).

- ***Systems thinking***

Systems thinking is the fifth discipline of the learning organisation that integrates the previous four (Fillion, Koffi and Ekionea, 2015). It refers to the shift of mind from seeing parts to seeing wholes (Senge, 2014). This study identifies that the last component of the learning organisation refers to the governmental level. The obstacles that emerged from the data analysis are ‘short-term orientation’, ‘lack of holistic approach’ and ‘lack of impact assessment and feedback’. Results suggest that governments are only interested in short-term strategies and tactics that will bring fast results. Senge (1990) argues that focusing on low effect changes is a common mistake, which can improve the existing situation for a short period of time, but worse it at long term. Still, all the governments in Bulgaria aim to implement reforms and innovations, without being clear about what they want to achieve. In fact, interview participants shared that the governments have never assess the impact of any of the laws, norms and regulations that they propose. This indicates the lack of systems thinking approach which operates as a series of continuous feedback loops (Arnold and Wade, 2015). Furthermore, the government’s approach is fragmented, and the system actors do not have a sense of wholeness and belongingness. This can be explained with the focus on the symptoms rather than the causes, and the inability to see the interrelations instead of linear cause/effect chains in the process of change (Fillion, Koffi and Ekionea, 2015).

5.6 Summary

This chapter aimed to address the three research questions posed by the study. First, an empirically based diagnosis of the Bulgarian HE system was presented, which illustrates the main issues that the system is facing. Second, this chapter identified the main drivers and blockages of the strategic reforms and innovations. Third, the main internal and external factors that impact the higher education system were also described and discussed.

The section below summarises the key findings and points arising from this chapter related to: 1.the main issues of the HE system; 2. the drivers and barriers of reforms and

innovations; the internal and external factors influencing the implementation of reforms and innovation.

- *What are the main challenges of the higher education system in Bulgaria?*
- 1) This study offers a diagnosis of the main problems of HE system, and classify them as cause, effect or condition, as organisational and system transformation cannot occur without a diagnosis of their problematic issues (Stouten and Rousseau, 2018). Interview participants identified ten major issues of the HE system in Bulgaria: “Strategy and vision”, “Governance”, “Demographic crisis”, “Standardisation of higher education systems within EU”, “Funding model”, “Resources”, “Academic Staff”, “Students”, “Quality” and “Research & Development”.
 - 2) The data findings and analysis identify that ‘the lack of strategy and vision’ is the primary cause, which leads to the secondary causes: ‘governance’ and ‘funding model’ and impacts the condition of ‘demographic crisis’. Moreover, the governance and the funding model are also impacted by the push for the ‘standardisation of the HE system within EU’. Governance and the funding model (secondary causes) supplemented by the demographic crisis (condition) cause a brain drain of both the students and academic staff and predestine the inefficiency of the recourses as quantity is prioritised over quality. In addition, study classifies ‘quality’ and ‘research and development’ as secondary effects as they are shaped by all the above issues. Last but not least, the results show that both the quality of education and research capacity are low.
 - 3) This study confirms that unbreakable bond between the research and development activities and the innovation capacity of both institutions and nations (Ren, Eisingerich and Tsai, 2015). Moreover, this study identifies issues of the HE system (i.e. academic mobility, brain drain, low research & development capacity, governance, state dependence, inequality) which are also valid for other post-socialist countries in Europe. The issues related to the lack of strategy and vision, the funding, quality of education, and massification of education are recognised as global issues. While the lack of an adequate national policy, demographic crisis, the distribution of resources, the lack of control and regulations are issues that have been seen as national issues.

- *What enables and what blocks the implementation of strategic reforms and innovation in HE?*
- 4) This study supports the previous literature on organisational learning according to which HEIs will be highly benefited if they become learning organisation (Jorgensen, 2018).
 - 5) Although the developing countries desperately need to transform and reform their HE systems, they have low capacity to do it because of number of reasons such as undeveloped economy, low administrative capacity, lack of financial and human resources, broken links with the industry.
 - 6) This study identified that there are three dimensions of barrier to reforms and innovations: individual, organisational /institutional and system. The individual barriers are: the lack of shared vision and the unwillingness to learn, which supports the organisational learning theories (Serrat, 2017). Surprisingly, the main organisational barriers are not directly related to the organisational learning theories. These barriers are inequality and the broken links with the industry, which refer to the influence of globalisation (Popescu, 2015) and inequality (Pucciarelli and Kaplan, 2016) on the higher education sector instead. The study identified that the lack of strategy and vision, and social buffers are the main system barriers. Their theoretical linkage is mixed as the first barrier refers to organisational learning (Berson, Da'as and Waldman, 2015), while the second one refers to the transformation and change theories (Pelling, O'Brien and Matyas, 2015).
 - 7) The study has shown that the barriers at all three levels (individual, organisational and system) are associated with high level of resistance to change, which is not untypical for the HE systems and institutions (Griffin and Moorhead, 2014).
 - 8) This study also identifies the three dimensions of drivers for reforms and innovations. The individual drivers founded by this study are the shared vision and strive for personal development. The organisational drivers suggested by data findings and analysis are the transformation of HEIs into business organisation, and into learning organisations. Last but not least, the system

drivers refer to the re-design of the system, and the creation of vision and national policy. These findings are linked with the organisational and motivational theories explain why certain individuals, groups and organisations are more or less likely to learn (Chadwick and Raver, 2015).

9) It is not surprising that elements of learning organisation theory are classified as drivers for social innovation and transformation, or as barriers if these elements are not presented as it was previously stated that these theories are unbreakably bonded (Rasiah, 2017).

- *What are the internal and external factors that influences the implementation of strategic reforms and innovations?*

10) The internal factors identified by this study that impact the implementation of innovations and reforms are collaboration, interactions, organisational structure and decision making. While the external factors are related to the economic environment, the political environment, the system governance and the historico-cultural background.

11) This study found that the collaborations between Bulgarian universities and industry are rare, because the business in the country is primarily small and middle-sized. The weak collaboration explains the lack of innovations (Moon, Mariadoss and Johnson, 2017), and the inequality between the HEIs in the developed and developing countries.

12) This study also reveals that the current system and organisational designs do not promote collaboration and interactions between system actors, which indicates a high level of fragmentation of the HE system. Moreover, although that the role of the leaders and managers is significantly important for the re-design of both organisations and systems, this is not the case currently in Bulgaria where the public universities haven't achieved this level of autonomy.

13) This study has been unable to demonstrate that there is a relationship between the management style, the decision making and the generation or implementation of innovation.

- 14) The external factors that characterise the Bulgarian context and influence the implementation of reforms and innovations identified by this thesis are: economic environment, political environment, governmental and cultural and historic background.
- 15) The undeveloped economic environment is considered as the top external factor that impact the HE system in Bulgaria. Results and analysis reveal that it impacts the HE system in two ways: 1. Affects negatively the graduate employability; 2. Impacts the amount and the sources of funding. The HEIs in the developing countries are in less advantageous position than the HEIs in the developed countries, but they still can imply strategies to improve the existing situation (Altbach, 2013). However, data findings and analysis show that the HEIs in Bulgaria are not taking any measures to handle the challenging economic environment.
- 16) The research has identified that there are two aspects of the political environment that affect the HE system: the first one is related to the politicisation of the system, and the second one is related to the political uncertainty. Results show that the HE system is still politicised at some extent, which is common for the countries that used to be politicised in the past such as the EE developing countries and even China (Gong and Dobinson, 2019). Governments in Bulgaria are frequently resigning, which leads to political uncertainty and the lack of sustainability of policies and regulations. The results of this study contradict with these of the existing literature which suggest that innovations are more likely to occur during times of political instability (McLendon, Deaton and Hearn, 2007).
- 17) The results reveal that the government is the only fund provider and the main decision maker although HEIs are autonomous. A paradox has been identified. On one hand, the government provides funding and propose laws and norms. On the other hand, it does not control how this funding is used, and does not monitor the outcome of the proposed laws and norms. The results of the study suggest that the role of the government is more important than this of the universities for the implementation of strategic reforms and innovations, which is opposite to the findings from the literature (Ramos et al. 2015). This might be explained with the strong dependence on the government.

- 18) This study identified that the transition period is still running, and the HE system is stuck between the old system design and the new trends, which blocks its modernisation. The lack of a clear strategy and vision for the further development of the HE explains the fail for modernisation of the system such as the introduction of the Bologna framework. The Bologna frameworks is negatively perceived by the participants, as it was not fully applied.
- *Theoretical framework: Examining the obstacles for the transformation of HEIs into learning organisation seen from OL perception.*
- 19) This chapter offered a theoretical framework based on both the literature review and the data findings that indicate the main obstacle for the HEIs to transform into learning organisations. This framework is based on Senge's learning organisation model that consist of five disciplines: mental models, personal mastery, team learning, shared vision and systems thinking. These five components of LO are seen to apply to different levels of the HE system: individual, institutional and governmental. In summary, in the case of this study mental models refer to individuals; personal mastery refers to both individuals and institutions; team learning refers to institutions; shared vision refers to both institutions and the government; and systems thinking refers to the government.
- 20) In conclusion, the Bulgarian environment can serve as a 'lab' for both researchers and practitioners to study and analyse the global phenomenon of 'social innovation'.

Chapter 6 Research outcomes, reflections and conclusions

6.1 Chapter Introduction

This thesis aims to fill the gap in the existing literature of organisational learning and social innovation by examining the transformation of the HE systems in the Eastern European developing countries. Literature review suggests that both organisational learning and social innovations have to be examined in a variety of contexts (Shaw and Bruin, 2013). Moreover, organisational learning and social innovations are mainly examined in industrial and business contexts (Patnaik, Beriha, Mahapatra and Singh, 2013), although the higher education sector is also a subject of profound changes and challenges all around as a result of the spreading globalization (Dobbins Knill, and Vögtle, 2011; Popescu, 2015). The Bulgarian higher education system is the context of this study, as the review of the existing literature shows that the context of the developing countries and this of the Eastern European one in particular is understudied. There are many research evidences of how social innovations benefited the Western societies of the developed countries, but such evidences are missing when it comes to the context of the developing countries (Ims and Zsolnai, 2014). At the same time, there is a lack of empirical research focusing on social innovation as the studies that examine it are mainly review and conceptual (Windrum et al., 2016). Last but not least, this study was designed in a way to meet the requirements for quality research of both organisational learning and social innovations as suggested by the existing literature:

1) It studies the topic of social innovation and organisational learning from multiple perceptions (policymaker/experts, academics/educators, top university management) as suggested by Baltazar and Herrera (2016).

2) Both economic and political perspectives of the context are examined (Parziale and Scotti, 2016; Shaw and Bruin, 2013).

3) Three dimensions of analysis of organisational learning and social innovation are done: individual, institutional and system (Hasanefendic et al., 2017) in order to offer a holistic approach as the existing research on social innovation is criticized for being 'fragmented' and 'non-cumulative' (Cajaiba-Santana, 2014; Dawson and Daniel, 2010; Pol and Ville, 2009).

Two main sub-sections will be presented in this chapter. The first one will summarise the main findings and contributions. The second one will outline the main research limitations and will provide recommendations for future research.

6.2 Review of the main findings and the theoretical contribution of this thesis

The design of this thesis is grounded on the comprehensive review of relevant studies and the methodological choice that links its research questions to evidence. This multi-disciplinary study extends the existing knowledge on social innovation and organisational learning by examining the transformation of the higher education system in Bulgaria. Originality of this research is rooted in its macro-to-micro-to-macro approach and deep consideration of the context under which the organisational phenomenon is examined. Moreover, this study offers a system perspective achieved through the application of multilevel analysis. Therefore, three levels of analysis were considered: individual (micro), organisational (meso) and system (macro). The review of the existing literature shows that most of the explanatory organisational studies examining social phenomena are based on mainly ‘lower-level’ explanations (Japperson and Meyer, 2011). Scholars believe that ‘lower-level’ explanations are too heterogeneous and complex to be theorized (Fodor 1997; Goldstein 1956; Simon 1962; Stinchcombe 1991). Hence, this explanatory research is based on ‘higher-level’ explanations, which enables the research objectives of this thesis to be met as follows:

1. By providing a diagnosis of the main challenges and issues of the Bulgarian HE system, as well as indicating their interrelations through the cause-effect analysis;
2. By conceptualising both the drivers and the barrier to social innovation and organisational learning through multi-level analysis (individual, organisational/institutional and system) and indicating how these levels connect.
3. By identifying the main internal and external factors, which characterise the context in which the theories of organisational learning (OL) and social innovation (SI) are examined;
4. By creating a theoretical framework that illustrates the obstacles for the transformation of the HEIs in Bulgaria into learning organisations examined from OL perception.

Moreover, the examination of the relevant theory demonstrates that the phenomenon of social innovation suffers from mismeasurement, as most of the studies examining social innovation are predominantly conceptual and review (Windrum et al., 2016; Herrera, 2016).

The higher education system in Bulgaria was chosen as a context of this study because of the following reasons: a) the data access of the researcher; b) the lack of empirical evidence about the effect of social innovations in the developing countries (Ims and Zsolnai, 2014); and c) the great economic, political and social transformation through which the country was going during the past three decades (Slantcheva-Durst, 2010). In fact, this ongoing transition period has had a significant impact on the HE system as it is now stuck between the old system design and the new trends. This blocks the modernization of the system, which is required to adopt and survive the ongoing uncertainty and global challenges like other HE systems around the globe. In fact, transformation of the HE systems is a huge contemporary issue around the globe as universities are now required to implement fundamental changes in their organisational models (Stage and Aagaard, 2019).

6.2.1 The main challenges that impact the HE system

The empirical results showed that the main issues that the HE system in Bulgaria is currently facing are: “Strategy and vision”, “Governance”, “Demographic crisis”, “Standardisation of higher education systems within EU”, “Funding model”, “Resources”, “Academic Staff”, “Students”, “Quality” and “Research & Development”. These findings are consistent with the prior studies. To elaborate, it is not surprising that the lack of strategy and vision is recognised as a primary cause that leads to other challenges, as it is seen by the existing literature as a top priority of every transformation and change process (Stouten and Rousseau, 2018). Data findings and analysis confirm the findings of prior studies, which suggest that people are very likely to resist any organisational and system change if there is no clear and well-communicated vision (Cole, Harris and Bernerth, 2006; Haque, TitiAmayah and Liu, 2016).

This study produced results which corroborate the findings of a great deal of the previous work in this field by finding and recognizing ‘governance’ and ‘funding’ as major issues that influence the HE system (Marshall, 2018; Mok and Neubauer, 2016; Shaw, 2018; Nagy, Kovats and Nemeth, 2014; Estermann – Pruvot, 2011; Fatkullina et al. 2015; Glushak, Katkow, Glushak, Katkova and Kovaleva, 2015; Jongbloed et al., 2010). Although, HE systems all around the world are now experiencing changes in their governance and funding models, this thesis endorses that such changes are either delayed or problematic in the case of the developing countries.

Data results suggest that the challenges related to ‘demographic crisis’, ‘academics’ and ‘students’ refer to the inequality between the developing and developed countries predestined by the spreading globalisation and brain drain (Siekierski, Lima and Borini, 2018; Marinakou, Giousmpasoglou, and Paliktzoglou, 2016; Fink and Miguelez, 2018; Siekierski, Lima and Borini, 2018; Maurseth, 2019; Altbach, Reisberg and Rumbley, 2019; Altbach, 2015; Baruch and Hall, 2004; Baruch, Altman and Tung, 2016; Baruch, Budhwar and Khatri, 2007; Altbach and Knight, 2007; Boncea, 2015). Empirical data suggests EE developing countries like other developing countries are harmed by the spreading globalisation, which results in brain drain for them in contrast to the developed ones that are highly benefited from it.

The results of this thesis agree with the findings of other studies, according to which the quality of education service drops dramatically despite the increase of investment in the sector (Sari et al. 2016). At the same time, the empirical results contradict with the existing literature

which suggests that funding is allocated on performance basis (Hillman, Tandberg and Fryar, 2015). Moreover, this study explains this decline in quality with the promotion of quantity over quality, which leads to unfair funding model and insufficient distribution of funding. Last but not least, data results of this thesis are consistent to the prior studies that recognise the importance of research and development activities for both the innovation capacity and national development (Kankovskaya, 2016; Demchig, 2015; Bikse, Rivza and Riemere, 2015; Ren, Eisingerich and Tsai, 2015). Therefore, it is not surprising that both national and regional economies are undeveloped, and the innovation capacity of Bulgaria is low. According to the empirical data of this study, the research activity in the country is very weak, which due to the fact that the HEIs are not seeking alternative funding providers (Kruss, McGrath, Petersen and Gastrow, 2015). HEIs in the low-income countries, like the Eastern European ones, cannot rely only on the state to fund their research activities as the government cannot afford to provide sufficient funding for scientific research.

6.2.2 Barriers and drivers of strategic innovations and reforms

This study followed both deductive and inductive approaches in order to identify the main barriers and drivers of strategic reforms and innovations examined through the lens of organisational learning. To elaborate, this research was guided by the existing literature to determine three levels of analysis: individual, organisational and system (Japperson and Meyer, 2011). Although, the focus of this thesis is on the system level, it still identifies the barriers and drivers to strategic reforms and innovations at the other two levels (individual and organisational). This is motivated by the systems thinking approach, which fundamentally differs from the traditional form of analysis that fragmentate the individual pieces of what is being studied (Toma, 2010). Therefore, this thesis does not isolate smaller and smaller parts of the system being studied, on the contrary it expands the view to consider larger and larger numbers of interactions and issues (Toma, 2010). Moreover, the holistic approach requires consideration of all three levels of analysis, as well as their relationships, which according to (Chai and Yeo, 2012) is a common flaw of the existing literature. In fact, gaining a big picture perspective requires the situation to be mapped, which involves the examination of different perspectives and opposing views (Bosch, King, Herbohn, Russell and Smith, 2007).

The literature research suggests that the studies that examine innovation in higher education focus either on individual or organisational levels (Hasanefendic et al., 2017; Leisyte and Sigl, 2018; Aldahdouh, Nokelainen and Korhonen, 2018; Wakkee, van der Sijde, Vaupell and Ghuman, 2019). Thus, this study makes a noteworthy contribution by offering a holistic approach in the examination of the system and extending the existing knowledge on organisational learning and social innovation by conceptualizing both the clusters and the obstacles that impact them through multi-level analysis (individual, organisational and system level). The findings are based on deep analysis of triangulated data collected from 46 in-depth interviews: policymakers/experts (including former minister of Education and Science); academics and leaders of education; and top and middle university management, which according to Herrera (2016) is how a quality research on social innovation should be done.

According to the results and analysis of this study, barriers to innovation and reforms are classified in the following way based on the multi-level in-depth analysis:

- a) **Individual barriers:** resistance to change (unwillingness to learn and the lack of shared vision).
- b) **Organisational barriers:** organisational culture, structure and design (the broken links with the industry and the inequality between HEIs in the country and those in the developed countries).
- c) **System barriers:** lack of big picture orientation (the lack of shared vision and adequate national policy, and the social buffers that are caused by the high level of resistance to change).

When it comes to the drivers to innovations and strategic reports, this thesis classifies them as follows:

- a) **Individual drivers:** personal initiative (strive for personal development and openness for change).
- b) **Organisational drivers:** organisational culture, structure and design (transformation of HEIs into profit-oriented organisations, and also their transformation in learning organisations).
- c) **System drivers:** vision (re-design of the system and creation of shared vision and national policy).

6.2.3 The internal and external factors impacting the transformation of the HE system through the implementation of reforms and innovations.

As it was previously discussed in this chapter, the context of this study is examined from both political and economic perspectives (Parziale and Scotti, 2016; Shaw and Bruin, 2013). This thesis examines both the internal and external factors that impact the implications of reforms and innovation, which was guided by the literature review. The findings of this research are consistent with the previous studies that identified a strong relationship between innovation and both collaboration (Moon, Mariadoss and Johnson, 2017; Hrabowski III, 2014), and interactions (Gluckler and Bathelt, 2017; Van Waarden, 2001; Bariakova, 2019; Arulrajah and Senthilnathan, 2016; Draghici et al., 2015; Ivascu, Cirjaliu and Draghici, 2016; Huang and Chen, 2017). Although, some participants displayed

a skepticism about this relationship, the results reveal that both interactions and collaborations are limited which illustrates one aspect of the explanation of the low institutional and national innovative capacity. The topics of organisational structure and decision-making emerged during the study, which are also classified as internal factors. The findings of this thesis are consistent with those of Sethibe (2018), who suggests that there is no relationship between the management style and innovation. This is explained with the fact that HEIs in Bulgaria are mainly public, and they depend on the political environment and the ability to obtain sufficient resources (Ricard, Klijn, Lewis and Ysa, 2016) more than to the leadership style. Therefore, the results neither confirm nor fully disapprove the findings from the existing literature that propose that design of the organisational structure and culture is a determining factor for the promotion of innovation and adaptiveness (Ismail, 2016; Taha, Sirkova and Ferencova, 2016).

When it comes to the external factors, the results of this investigation show that the economic environment is of a great significance when it comes to innovations. Yet, the existing literature examines the impact of university on the regional and national economy (i.e. Tripl, Sinozic and Smith, 2015; Bramwell and Wolfe, 2008; Drucker and Goldstein, 2007), but there is deficit of academic studies that examine this relationship reversely. This is explained with the deficiency of empirical research studying social innovation in the higher education context of the developing countries (Ims and Zsolnai, 2014; Windrum et al., 2016). Thus, makes the contribution of this thesis very noteworthy, as it enhances our understanding of influence of the economic environment to the HEIs and their innovation capacity. Political environment was the second major external factor that was identified by this research to have a great impact on the HEIs and their transformation through strategic innovations and reforms. This thesis argues that the political environment influences the transformation of HEIs in two ways: 1. through the politicization of the system 2. through the ongoing uncertainty. The review of the literature shows that the politicisation of the higher education and science is a common phenomenon observed in the post-socialist countries (Osipian, 2012).

Moreover, politicisation of both education and science is also observed in China (Gong and Dobinson, 2019), so this finding goes not only beyond the Bulgarian context but even beyond the post-socialist countries in Europe. However, the post-socialist developing countries are further hampered to operate in the global economic context after decades of isolation (Soulsby and Clark, 2007). Moreover, they moved from guaranteed economic environment to a market economic environment. Last but not least, post-socialist countries

have a specific social logic that is quite different than this of the Western countries, which shapes their organisations, cultures and structures (Soulsby and Clark, 2007).

The governmental response to the ongoing challenges and spreading uncertainty is seen by the participants as inadequate as they propose that laws are proposed without much concern about their outcomes, which adds to Senge (1990:25)'s argument that decision-makers rarely experience the consequences of their decisions, as in the most cases their effect is a long-term one. Data shows that tactics are prioritised over strategies, as governments cannot afford to invest in long-term strategies. Moreover, literature review suggests that governments around the globe are presently challenged to monitor a complex ecosystem (Nagy et. al. 2014). At the same time, data shows that the Bulgarian higher education system is still in a process of transition where two visions are clashing (Andrei, Lefter, Oancea and Stancu, 2010). Finally, this thesis was unable to support the existing literature that suggests the Bologna process has a significant impact on the higher education systems in the developing countries (Vögtle, 2019, Slatcheva- Durst, 2010; Olsen and Maassen, 2007; Vaira, 2004; Krucken, Kosmutzky and Torcka, 2007), as the topic was slightly covered. Yet, those of the participants, who discussed it – confirmed its adverse effect on the HE system, which is reasoned with the halfway application of the framework.

In conclusion, some of the findings of this study were verified and explained by previous studies. This thesis identified that some issues were valid only for the national context (i.e. lack of vision and adequate national policy, specific social logics, funding model and criteria, broken links with industry; quality assessment). Other issues were valid for the contexts of the other post-socialist countries (brain drain, undeveloped economic environment, bologna framework, transition period, research and development, inequality, funding and governance, politicisation of the education and science, administrative capacity). There were also issues that are valid even for the global context (i.e. massification of education, quality of education; graduate employability). Overall, it is reasonable to claim that the Bulgarian environment can serve as a 'lab' for both researchers and practitioners to study and analyse both the process of transformation of the HE systems examined by organisational learning perspective, and the global phenomenon of 'social innovation'. The findings of this study also offer strong implications for the potential to use the organisational learning theory to make predictions on the both system and organisational transformations in the real world, which might go beyond the HE context.

6.3 Implications for academic careers

Despite this was not a primary objective of this thesis, the findings of this study indicate several implications for academic careers. As it was already explicated, 46 in-depth interviews were conducted with 53 participants with an academic background. Fifth-five of them are academics, whereas 26 out of 45 are in managerial academic positions. Thus, this thesis is based on solid findings to propose a number of lessons that can be applied to academic careers. At individual level this study has found that academic careers in Bulgaria are characterised with low level of motivation, competitiveness and strive for personal development and growth. Institutions do not stimulate academics to produce academic research of good quality, or to improve their teaching methods. Moreover, the economic environment is undeveloped, which limits the opportunities for business-oriented collaborations between HEIs and the private sector. At system level this research has identified that the design of the Bulgarian HE system is not oriented toward motivational and competition stimuli. In other words, the individuals who pursue development in their academic career, are more inclined to academic mobility known as ‘brain drain’ in the developing countries (Baruch, Altman and Tung, 2016).

This study builds on the theory introduced by Baruch (2013), who sees the academic labour markets as “ecosystems”. The findings of this research suggest that the economic, political, social and governmental aspects of the national context have a crucial impact on the transformation and development capacity of the HEIs in Bulgaria, which shape the national academic “ecosystem” (Baruch and Fidan, 2019). Therefore, as suggested by Baruch (2013), the theory of ‘ecosystems’ can be used as a theoretical framework for explaining why the talented employees are leaving the HE system in Bulgaria and move either abroad or in the private sector as suggested by the data findings. In addition, the results of this thesis support the findings of Baruch (2013), which propose that academic careers must be managed in accordance to both the local and the global markets. Most importantly, the ecosystem in the developing countries like Bulgaria do not only impact the higher education sector, but also the competitive advantage at national level, which fully depends on education and knowledge creation (Baruch, 2013; Demchig, 2015; Ortenblad and Koris, 2014).

6.4 Contributions to the methodology

Despite the general criticism levied at qualitative research methods for lacking statistical rigor that can be tested for validation and reliability, this research recognised it as the most appropriate method when it comes to gaining a deep understanding for both the context and the subject. This methodological choice was motivated by the existing literature on social innovation (Shaw and Bruin, 2013; Baltazar and Herrera, 2016; Short, Moss and Lumpkin, 2009). Therefore, a single-case study strategy was adopted as it involves a multi-level approach that examines the interactions between organisations, groups and individuals (Zivkovic, 2012). In fact, in the case of this research, a single case study means a whole higher education system in Bulgaria with a participation of representatives of 15 universities. All types and sizes of HEIs were approached (i.e. public and private universities; small, middle and large-sized; hard or soft science-oriented; at the top, middle or bottom of the national ranking system). The researcher managed to collect data from representatives of diverse branches of science: humanities, arts, social sciences, law, applied sciences, natural sciences, engineering, IT, medicine and journalism. Furthermore, three categories of interview participants participated in this research: top and middle university management, academics and policy makers/experts. The in-depth interviews were relatively high participated and demographically representative.

A saturation was reached, so further data collection and analysis was unnecessary (Saunders, et. al., 2018). Moreover, this study adopted a data triangulation as a data validation strategy, which was also recommended by Baltazar and Herrera (2016), who propose that a quality research on social innovation involves researching from multiple perceptions (e.g. policymakers, leaders of social change, educators, and researcher). Thus, the phenomenon of social innovation and transformation are embedded in a single social setting, which has two sub-settings: 1. HEIs; and 2. governmental bodies (Ministry of Education and Science, Bulgarian Parliament, Education and Science Committee etc.). The case study research is an optimal research strategy for exploring both the phenomenon and the contextual factors that impact it, which makes it useful for understanding and explaining the process of change and transformation (Yin, 2009). In addition, this study adopted different strategies in analyzing the data referring to the three research questions: cause-effect analysis, multi-level analysis and thematic analysis. Last but not least, this research increases the understanding of complex problems in a more insightful way by creating knowledge from range and partial perspective that is highly depended on context and purpose (Van De Ven and Jones, 2006).

6.5 Contributions to practice

The practical importance of this research study is to offer insights for universities, policy makers, decision makers, and reformers about what impacts both positively and negatively the transformation of the HE system in Bulgaria. Moreover, it sheds the light on number important real-world issues (i.e. massification, inequality, globalisation, decreased quality, governance of HE systems, modernisation etc.). To elaborate, this thesis offers several practical contributions:

- It diagnoses the whole HE system, and not only identify its main challenges and issues, but also suggests their cause-effect-condition relationships;
- It offers insights about what blocks and what drives innovations and strategic reforms. The study found that the biggest blockage from managerial perspective is the lack of vision and national policy. At the same time, the biggest driver for innovation at system level will be the re-design of HE system, while at university level is their transformation into learning organisations.
- It indicates the internal and external factors that influence the HEIs and their reformation and transformation. Besides, it gives insight into their level of impact.

6.6 Research limitations

6.6.1 Research bias

Every research is accompanied by number of limitations even the very good ones. The limitations of this particular study are acknowledged and discussed in this section. The first limitation to start with is related to the nature of the qualitative methods, which are characterised with biases, as a result of the involvement of the researcher. This is especially valid when the qualitative research involves semi-structured interviews, as the researcher bias can direction of the conversation. In order to minimise these two biases, first, the researcher interviewed people from multiple-perspectives (academics, top and middle university management, and policymakers/experts) and diverse background (humanities, arts, social sciences, law, applied sciences, natural sciences, engineering, IT, medicine and journalism). Second, almost the same questions were asked to every participant, and they

were requested to elaborate or even give examples. For instance, this mostly happened to the questions related to innovation, collaboration and interactions. If the interview participants shared that they are actively interacting and collaborating, they were asked to give examples. The majority of them failed to provide suitable examples, which helped the participant to gain a more credible perception about what is really going on in reality. Interviews were recorded, so the researcher had the chance to run them back actively in order to make sure that the data findings is not twisted.

Another limitation related to the researcher's bias refers to the fact that the interviews were conducted in Bulgarian, and then the quotations were translated in English. The translation issues were overcome in two ways: a) some quotations were directly translated when this was possible, while others were translated in a way that keeps the original meaning but said it with other words. b) the researcher is native in Bulgarian, and fluent in English, which allowed them to get the meaning attached to words. Interviews were only voice recorded, so the non-verbal communication was not considered. Yet, the researcher minimises the loss of this data by listening over and over the interviews instead of reading the transcripts, in order to pay specific attention on how the things are said (i.e. with scepticism, enthusiasm, positivism, negativism etc.).

6.6.2 Context based limitations

The limitations of this research are due to the nature of its context. Data is collected from a single HE system, which makes this research less generalizable to wider populations of the developing countries. However, this thesis has never aimed to achieve generalization. Its purpose is to gain depth in understanding of both the context and the phenomenon instead. Although, it is suggested by the literature that social innovation suffers from mis-measurement (Windrum et al., 2016), the understanding of the social phenomenon involves focus on meanings vs. measurement (Antwi and Hamza, 2015). Comparing the data findings to the relevant theory, and applying good descriptive and analytic language, however, allows some level of generalisation (Gummeson, 2000).

6.6.3 Recommendations for future research

This research has thrown up several directions, themes and avenues for future research arise from this study. First, as this thesis already examined a single case study, future researches comparing the Bulgarian HE system with the HE systems of other EE developing countries is encouraged. Second, students can also be approached in the research sample, as although they are not likely to know anything about the relationship between HEIs and the government, they are consumers of the education product. Third, this research focuses on the examination of the Bulgarian HE system from system perception. Thus, future researches focusing on the individual and organisational levels, will be very significant. Examining the process of transformation of HEIs from individual perspective, allows a statistical approach where measurement is possible. Next, an important area for future research opened by this study is related to the drivers and barriers to the implementation of strategic reforms and innovations, which can be tested in various different cultural, social and sector context. To elaborate, some of these findings might be valid beyond the higher education context (i.e. in public, private or non-for-profit organisations).

6.6.4 Chapter summary

This chapter concludes this thesis and provided a summary of the key study's findings. It discusses the theoretical, methodological and managerial contributions of this thesis. Last but not least, it indicates the limitations of this study and suggests some areas for future research and development.

Appendix A **Semi-structured interview questions**

1. How long have you been working - in higher education, and for this university?
2. Did you have any experience outside academia? What is it? How long did you work outside before you came to work for HE*?
3. In what ways was your experience outside academia useful for your current job?
4. Could you tell me your typical day at work?
5. Which are the most important issues and problems that you are facing every day?
6. How many people report to you? With how many do you normally work with everyday?
7. If it was a matter of choice, would you prefer to work alone, in a small team, or in a bigger team?
8. What do you think about the interactions with others at work?
9. How are relationships with your colleagues within your school/faculty?
10. How is your relationship with your colleagues across the university?
11. How is your relationship with your line manager?
12. How are the relationships with other managers and leaders across the university?
13. How decisions are normally made at your school?
14. Could you tell me, how the normal weekly/monthly university councils (meetings) are held?
15. What do you normally discuss on these meetings?
16. What type of contacts with external organisations do you have?
17. If yes, what are they for?
18. How do you work with people from these external organisation?
19. What do you think is the main issue of higher education in this country and why??
20. What do you think are possible solutions for that issue?
21. What factors have impacts on your performance?
22. How does the political and economic environment affect your university and so your job?
23. Has the alignment of the Bologna framework impacted the HE system? If yes/ How?
24. How important is innovation in HE?
25. What do you think about innovation in HE?
26. What do you think are the aspects of priority for innovation in HE?
27. How does the University and government motivate innovation? – can you say something about – strategy, policy and practice?
28. Do you have any experience in any innovative projects in HE? How was it
29. What do you see the government’s role in the HE development of this country?

30. What has it done so far?
31. What do you see your university's role in the HE development of this country?
32. What has it done so far?
33. What do you think your role in the HE development of this country?
34. Who do you think should be the designers of HE of this country?

Appendix B Coding and evidence table

Table 8. Coding and evidence table

Theme	Codes derived	Numerical Code	Number of participants who said it	Period
The main systemic challenges of the higher education system in Bulgaria		1		
	Strategy and vision	1.1	17	No specific timeline was outlined, but definitely the transition period
	Fragmentation	1.1.1	12	No specific timeline was outlined, but definitely the transition period
	Governance	1.2	24	The past couple of years
	Autonomy	1.2.1	4	The past couple of years
	Corruption	1.2.2	7	No specific timeline was outlined, but definitely the transition period
	Regulations and control	1.2.3.	6	The past couple of years
	Number of HEIs	1.3	18	No specific timeline was outlined, but definitely the transition period
	Funding	1.4	21	The past couple of years (prior 2016)
	Material resources	1.5	19	No specific timeline was outlined, but definitely the transition period
	Financial resources	1.5.1	10	No specific timeline was outlined, but definitely the transition period
	Facilities	1.5.2	11	No specific timeline was outlined, but definitely the transition period

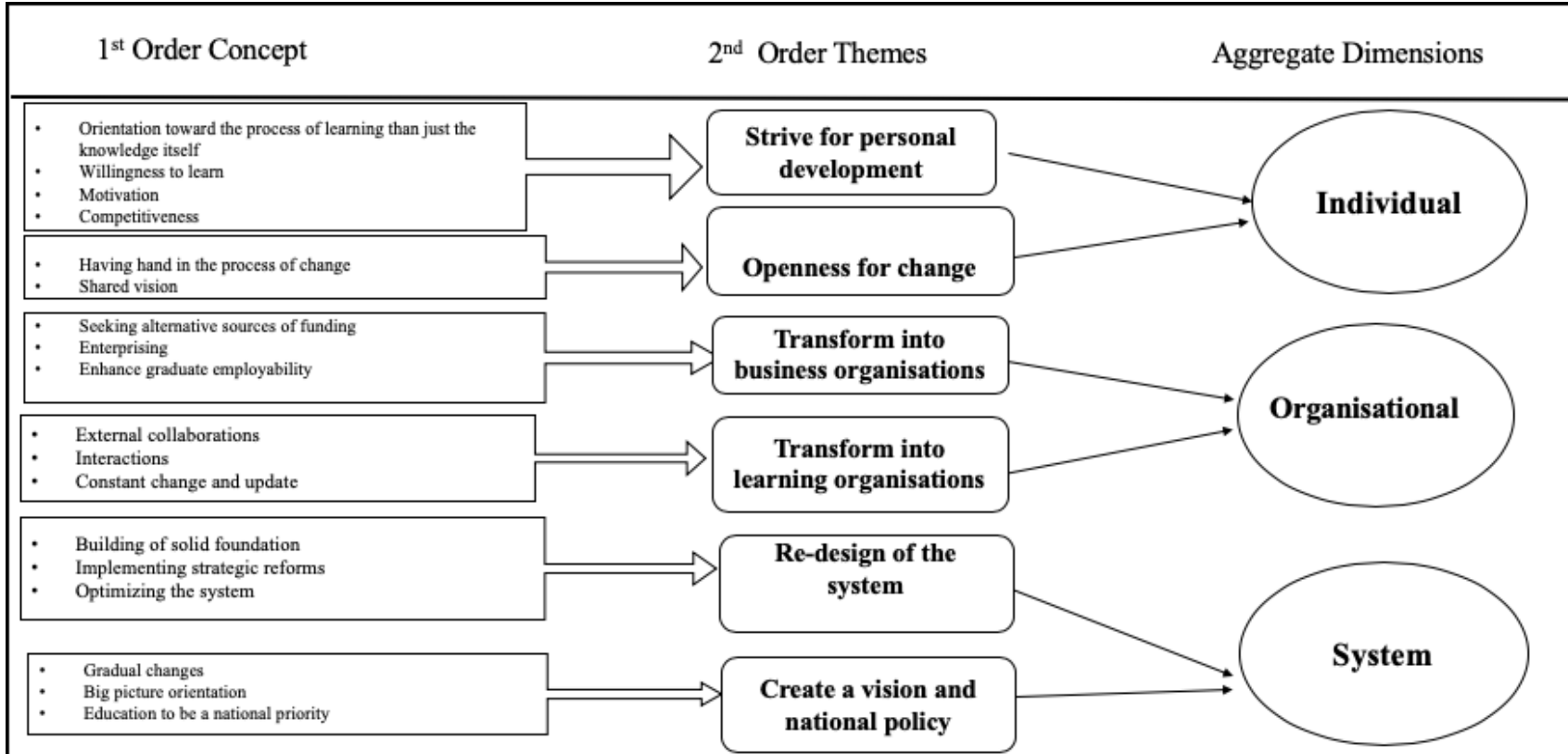
	Human resources	1.5.3	23	Since the second half of the transition period
	Standardisation of HE between Bulgaria and EU	1.6	25	Since Bulgaria's accession to the European Union
	Application of EU models	1.6.1	7	Bulgaria's accession to the European Union
	Commercialisation of HE	1.6.2	11	No specific timeline was outlined, but definitely the transition period
	Poor link between HEIs and industry	1.6.3	7	No specific timeline was outlined
	Demographic crisis	1.7	13	Since the beginning of the transition period
	Brain Drain	1.7.1	6	Since the beginning of the transition period
	Research & Development	1.8	24	No specific timeline was outlined, but definitely the second half transition period
	Quality	1.9	22	No specific timeline was outlined, but definitely the transition period
Barriers and drivers for the implementation of strategic reforms and innovations in the higher education system in Bulgaria		2		
	Higher Education: sector specifics	2.1	15	Generally valid for the HE
	Reforms in the HE system	2.2	27	Since about 10 years prior the interviews
	Resistance to change	2.2.1	16	Since the beginning of the transition period
	Innovations in HE	2.3	33	Since about 5 – 6 years prior the interviews in 2016 and 2017.
	Aspects of HE mostly need innovation	2.3.1	15	Since the beginning of the standartisation

	Experience related to innovation	2.3.2	9	Since about 5 – 6 years prior the interviews in 2016 and 2017.
Factors influencing transformation of the HE system				
Internal		3.1		
	Collaborations	3.1.1	23	Not specific period (valid by the time of the interviews)
	Interactions	3.1.2	17	Not specific period (valid by the time of the interviews)
	Organisational structure and decision making	3.1.3	23	Not specific period (valid by the time of the interviews)
External		3.2		
	Economic	3.2.1	18	Since the beginning of the transition period (from 1989/1990 and on)
	Political	3.2.2	26	Affecting HEIs through uncertainty – (from 2010 and on); Impacting the amount of funding – since the beginning of the transition period (1989/1990).
	Governance	3.2.3	30	
	Role of the government	3.2.3.1	21	Since the beginning of the transition period (1989/1990) when the new constitution was adopted.
	Priority of the government	3.2.3.2	10	Since the beginning of the transition period (1989/1990)
	Cultural and historic background	3.2.4	9	

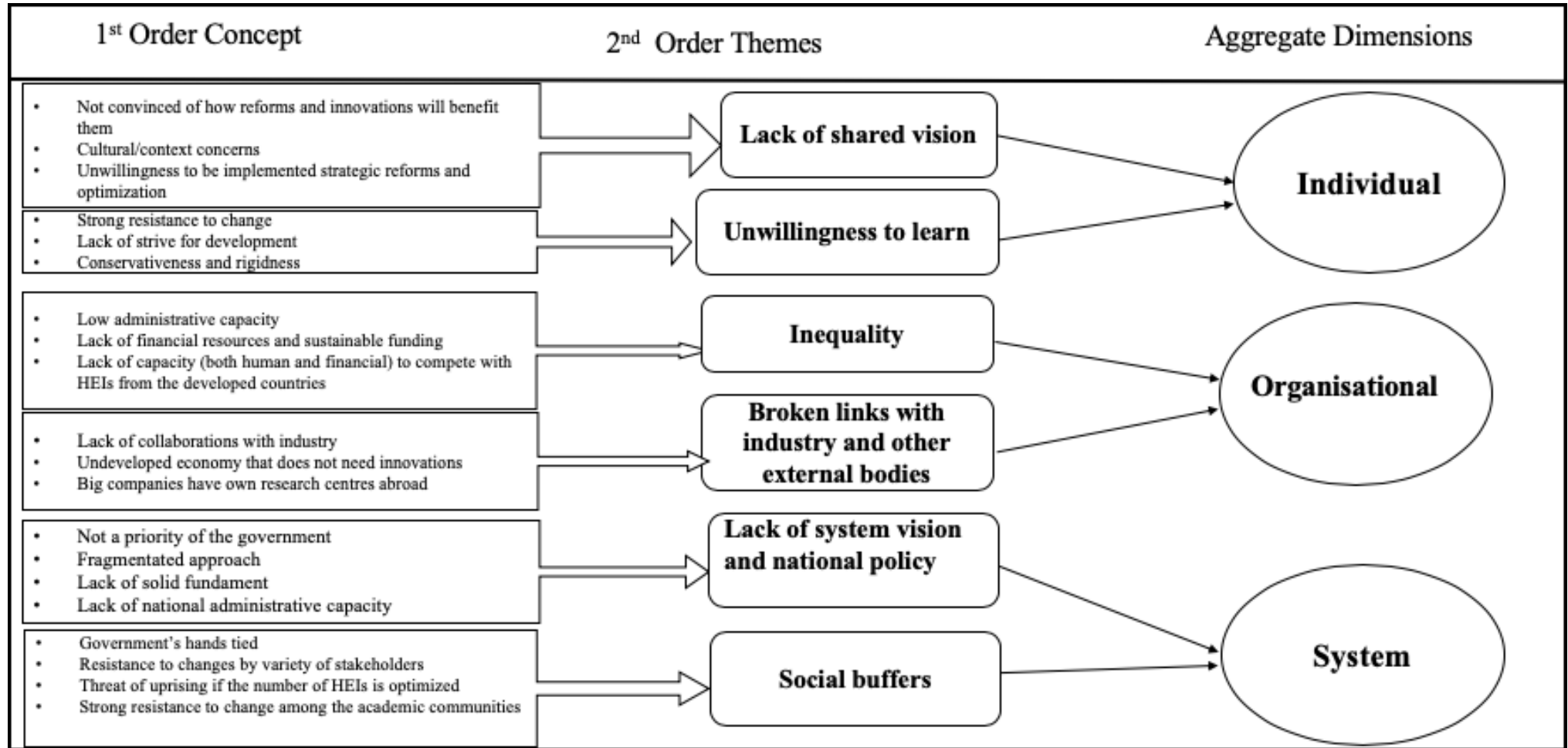
	Transition period	3.2.4.1	5	Since 1989/1990
	The alignment of the Bologna framework	3.2.4.2	6	Since 1999

Appendix C Data structure (Drivers and Barriers to the transformation of the HE system in Bulgaria)

C.1 Drivers



C.2 Barriers



List of References

1. Ackoff, R. L. 1974. Redesigning the Future, New York: John Wiley & Sons. Relationship Within a Business Network Context. *Journal of Marketing*, 58(4), pp. 1-15.
2. Adams, D. and Hess, M. 2010. Social Innovation and Why It Has Policy Significance. *Economic and Labour Relations Review*, 21 (2), pp. 139–155.
3. Akalu, G. A. 2016. Higher education ‘massification’ and challenges to the professoriate: do academics’ conceptions of quality matter?. *Quality in higher education*, 22(3), pp.260-276.
4. Aksom, H. and Tymchenko, I. 2020. How institutional theories explain and fail to explain organizations. *Journal of Organizational Change Management*.
5. Aktan, C. C. 2007. Change, Global Trends and New Paradigms in Higher Education. İzmir Yasar University Publications.
6. Al-Husseini, S. and Elbeltagi, I. 2016. Transformational leadership and innovation: a comparison study between Iraq's public and private higher education. *Studies in Higher Education*, 41(1), pp.159-181.
7. Alavi, S. B. and McCormick, J. 2004a. Theoretical and measurement issues for studies of collective orientation in team contexts. *Small Group Research*, 35(2), pp.111-127.
8. Alavi, S.B. and McCormick, J. (2004b), “A cross-cultural analysis of the effectiveness of the learning organization model in school contexts”, *The International Journal of Educational Management*, 18(6/7), pp. 408-416.

9. Aldahdouh, T. Z., Nokelainen, P. and Korhonen, V. 2018. Innovativeness of Staff in Higher Education:" Do Implicit Theories and Goal Orientations Matter?". *International Journal of Higher Education*, 7(2), pp.43-57.
10. Alpaydm, U. A. R. 2019. Exploring the spatial reach of co-publication partnerships of multinational enterprises: to what extent does geographical proximity matter?. *Regional Studies, Regional Science*, 6(1), pp.281-298.
11. Altbach, P. 2015a. Higher education and the WTO: Globalization run amok. *International Higher Education*, (23).
12. Altbach, P. 2015b. Knowledge and education as international commodities. *International higher education*, (28).
13. Altbach, P. G. 2004. Globalisation and the university: Myths and realities in an unequal world. *Tertiary Education & Management*, 10(1), pp.3-25.
14. Altbach, P. G. 2007. Globalization and the university: Realities in an unequal world. *International handbook of higher education*. pp. 121-139. Springer, Dordrecht.
15. Altbach, P. G. 2012. *A half-century of Indian higher education: Essays by Philip G Altbach*. SAGE Publications India.
16. Altbach, P. G. 2013. Advancing the national and global knowledge economy: the role of research universities in developing countries. *Studies in higher education*, 38(3), pp.316-330.
17. Altbach, P. G. and Knight, J. 2007. The internationalization of higher education: Motivations and realities. *Journal of studies in international education*, 11(3-4), pp. 290-305.
18. Altbach, P. G., Reisberg, L. and Rumbley, L. E. 2009. Trends in global higher education: Tracking an academic revolution.

19. Altbach, P. G., Reisberg, L. and Rumbley, L. E. 2019. *Trends in global higher education: Tracking an academic revolution*. BRILL.
20. Altuna, N., Contri, A. M., Dell'Era, C., Frattini, F. and Maccarrone, P. 2015. Managing social innovation in for-profit organizations: the case of Intesa Sanpaolo. *European Journal of Innovation Management*, 18(2), pp.258-280.
21. Alvesson, M. and Ashcraft, K. L. 2012. Interviews. In G. Symon & C. Cassell (Eds.), *Qualitative Organizational Research: core methods and current challenges* (pp. 239 - 257). London: Sage Publications.
22. Andrei, T., Lefter, V., Oancea, B. and Stancu, S. 2010. A comparative study of some features of higher education in Romania, Bulgaria and Hungary. *Romanian Journal of Economic Forecasting*, 13(2), pp.280-294.
23. Antwi, S. K. and Hamza, K. 2015. Qualitative and quantitative research paradigms in business research: A philosophical reflection. *European Journal of Business and Management*, 7(3), pp.217-225.
24. Appelbaum, S. H. and Goransson, L. 1997. Transformational and adaptive learning within the learning organization: a framework for research and application. *The learning organization*, 4(3), pp.115-128.
25. Argote, L., McEvily, B. and Reagans, R. 2003. Managing knowledge in organizations: An integrative framework and review of emerging themes. *Management science*, 49(4), pp.571-582.
26. Arkady, U. and Tatiana, U. 2017. Education and globalistics. *Future human image*, 7.
27. Arnold, D. R. and Wade, J. P. 2015. A definition of systems thinking: A systems approach. *Procedia Computer Science*, 44(10), pp.669-679.
28. Arnold, M. G. and Hockerts, K. 2011. The greening dutchman: Philips' process of green flagging to drive sustainable innovations. *Business Strategy and the^[1]Environment*, 20(6), pp. 394-407.

29. Arnold, M. and Barth, V. 2012. Open innovation in urban energy systems. *Energy Effic*, 5 (3), pp.351-364. <http://dx.doi.org/10.1007/s12053-011-9142-6>.
30. Arulrajah, A. and Senthilnathan, S. 2016. The Determinants of Innovation and Productivity of a Nation. *Risk Governance & Control: Financial Markets & Institutions*, 6(3), pp.11-17.
31. Arumugam, T., Idris, K., Omar, Z. and Munusamy, K. 2015. Organizational learning and service quality in healthcare industry. *Asian Journal of Business and Management Sciences*, 4(6), pp.1-25.
32. Askling, B., Lycke, K. H. and Stave, O. 2004. Institutional leadership and leeway-important elements in a national system of quality assurance and accreditation: Experiences from a pilot study. *Tertiary Education & Management*, 10(2), pp.107-120.
33. Aslam, U., Ilyas, M., Imran, M. K. and Rahman, U. U. 2016. Detrimental effects of cynicism on organizational change: an interactive model of organizational cynicism (a study of employees in public sector organizations). *Journal of Organizational Change Management*, 29(4), pp.580-598.
34. Bak, O. 2012. Universities: can they be considered as learning organizations? A preliminary micro-level perspective. *The Learning Organization*, 19(2), pp.163-172.
35. Baregheh, A., Rowley, J., & Sambrook, S. (2009). Towards a multidisciplinary definition of innovation. *Management decision*, 47(8), pp.1323-1339.
36. Bariakova, D. P. 2019. A SYSTEMATIC REVIEW OF SOCIAL INNOVATION IN HIGHER EDUCATION SYSTEMS AS A DRIVER OF STUDENT EMPLOYABILITY. *Innovate Higher Education to Enhance Graduate Employability: Rethinking the Possibilities*, 44.

37. Barriball, K. L. and While, A. 1994. Collecting data using a semi-structured interview: a discussion paper. *Journal of Advanced Nursing-Institutional Subscription*, 19(2), pp.328-335.
38. Barth, M. and Michelsen, G. 2013. Learning for change: an educational contribution to sustainability science. *Sustainability science*, 8(1), pp.103-119.
39. Baruch, Y. and Fidan, T. 2019. The Turkish Academic Labor Market as an Ecosystem. In *Vocational Identity and Career Construction in Education* (pp. 37-57). IGI Global.
40. Baruch, Y. and Hall, D. T. 2004. The academic career: a model for future careers in other sectors?. *Journal of Vocational Behavior*, 64(2), pp.241-262.
41. Baruch, Y., Altman, Y. and Tung, R. L. 2016. Career mobility in a global era: Advances in managing expatriation and repatriation. *The Academy of Management Annals*, 10(1), pp.841-889.
42. Baruch, Y., Budhwar, P. S. and Khatri, N. 2007. Brain drain: Inclination to stay abroad after studies. *Journal of world business*, 42(1), pp.99-112.
43. Bates, A. and Godoń, R. 2017. Tackling knowledge ‘like a business’? Rethinking the modernisation of higher education in Poland. *Compare: A Journal of Comparative and International Education*, 47(4), pp.454-467.
44. Battilana, J. and Casciaro, T. 2013. Overcoming resistance to organizational change: Strong ties and affective cooptation. *Management Science*, 59(4), pp.819-836.
45. Baxter, P. and Jack, S. 2008. Qualitative case study methodology: Study design and implementation for novice researchers. *The qualitative report*, 13(4), pp.544-559.
46. Bayerlein, L. and McGrath, N. 2018. Collaborating for success: an analysis of the working relationship between academics and educational development professionals. *Studies in Higher Education*, 43(6), pp.1089-1106.

47. Beattie, V. and Thomson, S. J. 2007. Lifting the lid on the use of content analysis to investigate intellectual capital disclosures. *Accounting forum*, 31(2), pp. 129-163. Taylor & Francis.
48. Beck, U. 1992. *Risk Society: Towards a New Modernity*. London: Sage.
49. Beckman, S., L. and Barry, M. 2007. Innovation as a learning process: Embedding design thinking. *California Management Review*, 50(1), pp.25-58.
50. Beer, M., Eisenstat, R. A. and Spector, R. 1990. The critical path to corporate renewal.
51. Bejinaru, R. 2017. Universities in the knowledge economy. *Management Dynamics in the Knowledge Economy*, 5(2), pp.251-271.
52. Belle, S. 2016. Organizational learning? Look again. *The Learning Organization*, 23(5), pp.332-341.
53. Benneworth, P and Cunha, J. 2015. Universities' contributions to social innovation: reflections in theory & practice. *European journal of innovation management*, 18(4), pp. 508-527. Available from: <https://doi.org/10.1108/EJIM-10-2013-0099>
54. Benneworth, P. and Fitjar, R. D. 2019. Contextualizing the role of universities to regional development: introduction to the special issue.
55. Berson, Y., Da'as, R. A. and Waldman, D. A. 2015. How do leaders and their teams bring about organizational learning and outcomes?. *Personnel Psychology*, 68(1), pp.79-108.
56. Bianchi, M., Cavaliere, A., Chiaroni, D., Frattini, F. and Chiesa, V. 2011. Organisational modes for Open Innovation in the bio-pharmaceutical industry: An exploratory analysis. *Technovation*, 31(1), pp.22-33.

57. Bikse, V., Rivza, B. and Riemere, I. 2015. The social entrepreneur as a promoter of social advancement. *Procedia-Social and Behavioral Sciences*, 185, pp.469-478.
58. Billing, D. 2004. International comparisons and trends in external quality assurance of higher education: Commonality or diversity?. *Higher education*, 47(1), pp.113-137.
59. Birchall, A., Carnegie, T., Draimin, T., Elkington, L. and Love, C. 2014. Breaking Through: How Corporate Social Innovation Creates Business Opportunity.
60. Bjögvinsson, E., Ehn, P. and Hillgren, P. A. 2012. Design things and design thinking: Contemporary participatory design challenges. *Design issues*, 28(3), pp.101-116.
61. Blackman, D. and Henderson, S. 2005. Why learning organisations do not transform. *The Learning Organization*, 12(1), pp.42-56.
62. Blaxter, M., Poland, F. and Curran, M. 2001. Measuring social capital: Qualitative study of how older people relate social capital to health. *Final Report to the Health Development Agency. London.*
63. Blizzard, J. L. and Klotz, L. E. 2012. A framework for sustainable whole systems design. *Design Studies*, 33(5), pp.456-479.
64. Bloisi, W., Cook, C.W. and Hunsaker, P.L. 2007. Management and Organizational Behavior, 2nd European ed., McGraw-Hill Education. Maidenhead.
65. Bodovski, K., Jeon, H. and Byun, S. Y. 2017. Cultural capital and academic achievement in post-socialist Eastern Europe. *British Journal of sociology of Education*, 38(6), pp.887-907.
66. Boncea, I. 2015. Turning brain drain into brain gain: Evidence from Romania's medical sector. *Procedia Economics and Finance*, 20, pp.80-87.

67. Bosch, O. J. H., King, C. A., Herbohn, J. L., Russell, I. W. and Smith, C. S. 2007. Getting the big picture in natural resource management—systems thinking as ‘method’ for scientists, policy makers and other stakeholders. *Systems Research and Behavioral Science: The Official Journal of the International Federation for Systems Research*, 24(2), pp.217-232.
68. Bowles, S. and Gintis, H. 2003. Schooling in capitalist America twenty-five years later. *Sociological Forum* 18(2), pp. 343-348. Springer Netherlands.
69. Boyatzis, R.E. 1998. Thematic Analysis and Code Development: Transforming Qualitative Information. London and New Delhi: Sage Publications.
70. Bramwell, A. and Wolfe, D. A. 2008. Universities and regional economic development: The entrepreneurial University of Waterloo. *Research policy*, 37(8), pp.1175-1187.
71. Bratianu, C. 2007. The learning paradox and the university. *Journal of Applied Quantitative Methods*, 2(4), pp.375-386.
72. Braun V. and Clarke V. 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, pp.77-101.
73. Brewer, J. 2000. *Ethnography*. McGraw-Hill Education (UK).
74. Brooks, C. F. 2017. Student identity and aversions to Science: A study of translation in Higher Education. *Journal of Language and Social Psychology*, 36(1), pp.112-126.
75. Brown, S.L. and Eisenhardt, K.M. 1995. Product development: Past research, present findings, and future directions. *Academy of management review*, 20(2), pp.343-378.
76. Brown, T. 2008. Definitions of design thinking. *Design Thinking: Thoughts by Tim Brown*, 7.

77. Bruni, D. S. and Verona, G. 2009. Dynamic marketing capabilities in Science-based firms: An exploratory investigation of the pharmaceutical industry. *British Journal of management*, 20, pp.S101-S117.
78. Bryer, R. A. 1979. The status of the systems approach. *Omega*, 7(3), pp.219-231.
79. Bryman, A. 2012. *Social Research Methods* (4th edn,) New York: Oxford University Press.
80. Bryman, A. and Cramer, D. 2009. *Quantitative data analysis with SPSS 14, 15 & 16: A guide for social scientists*. Routledge/Taylor & Francis Group.
81. Bui, H. and Baruch, Y. 2010. Creating learning organizations in higher education: applying a systems perspective. *The Learning Organization*, 17(3), pp.228-242.
82. Bukodi, E. and Goldthorpe, J. H. 2012. Causes, classes and cases. *Longitudinal and Life Course Studies*, 3, pp.292-296.
83. Bunge, M. 2000. Ten modes of individualism—none of which works—and their alternatives. *Philosophy of the social sciences*, 30(3), pp.384-406.
84. Burnes, B. 2015. Understanding resistance to change—building on Coch and French. *Journal of change management*, 15(2), pp.92-116.
85. Bustinza, O. F., Gomes, E., Vendrell-Herrero, F. and Baines, T. 2019. Product–service innovation and performance: the role of collaborative partnerships and R&D intensity. *R&D Management*, 49(1), pp.33-45.
86. Cajaiba-Santana, G. 2014. Social innovation: Moving the field forward. A conceptual framework. *Technological Forecasting and Social Change*, 82, pp.42-51.

87. Callon, M. and Rabeharisoa, V. 2008. The growing engagement of emergent concerned groups in political and economic life: Lessons from the French association of neuromuscular disease patients. *Science, Technology, & Human Values*, 33(2), pp.230-261.
88. Campbell, C. M., and K. O'Meara. 2014. "Faculty Agency: Departmental Contexts that Matter in Faculty Careers". *Research in Higher Education*, 55 (1), pp.49–74.
89. Castells, M. 2004. 'Informationalism, networks, and the network society: a theoretical blueprint', in Manuel Castells (ed.), *The Network Society: a Cross-cultural Perspective*. Northampton, MA: Edward Elgar. pp.3–48.
90. Cervantes, M. and Guellec, D. 2002. *The Brain Drain: Old Myths, New Realities*. Paris: Organisation for Economic Cooperation and Development. Directorate for Science, Technology and Industry.
91. Cerych, L. 2002. Higher education reform in the Czech Republic: A personal testimony regarding the impact of foreign advisers. *Higher Education in Europe*, 27(1-2), pp.111-121.
92. Chadwick, I. C. and Raver, J. L. 2015. Motivating organizations to learn: Goal orientation and its influence on organizational learning. *Journal of management*, 41(3), pp.957-986.
93. Chai, K. H. and Yeo, C. 2012. Overcoming energy efficiency barriers through systems approach—A conceptual framework. *Energy Policy*, 46, pp.460-472.
94. Chalmers, D. M. and Balan-Vnuk, E. 2013. Innovating not-for-profit social ventures: Exploring the microfoundations of internal and external absorptive capacity routines. *International Small Business Journal*, 31(7), pp.785-810.
95. Chapman, D. W. 2009. Education reforms and capacity development in higher education. *The political economy of educational reforms and capacity development in Southeast Asia*, (pp.91-109). Springer, Dordrecht.

96. Chatterton, P. and Goddard, J. 2000. The response of higher education institutions to regional needs. *European Journal of Education*, 35(4), pp.475-496.
97. Checkland, P. 1990. *Systems Thinking, Systems Practice*. Chichester. John Wiley.
98. Chen, Q. 2017. *Globalization and transnational academic mobility*. Springer.
99. Chiaroni, D., Chiesa, V. and Frattini, F. 2010. Unravelling the process from Closed to Open Innovation: evidence from mature, asset-intensive industries. *R&d Management*, 40(3), pp.222-245.
100. Chiva, R. and Alegre, J. 2005. Organizational learning and organizational knowledge: towards the integration of two approaches. *Management learning*, 36(1), pp.49-68.
101. Choi, H. 1995. *An International Scientific Community: Asian Scholars in the United States*. Westport, CT, Praeger.
102. Christensen, C. M. and Eyring, H. J. 2011. *The innovative university: Changing the DNA of higher education from the inside out*. John Wiley & Sons.
103. Clark, B. R. 1983. *The higher education system: Academic organization in cross-national perspective*. Univ of California Press
104. Clark, D. and Altman, Y. 2016. In the age of 'liquid modernity': self-initiated expatriates in Crete, their multi-generational families and the community. *The International Journal of Human Resource Management*, 27(7), pp.729-743.
105. Coffey, A. and Atkinson, P. 1996. *Making Sense of Qualitative Data: Complementary Research Strategies*. Sage Publications, Inc.
106. Cole, G. D. H. 2010. *Socialist economics*. Routledge.
107. Cole, M. S., Harris, S. G. and Bernerth, J. B. 2006. Exploring the implications of vision, appropriateness, and execution of organizational

change. *Leadership & Organization Development Journal*, 27(5), pp.352-367.

108. Coleman, J. S. 1987. Microfoundations and macrosocial behavior. *The micro-macro link*, pp.153-173. edited by Jeffrey C. Alexander, Bernhard.
109. Coleman, J. S. 1990. The emergence of norms. *HECHTER M. et alii*.
110. Coleman, James S. and Thomas J. Fararo. 1992. "Introduction." Pp. ix–xxii in *Rational Choice Theory*,
111. Cooper, R., Junginger, S. and Lockwood, T. 2009. Design thinking and design management: A research and practice perspective. *Design Management Review*, 20(2), pp.46-55.
112. Corbin, J. S. and Strauss, A. 2008. *Basics of Qualitative Research: Techniques and procedures for developing grounded theory (3rd ed.)*. Thousand Oaks, CA: Sage.
113. Corbin, J., Strauss, A. L. and Strauss, A. 2015. *Basics of qualitative research*. Sage publications.
114. Council of the European Union, 2014.
115. Creswell, J. W. 1998. *Qualitative research and research design: Choosing among five traditions*. London: Thousand Oaks.
116. Creswell, J. W. and Poth, C. N. 2016. *Qualitative inquiry and research design: Choosing among five approaches*. Sage publications.
117. Creswell, J. W. and Zhang, W. 2009. The application of mixed methods designs to trauma research. *Journal of Traumatic Stress: Official Publication of The International Society for Traumatic Stress Studies*, 22(6), pp.612-621.

118. Creswell, J. W., Hanson, W. E., Clark Plano, V. L. and Morales, A. 2007. Qualitative research designs: Selection and implementation. *The counseling psychologist*, 35(2), pp.236-264.

119. Crombie, I. K. 1996. *Research in health care: design, conduct and interpretation of health services research*. John Wiley & Sons.

120. Crosling, G., Nair, M. and Vaithilingam, S. 2015. A creative learning ecosystem, quality of education and innovative capacity: a perspective from higher education. *Studies in Higher Education*, 40(7), pp.1147-1163.

121. Crossan, M. M. and Berdrow, I. 2003. Organizational learning and strategic renewal. *Strategic management journal*, 24(11), pp.1087-1105.

122. Cunha, F. and Heckman, J. J. 2009. The economics and psychology of inequality and human development. *Journal of the European Economic Association*, 7(2-3), pp.320-364.

123. Curtis, S., Gesler, W., Smith, G. and Washburn, S. 2000. Approaches to sampling and case selection in qualitative research: examples in the geography of health. *Social science & medicine*, 50(7-8), pp.1001-1014.

124. Cyert, R. M. and March, J. G. 1963. A behavioral theory of the firm. *Englewood Cliffs, NJ*, 2(4), pp.169-187.

125. Dacin, M. T., Goodstein, J. and Scott, W. R. 2002. Institutional theory and institutional change: Introduction to the special research forum. *Academy of Management Journal*, 45 (1), pp.45–56.

126. Dahanayake, N. D. and Gamlath, S. 2013. Learning organization dimensions of the Sri Lanka Army. *The Learning Organization*.

127. Dahl, R. A. 2017. *Politics, economics, and welfare*. Routledge.

128. Daly, J., Kellehear, A. and Gliksman, M. 1997. The Public Health Researcher: A Methodological Approach.
129. Davis, S. N. and Jacobsen, S. K. 2014. Curricular integration as innovation: Faculty insights on barriers to institutionalizing change. *Innovative Higher Education*, 39(1), pp.17-31.
130. Dawson, P. and Daniel, L. 2010. Understanding social innovation: a provisional framework. *International Journal of Technology Management*, 51(1), pp.9-21.
131. DeBurca S. The learning health care organization. 2000. *International Journal for Quality in Health Care*, 12 (6), pp. 457-458.
132. Dee, J. R. and Leišytė, L. 2016. Organizational learning in higher education institutions: Theories, frameworks, and a potential research agenda. In *Higher education: Handbook of theory and research* (pp. 275-348). Springer, Cham.
133. Demchig, B. 2015. Knowledge management capability level assessment of the higher education institutions: Case study from Mongolia. *Procedia-Social and Behavioral Sciences*, 174, pp.3633-3640.
134. DiCicco-Bloom, B. and Crabtree, B. F. 2006. The qualitative research interview. *Medical education*, 40(4), pp.314-321.
135. Dimmock, C. and Walker, A. 2000. "Developing comparative school leadership and management: a cross-cultural approach". *School Leadership and Management*, Vol. 20 No. 2, pp. 143-60.
136. Dixon, N. 1994. *The Organizational Learning Cycle: How We Can Learn Collectively*. McGraw-Hill, Maidenhead.

137. Dlouhá, J., Glavič, P. and Barton, A. 2017. Higher education in Central European countries–Critical factors for sustainability transition. *Journal of cleaner production*, 151, pp.670-684.
138. Dobbins, M. and Knill, C. 2009. Higher education policies in Central and Eastern Europe: convergence toward a common model?. *Governance*, 22(3), pp.397-430.
139. Dobbins, M., Knill, C. and Vögtle, E. M. 2011. An analytical framework for the cross-country comparison of higher education governance. *Higher education*, 62(5), pp.665-683.
140. Dobele, A. R. and Rundle-Theile, S. 2015. Progression through academic ranks: A longitudinal examination of internal promotion drivers. *Higher Education Quarterly*, 69(4), pp.410-429.
141. Dodgson, M. 1993. Organizational learning: a review of some literatures. *Organization studies*, 14(3), pp.375-394.
142. Dominici, G. 2012. Why does systems thinking matter? *Business Systems Review*, 1(1), pp.1– 2.
143. Dougherty, D. 2008. Bridging social constraint and social action to design organizations for innovation. *Organization Studies*, 29(3), pp.415-434.
144. Dowd, S. B. 2000. Organizational learning and the learning organization in health care. *Hospital Materiel Management Quarterly*, 21(3), pp.1-3.
145. Draghici, A., Baban, C. F., Gogan, M. L. and Ivascu, L. V. 2015. A knowledge management approach for the university-industry collaboration in open innovation. *Procedia Economics and Finance*, 23, pp.23-32.

146. Dumčiuvienė, D. 2015. The impact of education policy to country economic development. *Procedia-Social and Behavioral Sciences*, pp.2427-2436.
147. Dyba, A. 2012. Research and Development Expenditure in the European Union – Chances and Challenges. *International Journal of Synergy and Research*, 2, pp.61-75.
148. Easterby-Smith, M. and Lyles, M. 2003. Re-reading Organizational Learning: Selective memory, forgetting, and adaptation. *Academy of Management Perspectives*, 17(2), pp.51-55.
149. Easterby-Smith, M., Golden-Biddle, K. and Locke, K. 2008. Working with pluralism: Determining quality in qualitative research. *Organizational Research Methods*, 11(3), pp.419-429.
150. Easterby-Smith, M., Lyles, M. A. and Tsang, E. W. 2008. Inter-organizational knowledge transfer: Current themes and future prospects. *Journal of management studies*, 45(4), pp.677-690.
151. edited by James S. Coleman and Thomas J. Fararo. Newbury Park, CA: Sage
152. Edmondson, A. C. 2004. Learning from mistakes is easier said than done: Group and organizational influences on the detection and correction of human error. *The Journal of Applied Behavioral Science*, 40(1), pp.66-90.
153. Eisenberg, A., Ignatjeva, S., Iliško, D. and Rauckiene-Michaelsson, A. 2018. Adaptation of the Organizational Learning Culture (OLC) Dimension Methodology in the Israeli Local Authorities Context. *Discourse and Communication for Sustainable Education*, 9(1), pp.50-63.
154. Eisenhardt, K. M. and Graebner, M. E. 2007. Theory building from cases: Opportunities and challenges. *Academy of management journal*, 50(1), pp.25-32.

155. Enders, J., De Boer, H., File, J., Jongbloed, B. and Westerheijden, D. 2011. Reform of higher education in Europe. In *Reform of higher education in Europe*, pp. 1-10. Brill Sense.
156. Erdem, R.A. 2000. An Improvement Plan For The Education System, Department of Primary Education, Classroom Teaching, Faculty of Education, Pamukkale University, 3.
157. Erina, J. and Erins, I. 2015. Assessment of Higher Education Financing Models in the CEE Countries. *Procedia-Social and Behavioral Sciences*, 177, pp.186-189.
158. Esping-Andersen, G. 2005. Le nuove sfide per le politiche sociali del XXI secolo. *Stato e mercato*, 25(2), pp.181-206.
159. Esping-Andersen, G. 2013. L'interazione tra welfare e education: gli effetti sull'uguaglianza di opportunità. Una non intervista a Gøsta Esping-Andersen. *Scuola democratica*, 4(3), pp. 621-630.
160. Estermann, T. 2015. University autonomy in Europe.
161. Estermann, T. and Nokkala, T. 2009. *University autonomy in Europe: exploratory study*. Brussels: European University Association.
162. Estermann, T. and Pruvot, E. B. 2011. *European universities diversifying income streams*. Europ. Univ. Assoc.
163. Fade, S. 2004. Using interpretative phenomenological analysis for public health nutrition and dietetic research: a practical guide. *Proceedings of the Nutrition Society*, 63(04), pp.647-653.
164. Fainshmidt, S., Judge, W. Q., Aguilera, R. V. and Smith, A. 2018. Varieties of institutional systems: A contextual taxonomy of understudied countries. *Journal of World Business*, 53(3), pp.307-322.
165. Farrukh, M. and Waheed, A. 2015. Learning organization and competitive advantage-An integrated approach. *Journal of Asian Business Strategy*, 5(4), p.73.

166. Farvar, M. T. and Milton, J. P. 1972. The careless technology: Ecology and international.
167. Fatkullina, F., Morozkina, E. and Suleimanova, A. 2015. Modern higher education: problems and perspectives. *Procedia-Social and Behavioral Sciences*, 214, pp.571-577.
168. Felin, T. and Zenger, T. R. 2014. Closed or open innovation? Problem solving and the governance choice. *Research policy*, 43(5), pp.914-925.
169. Fell, L. and Russell, D. B. 2000. The human quest for understanding and agreement. *Agricultural extension and rural development: Breaking out of traditions*, pp.32-51.
170. Ferauge, P. 2012. A conceptual framework of corporate social responsibility and innovation.
171. Fereday, J. and Muir-Cochrane, E. 2006. Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International journal of qualitative methods*, 5(1), pp.80-92.
172. Fey, C., Birkinshaw, J. 2005. External sources of knowledge, governance mode and R&D performance. *Journal of Management* 31, pp.597–621.
173. Fillion, G., Koffi, V. and Ekionea, J. P. B. 2015. Peter Senge's learning organization: A critical view and the addition of some new concepts to actualize theory and practice. *Journal of Organizational Culture, Communications and Conflict*, 19(3), p.73.
174. Fleming, L., Greene, H., Li, G., Marx, M. and Yao, D. 2019. Government-funded research increasingly fuels innovation. *Science*, 364(6446),pp. 1139-1141.

175. Flick, U., Von Kardorff, E. and Steinke, I. 2004. What is qualitative research? An introduction to the field. *A companion to qualitative research*, pp.3-11.
176. Flood, R.L. 1991. Implementing total quality management through total systems intervention: A creative approach to problem solving in Diagnostic Biotechnology (PTE) Ltd. In *Systems Thinking in Europe* (pp.43-59). Springer US.
177. Flyvbjerg, B. 2006. Five misunderstandings about case-study research. *Qualitative inquiry*, 12(2), pp.219-245.
178. Fodor, J. 1997. Special sciences: Still autonomous after all these years. *Philosophical perspectives*, 11, pp.149-163.
179. Fodor, Jerry. 1997. "Special Sciences: Still Autonomous After All These Years." *Philosophical Perspectives*
180. Fonseca, L. 2019. Designing regional development? Exploring the University of Aveiro's role in the innovation policy process. *Regional Studies, Regional Science*, 6(1), pp.186-202.
181. Ford, J. D. and Ford, L. W. 2010. Stop blaming resistance to change and start using it. *Organizational Dynamics*, 39(1), pp.24-36.
182. Ford, J. D., Ford, L. W. and D'Amelio, A. 2008. Resistance to change: The rest of the story. *Academy of management Review*, 33(2), pp.362-377.
183. Forman, J. and Damschroder, L. 2008. *Qualitative Content Analysis. Empirical Research for Bioethics: A Primer*. Oxford, UK: Elsevier Publishing, pp.39-62.
184. Forrester, J. W. 1958. "Industrial Dynamics: A Major Breakthrough for Decision Makers,"
185. Forrester, J.W. 1994. System dynamics, systems thinking, and soft OR. *System dynamics review*, 10(2-3), pp.245-256.

186. Fortis, Z., Maon, F., Frooman, J. and Reiner, G. 2018. Unknown knowns and known unknowns: Framing the role of organizational learning in corporate social responsibility development. *International Journal of Management Reviews*, 20(2), pp.277-300.
187. Fossey, E., Harvey, C., McDermott, F. and Davidson, L. 2002. Understanding and evaluating qualitative research. *Australian and New Zealand journal of psychiatry*, 36(6), pp.717-732.
188. Franklin Myra Hodgkinson, P. and Stewart, J. 1998. Towards universities as learning organisations. *The Learning Organization*, 5(5), pp.228-238.
189. Freeman, C. 1995. The 'National System of Innovation' in historical perspective. *Cambridge Journal of economics*, 19(1), pp.5-24.
190. French, W. L., Bell, C. H. and Zawacki, R. A. (Eds.). 2000. Organization development and transformation: Managing effective change (5th ed.). Boston, MA: McGraw-Hill.
191. Fromm, E. 1994. *Escape from freedom*. Macmillan.
192. Fumasoli, T., Pinheiro, R. and Stensaker, B. 2015. Handling uncertainty of strategic ambitions—The use of organizational identity as a risk-reducing device. *International Journal of Public Administration*, 38(13-14), pp.1030-1040
- a. .
193. Fusch, P. I. and Ness, L. R. 2015. Are we where yet? Data saturation in qualitative research. *The Qualitative Report*, 20(9), pp.1408-1416.
194. Galanakis, K. 2006. "Innovation process. Make sense using systems thinking." *Technovation*, 26, p.11.

195. Gallouj, F., Rubalcaba, L., Toivonen, M. and Windrum, P. 2018. Understanding social innovation in services industries. *Industry and Innovation*, 25(6), pp.551-569.
196. Garcia-Morales, V. J., Lloréns-Montes, F. J. and Verdu-Jover, A. J. 2007. Influence of personal mastery on organizational performance through organizational learning and innovation in large firms and SMEs. *Technovation*, 27(9), pp.547-568.
197. García-Morales, V. J., Lloréns-Montes, F. J. and Verdú-Jover, A. J. 2008. The effects of transformational leadership on organizational performance through knowledge and innovation. *British journal of management*, 19(4), pp.299-319.
198. Gentner, D. and Stevens, A. (Eds) 1983a, *Mental Models*, Lawrence Erlbaum Associates, Mahwah, NJ.
199. Gentner, D. and Stevens, A. (Eds) 1983b, *Mental Models*, Erlbaum, Hillsdale, NY.
200. Georgalis, J., Samaratunge, R., Kimberley, N. and Lu, Y. 2015. Change process characteristics and resistance to organisational change: The role of employee perceptions of justice. *Australian Journal of Management*, 40(1), pp.89-113.
201. Gharajedaghi, J. 2011. *System Thinking: Managing Chaos and Complexity*. Burlington.
202. Ghauri, P. and Gronhaug, K. 2010. *Research Methods in Business Studies: A Practical Guide*. (Fourth Edition ed.) FT-Pearson.
203. Gibbs, G. R. 2002. *Qualitative data analysis: Explorations with NVivo*. Open University.
204. Giddens, A. 1979. *Central problems in social theory: Action, structure, and contradiction in social analysis* (241). University of California Press.

205. Münch, R. and Smelser, N. J. (Eds.). 1992. *Theory of culture*. Berkeley: University of California Press.
206. Glaser, B. and Strauss, A. 1967. Grounded theory: The discovery of grounded theory. *Sociology the journal of the British sociological association*, 12(1), pp.27-49.
207. Glückler, J. and Bathelt, H. 2017. Institutional context and innovation. *The Elgar companion to innovation and knowledge creation*, pp.121-137.
208. Glushak, N., Katkow, Y., Glushak, O., Katkova, E. and Kovaleva, N. 2015. Contemporary economic aspects of education quality management at the university. *Procedia-Social and behavioral sciences*, 214, pp.252-260.
209. Goetz, J. P. and LeCompte, V. MD. 1984. Ethnography and qualitative design in educational research.
210. Goldstein, L. J. 1956. The inadequacy of the principle of methodological individualism. *The journal of philosophy*, 53(25), pp.801-813.
211. Goldthorpe, J. and Jackson, M. 2008. Education-based Meritocracy: The Barriers to its Realisation. *Stato e mercato*, (1), pp.31-60.
212. Gong, Q. and Dobinson, T. 2019. Breaking with old ideas: Chinese students' perceptions of China's 'neoliberal turn' in higher education. *Discourse: Studies in the cultural politics of education*, 40(3), pp.331-342.
213. Gong, Y., Huang, J. C. and Farh, J. L. 2009. Employee learning orientation, transformational leadership, and employee creativity: The mediating role of employee creative self-efficacy. *Academy of management Journal*, 52(4), pp.765-778.

214. González-Pernía, J. L., Peña-Legazkue, I. and Vendrell-Herrero, F. 2012. Innovation, entrepreneurial activity and competitiveness at a sub-national level. *Small Business Economics*, 39(3), pp.561-574.
215. Gorelick, C. and Tantawy-Monsou, B. 2005. For performance through learning, knowledge management is the critical practice. *The learning organization*, 12(2), pp.125-139.
216. Grama, B. and Todericiu, R. 2016. Change, resistance to change and organizational cynicism. *Studies in Business and Economics*, 11(3), pp.47-54.
217. Greenwood, R., Suddaby, R. and Hinings, C. R. 2002. Theorizing change: The role of professional associations in the transformation of institutionalized fields. *Academy of Management Journal*, 45, pp.58-80.
218. Greiner, A. 2013. Sustainable public debt and economic growth under wage rigidity. *Metroeconomica*, 64(2), pp.272-292.
219. Griffee, D. T. 2005. Research Tips: Interview Data Collection. *Journal of Developmental Education*, 28(3), pp.36-37.
220. Griffin, R. W. and Moorhead, G. 2014. *Organizational behavior: Managing people and organizations* (11th ed.). CA: Cengage Learning.
221. Grønhaug, K. and Kaufmann, G. eds. 1988. *Innovation: A cross-disciplinary perspective*. Oxford University Press, USA.
222. Guba, E. G. and Lincoln, Y. S. 1994. Competing paradigms in qualitative research. *Handbook of qualitative research*, 2(163-194), p.105.
223. Gummesson, E. 2000. *Qualitative methods in management research*. Sage.

224. Gunay, D. 2011, Issues, Trends, Principles and Recommendations in the Context of Restructring Turkish Higher Education, *Journal of Higher Education and Science*, 1(3), pp.113-121.
225. Hacker, A. and Dreifus, C. 2010. *Higher education?: How colleges are wasting our money and failing our kids---and what we can do about it.* Macmillan.
226. Hackman, J. R. 2012. From causes to conditions in group research. *Journal of organizational Behavior*, 33(3), pp.428-444.
227. Hakim, C. 2012. *Research Design: Succesful Designs for Social Economics Research.* Routledge.
228. Halecker, B. and Hartmann, M., 2013. Contribution of systems thinking to business model research and business model innovation. *International Journal of Technology Intelligence and Planning*, 9(4), pp.251-270.
229. Haque, M. D., TitiAmayah, A. and Liu, L. 2016. The role of vision in organizational readiness for change and growth. *Leadership & Organization Development Journal*, 37(7), pp.983-999.
230. Hartley, J. 2004. Case study research. *Essential guide to qualitative methods in organizational research, 1*, pp.323-333.
231. Hasanefendic, S., Birkholz, J. M., Horta, H. and van der Sijde, P. 2017. Individuals in action: bringing about innovation in higher education. *European Journal of Higher Education*, 7(2), pp.101-119.
232. He, J. J. and Tian, X. 2013. The dark side of analyst coverage: The case of innovation. *Journal of Financial Economics*, 109(3), pp.856-878.
233. Head, B. W. and Alford, J. 2015. Wicked problems: Implications for public policy and management. *Administration & society*, 47(6), pp.711-739.

234. Hedström, P. and Swedberg, R. 1998. Social mechanisms: An introductory essay. *Social mechanisms: An analytical approach to social theory*, pp.1-31.
235. Hedström, P. and Swedberg, R. 1996. Social mechanisms. *Acta Sociologica* 39 (3), pp.281-308
236. Heiskala, R. 2007. Social innovations: structural and power perspectives. *Social innovations, institutional change and economic performance*, pp.52-79.
237. Hellström, T. 2004. Innovation as social action. *Organization*, 11(5), pp.631-649.
238. Hemerijck, A. 2013. *Changing welfare states*. Oxford University Press.
239. Hermannsson, K., Lisenkova, K., McGregor, P. G. and Swales, J. K. 2014. 'Policy scepticism' and the impact of Scottish higher education institutions (HEIs) on their host region: Accounting for regional budget constraints under devolution. *Regional Studies*, 48(2), pp.400-417.
240. Herrera, M. E. B. 2015. Creating competitive advantage by institutionalizing corporate social innovation. *Journal of Business Research*, 68(7), pp.1468-1474.
241. Herrera, M. E. B. 2016a. Innovation for impact: Business innovation for inclusive growth. *Journal of Business Research*, 69(5), pp.1725-1730.
242. Herrera, M. E. B. 2016b. Social innovation for bridging societal divides: Process or leader? A qualitative comparative analysis. *Journal of Business Research*, 69(11), pp.5241-5247.
243. Herrera, M.E.B. 2007. CSR and value creation. Doing good in business matters: CSR in the Philippines (Frameworks). Makati: Asian Institute of Management and De La Salle professional schools.
244. HESA, 2015.

245. Hickey, G. and Kipping, C. 1996. A multi-stage approach to the coding of data from open-ended questions. *Nurse Researcher*, 4, pp.81-91.
246. Hilal, A. H. and Alabri, S. S. 2013. Using NVivo for data analysis in qualitative research. *International interdisciplinary journal of education*, 2(2), pp.181-186.
247. Hillman, N. W., Tandberg, D. A. and Fryar, A. H. 2015. Evaluating the impacts of “new” performance funding in higher education. *Educational Evaluation and Policy Analysis*, 37(4), pp.501-519.
248. Hitchcock, D. H., Hitchcock, G. and Hughes, D. 1995. *Research and the teacher: A qualitative introduction to school-based research*. Psychology Press.
249. Hitt, W. D. 1995. The learning organization: some reflections on organizational renewal. *Leadership & Organization Development Journal*, 16(8), pp.17-25.
250. Hofstede, G. 2001. *Culture’s Consequences*, Sage Publications, Thousand Oaks, CA.
251. Holloway, I. and Todres, L. 2003. The status of method: flexibility, consistency and coherence. *Qualitative research*, 3(3), pp.345-357.
252. Hon, A. H., Bloom, M. and Crant, J. M. 2014. Overcoming resistance to change and enhancing creative performance. *Journal of Management*, 40(3), pp.919-941.
253. Hopper, M. and Stave, K. A. 2008. Assessing the effectiveness of systems thinking interventions in the classroom. *26th International Conference of the System Dynamics Society*.
254. Horta, H., Dautel, V. and Veloso, F. M. 2012. An output perspective on the teaching–research nexus: an analysis focusing on the United States higher education system. *Studies in Higher Education*, 37(2), pp.171-187.

255. Hosley, S.M., Lau, A.T.W., Levy, F.K. and Tan, D.S.K. 1994. “The quest for the competitive learning organization”. *Management Division*, 32(6), pp. 5-15.
256. Howard-Grenville, J., Davis, J., Dyllick, T., Joshi, A., Miller, C., Thau, S. and Tsui, A. S. 2017. Sustainable Development for a Better World: Contributions of Leadership, Management and Organizations. *Academy of Management Discoveries*, 3(1), pp.107-110.
257. Hrabowski III, F. A. 2014. Institutional change in higher education: Innovation and collaboration. *Peabody Journal of Education*, 89(3), pp.291-304.
258. Hsieh, H. F. and Shannon, S. E. 2005. Three approaches to qualitative content analysis. *Qualitative health research*, 15(9), pp.1277-1288.
259. Huang, M. H. and Chen, D. Z. 2017. How can academic innovation performance in university–industry collaboration be improved?. *Technological Forecasting and Social Change*, 123, pp.210-215.
260. Huberman, A. M., Miles, M. and Saldana, J. 2014. Qualitative data analysis: A methods sourcebook.
261. Huq, A. and Gilbert, D. 2017. All the world’s a stage: transforming entrepreneurship education through design thinking. *Education+ Training*, 59(2), pp.155-170.
262. Hutchinson, S. A., Wilson, M. E. and Wilson, H. S. 1994. Benefits of participating in research interviews. *Image: The Journal of Nursing Scholarship*, 26(2), pp.161-166.
263. Hwang, H. and Colyvas, J. A. 2020. Ontology, levels of society, and degrees of generality: Theorizing actors as abstractions in institutional theory. *Academy of Management Review*, 45(3), pp.570-595.

264. Iatagan, M. 2015. Challenges of the Romanian higher education system in the context of globalization. *Procedia-Social and Behavioral Sciences*, 180, pp.345-351.
265. Ims, K. J. and Zsolnai, L. 2014. Ethics of social innovation. *Society and Business Review*.
266. Ishengoma, E. and Vaaland, T. I. 2016. Can university-industry linkages stimulate student employability?. *Education+ Training*, 58(1), pp.18-44.
267. Islam, T., Ahmad Kassim, N., Ali, G. and Sadiq, M. 2014. Organizational learning culture and customer satisfaction: The mediating role of normative commitment. *The learning organization*, 21(6), pp.392-404.
268. Ismail, T. 2016. Culture control, capability and performance: evidence from creative industries in Indonesia. *Asian Review of Accounting*, 24(2), pp.171-184.
269. Ison, R. L. 2008. Systems thinking and practice for action research.
270. Ison, R., Ison, R. L. and Russell, D. (Eds.). 2000. *Agricultural extension and rural development: breaking out of knowledge transfer traditions*. Cambridge University Press.
271. Ivascu, L., Cirjaliu, B. and Draghici, A. 2016. Business model for the university-industry collaboration in open innovation. *Procedia Economics and Finance*, 39, pp.674-678.
272. Jackson, M. C. 1982. The nature of soft systems thinking: The work of Churchman, Ackoff and Checkland. *Journal of applied systems analysis*, 9(1), pp.17-29.
273. Jackson, M. C. 1994. Critical systems thinking: beyond the fragments. *System Dynamics Review*, 10(2-3), pp. 213-229.

274. Jackson, M. C. 2006. Creative holism: a critical systems approach to complex problem situations. *Systems Research and Behavioral Science: The Official Journal of the International Federation for Systems Research*, 23(5), pp.647-657.
275. Jackson, M. C. 2009. Fifty years of systems thinking for management. *Journal of the Operational Research Society*, 60(sup1), pp.S24-S32.
276. Jankowicz, A. D. 2005. *Business research projects*. Cengage Learning EMEA.
277. Jepperson, R. and Meyer, J. W. 2011. Multiple levels of analysis and the limitations of methodological individualisms. *Sociological Theory*, 29(1), pp.54-73.
278. Jing, F. F. and Avery, G. C. 2008. Missing links in understanding the relationship between leadership and organizational performance. *International Business & Economics Research Journal (IBER)*, 7(5).
279. Johannessen, J. A. 2013. Innovation: a systemic perspective—developing a systemic innovation theory. *Kybernetes*, 42(8), pp.1195-1217.
280. Johansson-Sköldberg, U., Woodilla, J. and Çetinkaya, M. 2013. Design thinking: past, present and possible futures. *Creativity and innovation management*, 22(2), pp.121-146.
281. Johnson, R. B. and Onwuegbuzie, A. J. 2004. Mixed methods research: A research paradigm whose time has come. *Educational researcher*, 33(7), pp.14-26.
282. Jones, S. L. and Van de Ven, A. H. 2016. The changing nature of change resistance: An examination of the moderating impact of time. *The Journal of Applied Behavioral Science*, 52(4), pp.482-506.

283. Jongbloed, B. 2010. Funding higher education: a view across Europe. *Brussels, ESMU*.
284. Jongbloed, B. and Vossensteyn, H. 2016. University funding and student funding: international comparisons. *Oxford Review of Economic Policy*, 32(4), pp.576-595.
285. Joob, C., Welter, F., Richert, A. and Jeschke, S. 2011. Fostering innovative capability in Germany—the role of interdisciplinary research networks. In *Enabling innovation* (pp. 289-300). Springer, Berlin, Heidelberg.
286. Jørgensen, K. M. 2018. Spaces of performance: a storytelling approach to learning in higher education. *The Learning Organization*, 25(6), pp.410-421.
287. Kankovskaya, A. R. 2016. Higher Education for Sustainable Development: Challenges in Russia. *Procedia Cirp*, 48, pp.449-453.
288. Keeble, D. 2017. Collective learning processes in European high-technology milieux. *High-technology clusters, networking and collective learning in Europe* , pp. 199-229. Routledge.
289. Kezar, A. and Eckel, P. 2002. Examining the institutional transformation process: The importance of sensemaking, interrelated strategies, and balance. *Research in Higher Education*, 43(3), pp.295-328.
290. Khan, M. S., Khan, I., Qureshi, Q. A., Ismail, H. M., Rauf, H., Latif, A., and Tahir, M. 2015. The styles of leadership: A critical review. *Public Policy and Administration Research*, 5(3), pp.87-92.
291. Kim, S. H. and Huarng, K. H. 2011. Winning strategies for innovation and high-technology products management. *Journal of Business Research*, 64(11), pp.1147-1150.
292. Kimberly, J.R. and Evanisko, M.J., 1981. Organizational innovation: The influence of individual, organizational, and contextual factors on hospital

- adoption of technological and administrative innovations. *Academy of management journal*, 24(4), pp.689-713.
293. King, N. H. C. 2010. Interviews in Qualitative Research.
294. Knafl, K. A. and Breitmayer, B. J. 1989. Qualitative nursing research: a contemporary dialogue. *Qualitative Research*.
295. Kong, E., Secundo, G., Margherita, A., Elia, G. and Passiante, G. 2010. Intangible assets in higher education and research: mission, performance or both?. *Journal of intellectual capital*, 11(2), pp.140-157.
296. Kopainsky, B., Alessi, S. M. and Davidsen, P. I. 2011. Measuring knowledge acquisition in dynamic decision making tasks. *The 29th International Conference of the System Dynamics Society*, pp. 1-31.
297. Kozlowski, S. W. and Klein, K. J. 2000. A multilevel approach to theory and research in organizations: Contextual, temporal, and emergent processes.
298. Kramer, M. R. and Porter, M. 2011. Creating shared value. *Harvard business review*, 89(1/2), pp.62-77.
299. Krauss, S. E. 2005. Research paradigms and meaning making: A primer. *The qualitative report*, 10(4), pp.758-770.
300. Krishnamoorthy, V., Aishwaryadevi, A. S. and Bharathi, B. 2016. An examination of influence of higher education service quality on students' satisfaction: an Indian perspective. *Indira Management Review*, 10(2), pp.95-102.
301. Krücken, G., Kosmützky, A. and Torka, M. 2007. *Towards a multiversity?. Universities between global trends and national traditions*, p. 7. Bielefeld: transcript.
302. Kruss, G., McGrath, S., Petersen, I. H. and Gastrow, M. 2015. Higher education and economic development: The importance of building technological capabilities. *International Journal of Educational Development*, 43, pp.22-31.

303. Kunze, F., Boehm, S. and Bruch, H. 2013. Age, resistance to change, and job performance. *Journal of Managerial Psychology*, 28(7/8), pp.741-760.
304. Kuratko, D. F., Covin, J. G. and Hornsby, J. S. 2014. Why implementing corporate innovation is so difficult. *Business Horizons*, 57(5), pp.647-655.
305. Kvale, S. 2007. *Doing interviews*. Thousand Oaks, CA: Sage.
306. Kvale, S. and Brinkmann, S. 2009. *Interviews: Learning the craft of qualitative research interviewing*. Sage.
307. Lancaster, K. 2017. Confidentiality, anonymity and power relations in elite interviewing: conducting qualitative policy research in a politicised domain. *International Journal of Social Research Methodology*, 20(1), pp.93-103.
308. Lapadat, J. C. 2000. Problematizing transcription: Purpose, paradigm and quality. *International Journal of Social Research Methodology*, 3(3), pp.203-219.
309. Lapina, I., Roga, R. and Mürsepp, P. 2016. Quality of higher education: International students' satisfaction and learning experience. *International Journal of Quality and Service Sciences*, 8(3), pp.263-278.
310. Larsson, P., Dekker, S. W., & Tingvall, C. (2010). The need for a systems theory approach to road safety. *Safety science*, 48(9), pp.1167-1174.
311. Lattuca, L. R. and Pollard, J. R. 2016. Towards a conceptualization of faculty decision-making about curricular and instructional change. In *Organizing Academic Work in Higher Education* (pp. 109-128). Routledge.

312. Lazarova, M. 2015. Taking stock of repatriation research. *The Routledge companion to international human resource management*, pp.378-398.
313. Leavy, B. 2010. Design thinking—a new mental model of value innovation. *Strategy & leadership*.
314. Lee, S., Nam, Y., Lee, S. and Son, H. 2016. Determinants of ICT innovations: A cross-country empirical study. *Technological Forecasting and Social Change*, 110, pp.71-77.
315. Leedy, P. D. and Ormrod, J. E. 2005. *Practical research*. Pearson Custom.
316. Leišytė, L. and Sigl, L. 2018. Academic institutional entrepreneurs in Germany: navigating and shaping multilevel research commercialization governance. *Triple Helix*, 5(1), pp.1-23.
317. Lewis, J. M., Ricard, L. M. and Klijn, E. H. 2018. How innovation drivers, networking and leadership shape public sector innovation capacity. *International Review of Administrative Sciences*, 84(2), pp.288-307.
318. Lewis, J. M., Ricard, L. M., Klijn, E. H. and Figueras, T. Y. 2016. *Innovation in City Governments: Structures, Networks, and Leadership*. Routledge.
319. Lin, C. H. and Sanders, K. 2017. HRM and innovation: a multi-level organisational learning perspective. *Human Resource Management Journal*, 27(2), pp.300-317.
320. Liu, H. 2018. A brief analysis of learning organization practice from the perspective of the fifth discipline model theories—a case study of jatco (guangzhou). *American Journal of Industrial and Business Management*, 8(11), pp.2143-2157.

321. Lok, J. 2020. Theorizing the “I” in institutional theory: Moving forward through theoretical fragmentation, not integration. *The Oxford Handbook of Identities in Organizations*. Oxford University Press. DOI, 10.
322. Lundberg, C. C. 1989. On organizational learning: Implications and opportunities for expanding organizational development. *Research in organizational change and development*, 3(6), pp.126-182.
323. Lundvall, B. A. 2010. *National systems of innovation: Toward a theory of innovation and interactive learning*, 2. Anthem press.
324. Maclean, M., Harvey, C. and Gordon, J. 2013. Social innovation, social entrepreneurship and the practice of contemporary entrepreneurial philanthropy. *International Small Business Journal*, 31(7), pp.747-763.
325. Mair, J. and Marti, I. 2006. Social entrepreneurship research: A source of explanation, prediction, and delight. *Journal of world business*, 41(1), pp.36-44.
326. March, J. G. 1991. Exploration and exploitation in organizational learning. *Organization science*, 2(1), pp.71-87.
327. March, J. G. and Simon, H. A. 1958. *Organizations*.
328. Marginson, S. 2011. Higher education and public good. *Higher Education Quarterly*, 65(4), pp.411-433.
329. Mariana, D. R. 2015. Education as a determinant of the economic growth. The case of Romania. *Procedia-Social and Behavioral Sciences*, 197, pp.404-412.
330. Marinakou, E., Giousmpasoglou, C. and Paliktzoglou, V. 2016. The brain drain phenomenon in higher education in Greece: attitudes and opinions on the decision to immigrate.

331. Marshall, S. 2010. Change, technology and higher education: are universities capable of organisational change?. *Australasian journal of educational technology*, 26(8).
332. Marshall, S. J. 2018. Internal and external stakeholders in higher education. In *Shaping the University of the Future*, pp. 77-102. Springer, Singapore.
333. Marsick, V. J. and Watkins, K. E. 2003. Demonstrating the value of an organization's learning culture: the dimensions of the learning organization questionnaire. *Advances in developing human resources*, 5(2), pp.132-151.
334. Martín-de Castro, G. 2015. Knowledge management and innovation in knowledge-based and high-tech industrial markets: The role of openness and absorptive capacity. *Industrial Marketing Management*, 47, pp.143-146.
335. Mason, M. 2010. Sample size and saturation in PhD studies using qualitative interviews. *Forum qualitative Sozialforschung/Forum: qualitative social research*, 11(3).
336. Maurseth, P. B. 2019. Brain Drain or Brain Gain?. *Forum for Development Studies*, 46(1), pp. 195-202. Routledge.
337. Maxwell, R., Irwin, W. and Bennett, S. 2015. When education met innovation met employability: The birth of employability plus. *ECEL2015-14th European Conference on e-Learning: ECEL2015*, p. 347. Academic Conferences and publishing limited.
338. Mayring, P. 2000. Qualitative content analysis. *Qualitative Social Research*, 1 (2).
339. Mays, N. and Pope, C. 1995. Qualitative research: rigour and qualitative research. *Bmj*, 311(6997), pp.109-112.

340. McClure, K. R. 2015. Exploring curricular transformation to promote innovation and entrepreneurship: An institutional case study. *Innovative Higher Education*, 40(5), pp.429-442.
341. McLendon, M. K., Deaton, R. and Hearn, J. C. 2007. The enactment of reforms in state governance of higher education: Testing the political instability hypothesis. *The Journal of Higher Education*, 78(6), pp.645-675.
342. Meadows, D. H. 2008. *Thinking in systems: A primer*. chelsea green publishing.
343. Mele, C., Pels, J. and Polese, F. 2010. A brief review of systems theories and their managerial applications. *Service Science*, 2(1-2), pp.126-135.
344. Merton, P., Froyd, J. E., Clark, M. C. and Richardson, J. 2009. A case study of relationships between organizational culture and curricular change in engineering education. *Innovative Higher Education*, 34(4), pp.219-233.
345. Middlehurst, R. and Woodfield, S. 2006. Quality review in distance learning: Policy and practice in five countries. *Tertiary Education & Management*, 12(1), 37-58.
346. Middleton, C. 2000. Models of state and market in the 'modernisation' of higher education. *British Journal of Sociology of Education*, 21(4), pp.537-554.
347. Midgley, G. 1996. What is this thing called CST?. In *Critical systems thinking*, pp. 11-24. Springer, Boston, MA.
348. Miles, M. B., Huberman, A. M., Huberman, M. A. and Huberman, M. 1994. *Qualitative data analysis: An expanded sourcebook*. Sage.

349. Millmore, M. and Lewis, P. 2007. *Strategic human resource management: contemporary issues*. Pearson Education.
350. Mingers, J. and White, L. 2010. A review of the recent contribution of systems thinking to operational research and management science. *European journal of operational research*, 207(3), pp.1147-1161.
351. Miser, H. J. and Quade, E. S., eds. 1985. *Handbook of systems analysis: Overview of uses, procedures, applications, and practice*. New York, North-Holland.
352. Mok, K. H. 2019. Governance, Accountability and Autonomy in Higher Education in Hong Kong. *Transformations in Higher Education Governance in Asia*, pp. 153-169. Springer, Singapore.
353. Mok, K. H. and Neubauer, D. 2016. Higher education governance in crisis: a critical reflection on the massification of higher education, graduate employment and social mobility. *Journal of Education and Work*, 29(1), pp.1-12.
354. Moldovan, L. 2012. Integration of strategic management and quality assurance in the Romanian higher education. *Procedia-Social and Behavioral Sciences*, 58, pp.1458-1465.
355. Monat, J.P. and Gannon, T.F. 2015. What is Systems Thinking? A Review of Selected Literature Plus Recommendations. *American Journal of Systems Science*, 4(1), pp.11-26
356. Moon, H., Mariadoss, B. J., and Johnson, J. L. 2017. Collaboration with higher education institutions for successful firm innovation. *Journal of Business Research*.
357. Morel, N., Palier, B. and Palme, J. 2012. Beyond the welfare state as we knew it. *Towards a social investment welfare state*, pp.1-30.

358. Morse, J. M. 2000. Determining sample size.
359. Moulaert, F. 2016. Social innovation: Institutionally embedded, territorially (re) produced. *Social innovation and territorial development*, pp. 27-40. Routledge.
360. Mulgan, G., Tucker, S., Ali, R. and Sanders, B. 2007. Social innovation: what it is, why it matters and how it can be accelerated.
361. Munir, K. A. 2015. A loss of power in institutional theory. *Journal of Management Inquiry*, 24(1), pp.90-92.
362. Muresan, M. and Gogu, E. 2010. Universities--Drivers for Regional Innovation Culture and Competitiveness. *Online Submission*, 7(2), pp.35-44.
363. Nagy, S. G., Kováts, G. and Németh, A. O. 2014. Governance and Funding of Higher Education--International Trends and Best Practices. *Procedia-Social and Behavioral Sciences*, 116, pp.180-184.
364. Namada, J. M. 2018. Organizational learning and competitive advantage. In *Handbook of Research on Knowledge Management for Contemporary Business Environments*, pp. 86-104. IGI Global.
365. Nay-Brock, R. M. 1984. A comparison of the questionnaire and interviewing techniques in the collection of sociological data. *The Australian journal of advanced nursing: a quarterly publication of the Royal Australian Nursing Federation*, 2(1), p.14.
366. Naz, A. and Ahmad, E. 2018. Driving Factors of Globalization: An Empirical Analysis of the Developed and Developing Countries. *Business and Economic Review*, 10(1), pp.133-157.
367. Nelson, R. R. and Sidney, G. 1982. Winter. 1982. *An evolutionary theory of economic change*, pp.929-964.

368. Ng, P. T. 2004. The learning organisation and the innovative organisation. *Human Systems Management*, 23(2), pp.93-100.
369. Nicolás, J. C. O. and Harrison, T. 2018. Understanding the Context of Design for Social Innovations: A Methodological Case Study. *Handbook of Research on Ergonomics and Product Design*, pp. 301-324. IGI Global.
370. Nieth, L. 2019. Understanding the strategic ‘black hole’ in regional innovation coalitions: reflections from the Twente region, eastern Netherlands. *Regional Studies, Regional Science*, 6(1), pp. 203-216.
371. Nonaka, I., Byosiere, P., Borucki, C. C. and Konno, N. 1994. Organizational knowledge creation theory: a first comprehensive test. *International Business Review*, 3(4), pp.337-351.
372. Noor, K. B. M. 2008. Case study: A strategic research methodology. *American journal of applied sciences*, 5(11), pp.1602-1604.
373. Ntim, C. G., Soobaroyen, T. and Broad, M. J. 2017. Governance structures, voluntary disclosures and public accountability: The case of UK higher education institutions. *Accounting, auditing & accountability journal*, 30(1), pp.65-118.
374. OECD, 2010. European Commission.
375. Olsen, J. P. and Maassen, P. 2007. European debates on the knowledge institution: The modernization of the university at the European level. *University dynamics and European integration*, pp. 3-22. Springer, Dordrecht.
376. Oreg, S., Bartunek, J. M., Lee, G. and Do, B. 2018. An affect-based model of recipients’ responses to organizational change events. *Academy of Management Review*, 43(1), pp.65-86.

377. Ormerod, R.J. 2011. The relationship between operational research and systems thinking. *Journal of the Operational Research Society*, 62(1), pp.242–245.
378. Örtenblad, A. 2015. Towards increased relevance: context-adapted models of the learning organization. *The Learning Organization*, 22(3), pp.163-181.
379. Örtenblad, A. and Koris, R. 2014. Is the learning organization idea relevant to higher educational institutions? A literature review and a “multi-stakeholder contingency approach”. *International Journal of Educational Management*, 28(2), pp.173-214.
380. Ortiz-Villajos, J. M. and Sotoca, S. 2018. Innovation and business survival: A long-term approach. *Research Policy*, 47(8), pp.1418-1436.
381. Osipian, A. L. 2012. Education corruption, reform, and growth: case of post-Soviet Russia. *Journal of Eurasian Studies*, 3(1), pp.20-29.
382. Oxford English Dictionary, 2009.
383. Padgett, D. K. 2016. *Qualitative methods in social work research*, 36. Sage Publications.
384. Palos, R. and Veres Stancovici, V. 2016. Learning in organization. *The Learning Organization*, 23(1), pp.2-22.
385. Pantouvakis, A. and Bouranta, N. 2013. The link between organizational learning culture and customer satisfaction: Confirming relationship and exploring moderating effect. *The Learning Organization*, 20(1), pp.48-64.
386. Parra-Requena, G., Ruiz-Ortega, M. J. and Garcia-Villaverde, P. M. 2013. Social capital and effective innovation in industrial districts: dual effect of absorptive capacity. *Industry and Innovation*, 20(2), pp.157-179.

387. Parziale, F. and Scotti, I. 2016. Education as a resource of social innovation. *Sage Open*, 6(3), pp.1-9.
388. Patnaik, B., Beriha, G. S., Mahapatra, S. S. and Singh, N. 2013. Organizational learning in educational settings (technical): an Indian perspective. *The Learning Organization*, 20(2), pp.153-172.
389. Patterson, D. J. 1999. The diversity of eukaryotes. *the american naturalist*, 154(S4), pp.96-124.
390. Patton, M. Q. 1987. *How to use qualitative methods in evaluation*, 4. Sage.
391. Patton, M. Q. 2002. *Qualitative Research & Evaluation Methods*, 3rd edn. Sage Publications: Thousand Oaks, CA, USA.
392. Patton, M. Q. 2008. *Utilization-focused evaluation*. Sage publications.
393. Patton, M. Q. 2015. *Qualitative research & evaluation methods: Integrating theory and practice* (4th ed.). Thousand Oaks, CA: Sage.
394. Pelling, M., O'Brien, K. and Matyas, D. 2015. Adaptation and transformation. *Climatic Change*, 133(1), pp.113-127.
395. Peredo, A. M. and McLean, M. 2006. Social entrepreneurship: A critical review of the concept. *Journal of world business*, 41(1), pp.56-65.
396. Philliber, S.G., Schwab, M.R. and Samsloss, G. 1980. "Social research: guides to a decision making process". *Case Study Research – Design and Methods*, Peacock, Itasca, IL.
397. Phillips, W., Lamming, R., Bessant, J. and Noke, H. 2006. Discontinuous innovation and supply relationships: strategic dalliances. *R&D Management*, 36(4), pp.451-461.

398. Phillips, J.A.J., Deiglmeier, K. and Miller, D.T. 2008. Rediscovering Social Innovation. *Social Innovation Review*.
399. Pinheiro, R., Geschwind, L. and Aarrevaara, T. 2014. Nested tensions and interwoven dilemmas in higher education: The view from the Nordic countries. *Cambridge Journal of Regions, Economy and Society*, 7(2), pp.233-250.
400. Pinheiro, R., Geschwind, L. and Aarrevaara, T. 2016. Mergers in higher education. *European Journal of Higher Education*, 6(1), pp.2-6.
401. Plate, R.R. and Monroe, M. 2014. A Structure for assessing systems thinking. *The Creative Learning Exchange*, 23(1), pp.1–12.
402. Pol, E. and Ville, S. 2009. Social innovation: Buzz word or enduring term?. *The Journal of Socio-Economics*, 38(6), pp.878-885.
403. Ponnuswamy, I. and Manohar, H. L. 2016. Impact of learning organization culture on performance in higher education institutions. *Studies in Higher Education*, 41(1), pp.21-36.
404. Pope, C., Ziebland, S. and Mays, N. 2000. Qualitative research in health care: analysing qualitative data. *BMJ: British Medical Journal*, 320(7227), p.114.
405. Popescu, F. 2015. South African globalization strategies and higher education. *Procedia-Social and Behavioral Sciences*, 209, pp.411-418.
406. Porter, M. F. 1990. *The Competitive Advantages of Nations*. New York, Free Press.
407. Potter, W. J. and Levine-Donnerstein, D. 1999. Rethinking validity and reliability in content analysis.
408. Pucciarelli, F. and Kaplan, A. 2016. Competition and strategy in higher education: Managing complexity and uncertainty. *Business Horizons*, 59(3), pp.311-320.

409. Radinger-Peer, V. 2019. What influences universities' regional engagement? A multi-stakeholder perspective applying a Q-methodological approach. *Regional Studies, Regional Science*, 6(1), pp.170-185.
410. Ramos, T. B., Caeiro, S., Van Hoof, B., Lozano, R., Huisingh, D. and Ceulemans, K. 2015. Experiences from the implementation of sustainable development in higher education institutions: Environmental Management for Sustainable Universities. *Journal of Cleaner Production*, 106, pp.3-10.
411. Ranieri, R., and Ramos, R. A. 2013. After all, what is inclusive growth. *One Pager*, 188.
412. Rapley T. 2007. Doing conversation, discourse and document analysis. London; Thousand Oaks, CA; New Delhi; Singapore: Sage.
413. Rasiyah, R. 2017. The role of institutions and linkages in learning and innovation. *Institutions and Economies*, pp.165-172.
414. Reagans, R. and McEvily, B. 2003. Network structure and knowledge transfer: The effects of cohesion and range. *Administrative science quarterly*, 48(2), pp.240-267.
415. Ren, S., Eisingerich, A. B. and Tsai, H. T. 2015. How do marketing, research and development capabilities, and degree of internationalization synergistically affect the innovation performance of small and medium-sized enterprises (SMEs)? A panel data study of Chinese SMEs. *International Business Review*, 24(4), pp.642-651.
416. Renzetti, C. M. and Lee, R. M. 1993. Researching sensitive topics.
417. Rice, P.L. and Ezzy, D. 1999. Qualitative research methods: A Health Focus, 720. Melbourne.
418. Richards, L. 1999. *Using NVivo in qualitative research*. Sage.

419. Richmond, B. 1987. The strategic management forum: From vision to strategy to operating policies and back again. High Performance Systems Publications (3rd edition). 13, Dartmouth College Highway, Lyme, NH.
420. Richmond, B. 1994. Systems dynamics/systems thinking: Let's just get on with It. International Systems Dynamics Conference, Sterling, Scotland.
421. Richmond, B. 2000. *The " thinking" in systems thinking: Seven essential skills*. Pegasus Communications.
422. Richmond, B. 2001. An introduction to systems thinking, High Performance Systems: Watkinsville, GA.
423. Richmond, B. 2001. The "Thinking" in Systems Thinking: Seven Essential Skills Pegasus Communications.
424. Richmond, R. C. 2015. Although universities have resisted significant change for centuries, change is coming. A variety of forces are likely to influence the future of the academy, and most of these influences are coming from outside the traditional university structure. The forces that are changing universities are the demographic shift of students from predominantly male to predominantly female; the rapid increase. *Future of Higher Education: Perspectives from America's Academic Leaders*, 31.
425. Ritchie J. and Spencer L. 1994. Qualitative data analysis for applied policy research. In *Analysing Qualitative Data* (Bryman A. & Burgess G., eds), Routledge, London, pp. 173–194.
426. Rittel, H.W. and Webber, M.M. 1973. Dilemmas in a general theory of planning. *Policy sciences*, 4(2), pp.155-169.
427. Ritzer, G. 2011. *The McDonaldization of society* 6th Ed. Pine Forge Press.
428. Ritzer, G. 2012. Globalization. *The Wiley-Blackwell Encyclopedia of Globalization*.
429. Robson, C. 2002. *Real World Research*. 2nd edn. Oxford: Blackwell.
430. Rodrik, D. 1997. Globalization, social conflict and economic growth. *Conferencia de Raúl Prebisch. Ginebra, 24. Versión revisada (en inglés) disponible en <http://www.ksg.harvard.edu/rodrik/global.pdf>*.

431. Rodrik, D. 1999. The new global economy and developing countries: making openness work.
432. Rolfe, G. 2013. *The University in Dissent*, Abingdon: SRHE and Routledge.
433. Rook, L. 2013. Mental models: A robust definition. *The Learning Organization*, 20(1), pp.38-47.
434. Rosca, E., Reedy, J. and Bendul, J. C. 2018. Does frugal innovation enable sustainable development? A systematic literature review. *The European Journal of Development Research*, 30(1), pp.136-157.
435. Rosenhead, J.V. 1976. Some further comments on the social responsibility of operational research. *Operational Research Quarterly*, pp. 266-272.
436. Rossano-Rivero, S. 2018. Entrepreneurial behaviour of academics within the context of education.
437. Rourke, L., Anderson, T., Garrison, D. R. and Archer, W. 2001. Methodological issues in the content analysis of computer conference transcripts. *International journal of artificial intelligence in education (IJAIED)*, 12, pp.8-22.
438. Rousseau, D. M. 1985. Issues of level in organizational research: Multi-level and cross-level perspectives. *Research in Organizational Behavior*, 7, pp.1–37.
439. Rousseau, D. M. and House, R. J. 1994. “Meso organizational behavior: Avoiding three fundamental biases”. *Trends in organizational behavior*, 3, pp.13-30. John Wiley & Sons, New York.
440. Ruben, B. D. 2018. *Quality in higher education*. Routledge.

441. Russell, C., Gregory, M., Ciliska, D., Ploeg, J., Guyatt, G., Cohen, M. and Newman, M. 2005. Qualitative research. Mosby.
442. Saad, M., Guermat, C. and Brodie, L. 2015. National innovation and knowledge performance: the role of higher education teaching and training. *Studies in Higher Education*, 40(7), pp.1194-1209.
443. Salunke, S., Weerawardena, J. and McColl-Kennedy, J. R. 2019. The central role of knowledge integration capability in service innovation-based competitive strategy. *Industrial Marketing Management*, 76, pp.144-156.
444. Sánchez-Barrioluengo, M. 2014. Articulating the ‘three-missions’ in Spanish universities. *Research Policy*, 43(10), pp.1760-1773.
445. Sandelowski, M. 2000. Focus on research methods-whatever happened to qualitative description?. *Research in nursing and health*, 23(4), pp.334-340.
446. Santa, M. and Nurcan, S. 2016. Learning organization modelling patterns. *Knowledge Management Research & Practice*, 14(1), pp.106-125.
447. Santos, G. G. 2016. Career barriers influencing career success: A focus on academics’ perceptions and experiences. *Career Development International*, 21(1), pp.60-84.
448. Sari, A., Firat, A. and Karaduman, A. 2016. Quality assurance issues in higher education sectors of developing countries; Case of Northern Cyprus. *Procedia-Social and Behavioral Sciences*, 229, pp.326-334.
449. Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B. and Jinks, C. 2018. Saturation in qualitative research: exploring its conceptualization and operationalization. *Quality & quantity*, 52(4), pp.1893-1907.

450. Saunders, M. N. and Townsend, K. 2016. Reporting and justifying the number of interview participants in organization and workplace research. *British Journal of Management*, 27(4), pp.836-852.
451. Schilling, M. A. and Phelps, C. C. 2007. Interfirm collaboration networks: The impact of large-scale network structure on firm innovation. *Management science*, 53(7), pp.1113-1126.
452. Schön, D. A. 1995. Knowing-in-action: The new scholarship requires a new epistemology. *Change: The Magazine of Higher Learning*, 27(6), pp.27-34.
453. Schulz, M. 2003. Pathways of relevance: Exploring inflows of knowledge into subunits of multinational corporations. *Organization Science*, 14, pp.440-459.
454. Schumacher, J. and Gabriele, G. 1999. Product design and innovation: a new curriculum combining the humanities and engineering. *29th ASEE/IEEE Frontiers in Education Conference*, 1. San Juan, Puerto Rico, 10th-13th November 1999. USA. IEEE. Pp. 19-24.
doi:10.1109/FIE.1999.839115.
455. Schwarz, G. M. 2012. Shaking fruit out of the tree: Temporal effects and life cycle in organizational change research. *The Journal of Applied Behavioral Science*, 48(3), pp.342-379.
456. Scully, G. W. 1992. Constitutional environments and economic growth. Princeton, NJ: Princeton University Press.
457. Senge, P. 1990. *The Fifth Discipline: The Art and Practice of The Learning Organization*, Doubleday Publishers, New York, NY.
458. Senge, P. 1990. Peter Senge and the learning organization. *Rcuperado de*.
459. Senge, P. 2006. Systems citizenship. *The Leader of the Future* 2, 31.

460. Senge, P. M. 2014. *The fifth discipline fieldbook: Strategies and tools for building a learning organization*. Crown Business.
461. Senge, P. M. and Sterman, J. D. 1992. Systems thinking and organizational learning: Acting locally and thinking globally in the organization of the future. *European journal of operational research*, 59(1), pp.137-150.
462. Senge, P. M., Cambron-McCabe, N., Lucas, T., Smith, B. and Dutton, J. 2012. *Schools that learn (updated and revised): A fifth discipline fieldbook for educators, parents, and everyone who cares about education*. Crown Business, New York.
463. Senge, P., Cambron-McCabe, N., Lucas, T., Smith, B., Dutton, J. and Kleiner, A. 2000. *Schools That Learn*. Nicholas Brealey Publishing, London.
464. Senge, P., Kleiner, A., Roberts, C. and Ross, G. 1994. *The Fifth Discipline Fieldbook: Strategies and Tools for Building a Learning Organization*. Nicholas Brealey Publishing, London.
465. Senge, P., Smith, B., Kruschwitz, N., Laur, J., & Schley, S. (2010). *The Necessary Revolution: How Individuals and Organizations are Working together to Create a Sustainable World*. London: Nicholas Brealey Publishing.
466. Senior, B. and Swailes, S. 2010. *Organizational change*. London. *Financial Times/Prentice Hall*, pp.59-60.
467. Serrat, O. 2017. A primer on organizational learning. *Knowledge Solutions*, pp. 359-365. Springer, Singapore.

468. Sethibe, T. G. 2018. Towards a comprehensive model on the relationship between leadership styles, organisational climate, innovation and organisational performance. *International Journal of Innovation Management*, 22(02), 1850021.
<https://doi.org/10.1142/S1363919618500214>
469. Shapira, H., Ketchie, A. and Nehe, M. 2017. The integration of design thinking and strategic sustainable development. *Journal of Cleaner Production*, 140, pp.277-287.
470. Shaw, E. and de Bruin, A. 2013. Reconsidering capitalism: the promise of social innovation and social entrepreneurship?. *International Small Business Journal*, 31(7), pp.737-746.
471. Shaw, M. A. 2018. Public accountability versus academic independence: Tensions of public higher education governance in Poland. *Studies in Higher Education*, pp.1-14.
472. Short, J. C., Moss, T. W. and Lumpkin, G. T. 2009. Research in social entrepreneurship: Past contributions and future opportunities. *Strategic entrepreneurship journal*, 3(2), pp.161-194.
473. Siekierski, P., Lima, M. C. and Borini, F. M. 2018. International mobility of academics: brain drain and brain gain. *European Management Review*, 15(3), pp.329-339.
474. Silova, I. and Eklof, B. 2012. Education in Eastern and Central Europe: Re-thinking post-socialism in the context of globalization. *Comparative Education: The Dialectic of the Global and the Local*, Maryland: Lanham Rowman & Littlefield Publisher, pp.379-402.
475. Simons, H. A. 1962. “ The Architecture of Complexity. *Proceedings of the American Philosophical Society*, 106, pp.467– 82.
476. Simons H. A. 2009. Case study research in practice. Los Angeles: Sage.

477. Singer, C. J. 1959. A short history of scientific ideas to 1900.
478. Sitar, A. S. and Škerlavaj, M. 2018. Learning-structure fit part I: Conceptualizing the relationship between organizational structure and employee learning. *The Learning Organization*, 25(5), pp.294-304.
479. Skarzauskiene, A. 2010. “Managing complexity: systems thinking as a catalyst of the organization performance”, *Measuring Business Excellence*, 14(4), pp. 49-64.
480. Skyttner, L., 2005. *General systems theory: problems, perspectives, practice*. World scientific.
481. Slantcheva-Durst, S. 2010. Chapter 1: Redefining short-cycle higher education across Europe: The challenges of Bologna. *Community College Review*, 38(2), pp.111-132.
482. SLIM, 2004. ‘SLIM framework: social learning as a policy approach for sustainable use of water’ (see<http://slim.open.ac.uk>)
483. Smith, K. H. 2000. Innovation as a systemic phenomenon: rethinking the role of policy. *Enterprise and innovation management studies*, 1(1), pp.73-102.
484. Smith, K. 2005. Measuring Innovation. In *The Oxford Handbook of Innovation*, pp.169-177.
485. Smith, L. 1992. Ethical issues in interviewing. *Journal of Advanced Nursing*, 17(1), pp.98-103.
486. Smith, N.C., Drumwright, M. E. and Gentile, M.C. 2010. The new marketing myopia. *Journal of Public Policy & Marketing*, 29(1), pp.4-11.
487. Smolentseva, A. 2017. Universal higher education and positional advantage: Soviet legacies and neoliberal transformations in Russia. *Higher education*, 73(2), pp.209-226.

488. Sokol, A., Gozdek, A., Figurska, I. and Blaskova, M. 2015. Organizational climate of higher education institutions and its implications for the development of creativity. *Procedia-Social and Behavioral Sciences*, 182, pp.279-288.
489. Sotarauta, M. 2004. Strategy development in learning cities. *From classical Rhetoric towards dynamic Capabilities. Tampereen yliopisto. Alueellisen kehittämisen tutkimusyksikkö. Sente-työraportteja*, 8, 2004.
490. Soulsby, A. and Clark, E. 2007. Organization theory and the post-socialist transformation: Contributions to organizational knowledge. *Human Relations*, 60(10), pp.1419-1442.
491. Spector, J. M. and Davidsen, P. I. 2006. How can organizational learning be modeled and measured?. *Evaluation and program planning*, 29(1), pp.63-69.
492. Spendzharova, A. B. 2003. Bringing Europe in? The impact of EU conditionality on Bulgarian and Romanian politics. *Southeast European Politics*, 4(2-3), pp.141-156.
493. Stage, A. K. and Aagaard, K. 2019. Danish universities under transformation: Developments in staff categories as indicator of organizational change. *Higher Education*, pp.1-24.
494. Stage, A. K. and Aagaard, K. 2019. Danish universities under transformation: Developments in staff categories as indicator of organizational change. *Higher Education*, 78(4), pp.629-652.
495. Stake, R.E. 2003. 'Case Studies', in Denzin, N. and Lincoln, Y. eds. *Strategies of Qualitative Inquiry*. London: SAGE Publications.

496. Stalter, A. M., Phillips, J. M., Ruggiero, J. S., Scardaville, D. L., Merriam, D., Dolansky, M. A., ... and Winegardner, S. 2017. A concept analysis of systems thinking. *Nursing forum*, 52(4), pp. 323-330.
497. Stephens, M., Lux, M. and Sunega, P. 2015. Post-socialist housing systems in Europe: Housing welfare regimes by default?. *Housing studies*, 30(8), pp.1210-1234.
498. Sterman, J. 2010. *Business dynamics*. Irwin McGraw-Hill. New York.
499. Stiglitz, J. E. 2002. Towards a new paradigm for development: strategies, policies and processes.
500. Stinchcombe, Arthur. 1991. "The Conditions of Fruitfulness of Theorizing About Mechanisms in Social Science. *Philosophy of the Social Sciences*, 21, pp.367– 88.
501. Stouten, J., Rousseau, D. M. and De Cremer, D. 2018. Successful organizational change: Integrating the management practice and scholarly literatures. *Academy of Management Annals*, 12(2), pp.752-788.
502. Strategy for Development of Higher Education in The Republic of Bulgaria for the 2014- 2020 period, 2016.
503. Suddaby, R. 2010. Challenges for institutional theory. *Journal of management inquiry*, 19(1), pp.14-20.
504. Suddaby, R. 2015. Can institutional theory be critical?. *Journal of Management Inquiry*, 24(1), pp.93-95.
505. Sweeny, L. B. and Sterman, J. D. 2000. Bathtub dynamics: Preliminary results of a systems thinking inventory. In *International System Dynamics Conference, Bergen, Norway*.

506. Taha, A., V., Sirkova, M., and Ferencova, M. 2016. The impact of organizational culture on creativity and innovation. *Polish Journal of Management Studies, 14*.
507. Tang, B., Coret, A., Qureshi, A., Barron, H., Ayala, A. P. and Law, M. 2018. Online lectures in undergraduate medical education: scoping review. *JMIR medical education, 4(1)*, p.11.
508. Tarman, B. and Chigisheva, O. 2017. Editorial for special issue: Transformation of educational policy, theory and practice in post-soviet social studies education. *Journal of Social Studies Education Research, 8(2)*.
509. Teeroovengadam, V., Kamalanabhan, T. J., and Seebaluck, A. K. 2016. Measuring service quality in higher education: Development of a hierarchical model (HESQUAL). *Quality Assurance in Education, 24(2)*, pp.244-258.
510. Terjesen, S. and Patel, P. C. 2017. In search of process innovations: The role of search depth, search breadth, and the industry environment. *Journal of Management, 43(5)*, pp.1421-1446.
511. The European Education Directory, 2014.
512. The World Bank Group, 2015.
513. Thomas, A. R. and Lockett, M. 1979. Marxism and systems research: values in practical action. In *Proceedings of the 23rd Annual Conference of the International Society for General Systems Research*.
514. Thomas, D.R. 2006. A general inductive approach for analyzing qualitative evaluation data. *American journal of Evaluation, 27(2)*, pp.237-246.
515. Thompson, M. 2018. Social capital, innovation and economic growth. *Journal of behavioral and experimental economics, 73*, pp.46-52.

516. Thomsen, H. K. and Hoest, V. 2001. Employees' perception of the learning organization. *Management Learning*, 32(4), pp.469-491.
517. Thornhill, A., Saunders, M. and Lewis, P. 2009. *Research methods for business students*. Prentice Hall: London.
518. Tidd, J. 2001. Innovation management in context: environment, organization and performance. *International Journal of Management Reviews*, 3(3), pp.169-183.
519. Toma, J. D. 2010. *Building organizational capacity: Strategic management in higher education*. JHU Press.
520. Tomlinson, M. 2017. Student perceptions of themselves as 'consumers' of higher education. *British Journal of Sociology of Education*, 38(4), pp.450-467.
521. Tosey, P. and Mathison, J. 2008. Do organizations learn? Some implications for HRD of Bateson's levels of learning. *Human Resource Development Review*, 7(1), pp.13-31.
522. Tripl, M., Sinozic, T. and Lawton Smith, H. 2015. The role of universities in regional development: conceptual models and policy institutions in the UK, Sweden and Austria. *European Planning Studies*, 23(9), pp.1722-1740.
523. Trow, M. 2000. From mass higher education to universal access: The American advantage. *Minerva*, 37(4), pp.303-328.
524. Tsai, Y. and Beverton, S. 2007. Top-down management: an effective tool in higher education?. *International Journal of Educational Management*, 21(1), pp.6-16.
525. Tung, R. L. and Lazarova, M. 2006. Brain drain versus brain gain: an exploratory study of ex-host country nationals in Central and East

Europe. *The International Journal of Human Resource Management*, 17(11), pp.1853-1872.

526. Turner III, D. W. 2010. Qualitative interview design: A practical guide for novice investigators. *The qualitative report*, 15(3), pp.754-760.
527. Vaira, M. 2004. Globalization and higher education organizational change: A framework for analysis. *Higher education*, 48(4), pp.483-510.
528. van der Have, R. P. and Rubalcaba, L. 2016. Social innovation research: An emerging area of innovation studies?. *Research Policy*, 45(9), pp.1923-1935.
529. van Waarden, F. 2001. Institutions and innovation: The legal environment of innovating firms. *Organization Studies*, 22(5), pp.765-795.
530. Vianna, M., Vianna, Y., Adler, I., Lucena, B. and Russo, B. 2012. Design thinking: business innovation. *MJV Tecnologia Ltda, Rio de Janeiro*.
531. Viðarsdóttir, U. S. 2018. Implementation of Key Commitments and the Future of the Bologna Process. In *European Higher Education Area: The Impact of Past and Future Policies*, pp. 387-400. Springer, Cham.
532. Vögtle, E. M. 2019. 20 years of Bologna-a story of success, a story of failure. *Innovation: The European Journal of Social Sciences*, 32(4), pp.406-428.
533. Vögtle, E. M. and Martens, K. 2014. The Bologna Process as a template for transnational policy coordination. *Policy Studies*, 35(3), pp.246-263.
534. Von Bertalanffy, L. 1968. *General System Theory: Foundations, Development, Applications*. New York: Braziller.
535. Von Bertalanffy, L. 1972. The history and status of general systems theory. *Academy of management journal*, 15(4), pp.407-426.

536. Wakkee, I., van der Sijde, P., Vaupell, C. and Ghuman, K. 2019. The university's role in sustainable development: Activating entrepreneurial scholars as agents of change. *Technological Forecasting and Social Change*, 141, pp.195-205.
537. Waks, S. and Frank, M. 2000. Engineering curriculum versus industry needs-a case study. *IEEE Transactions on Education*, 43(3), pp.349-352.
538. Wang, C. L., and Ahmed, P. K. 2003. Organisational learning: a critical review. *The learning organization*, 10(1), pp.8-17.
539. Watkins, K. E. 2005. What would be different if higher educational institutions were learning organizations?. *Advances in Developing Human Resources*, 7(3), pp.414-421.
540. Watkins, K. E. and Marsick, V. J. 1993. *Sculpting the learning organization: Lessons in the art and science of systemic change*. Jossey-Bass Inc., 350 Sansome Street, San Francisco, CA 94104-1310.
541. Weldy, T. G., and Gillis, W. E. 2010. The learning organization: variations at different organizational levels. *The Learning Organization*, 17(5), pp.455-470.
542. West, J. and Bogers, M. 2011. Profiting from External Innovation: A Review of the Research. *2011 World Conference on Mass Customization, Personalization, and Co-Creation: Bridging Mass Customization and Open Innovation*.
543. Westbrook, B., Muehlfeld, K. and Weitzel, U. 2019. Selecting Legal Advisors in M&As: Organizational Learning and the Role of Multiplicity of Mental Models. *Journal of Management*, 45(5), pp.2193-2224.
544. Whetten, D. A., Felin, T. and King, B. G. 2009. The practice of theory borrowing in organizational studies: Current issues and future directions. *Journal of Management*, 35(3), pp.537-563

545. Whetten, D. A., Felin, T. and King, B. G. 2009. The practice of theory borrowing in organizational studies: Current issues and future directions. *Journal of Management*, 35(3), pp.537-563.
546. Wilkins, S. and Huisman, J. 2011. Student recruitment at international branch campuses: can they compete in the global market?. *Journal of Studies in International Education*, 15(3), pp.299-316.
547. Wimsatt, W., C. 2006. Reductionism and its heuristics: Making methodological reductionism honest. *Synthese*, 151(3), pp. 445-475
548. Windrum, P., Schartinger, D., Rubalcaba, L., Gallouj, F. and Toivonen, M. 2016. The co-creation of multi-agent social innovations: A bridge between service and social innovation research. *European Journal of Innovation Management*, 19(2), pp.150-166.
549. Woodman, R. W. 1989. Organizational change and development: New arenas for inquiry and action. *Journal of Management*, 15, pp.205-228
550. Wright, M. and Marlow, S. 2012. Entrepreneurial activity in the venture creation and development process. *International Small Business Journal*, 30(2), pp.107-114.
551. Wu, C. W. and Huarng, K. H. 2015. Global entrepreneurship and innovation in management.
552. Yavuz, M. and Gülmez, D. 2016. The assessment of service quality perception in higher education. *Egitim ve Bilim*, 41(184).
553. Yilmaz, H.H. and Kesik, A. 2010. Administrative Structure and Financial Issues in Higher Education, A Proposed Model for Improving Managerial Effectiveness in Higher Education in Turkey, *Journal of Finance*, Issue 158, pp. 126-128.
554. Yin, R. K. 2003. *Case Study Research, Design and Methods*. 3rd edn. Newbury Park: SAGE.
555. Yin, R. K. 2009. *Case study methods: Design and methods*.

556. Zahid, G. 2014. Role of Career Education Advisor/Expert and Teaching Quality in Student Employability Skills as the Outcome of Higher Education. *Mediterranean Journal of Social Sciences*, 5(27 P2), p.669.
557. Zahid, G. 2015. Globalization, Nationalization and Rationalization. *Procedia-Social and Behavioral Sciences*, 174, pp.109-114.
558. Zanello, G., Fu, X., Mohnen, P. and Ventresca, M. 2016. The creation and diffusion of innovation in developing countries: a systematic literature review. *Journal of Economic Surveys*, 30(5), pp.884-912.
559. Zappa, P. and Robins, G. 2016. Organizational learning across multi-level networks. *Social Networks*, 44, pp.295-306.
560. Zhu, C. 2015. Organisational culture and technology-enhanced innovation in higher education. *Technology, Pedagogy and Education*, 24(1), pp.65-79.
561. Zivkovic, J. 2012. Strengths and weaknesses of business research methodologies: Two disparate case studies. *Business Studies Journal*, 4(2), pp.91-99.