QUALITATIVE COMPARATIVE ANALYSIS FOR EU HIGHER EDUCATION AUTONOMY

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Abstract:

A question about the connection and configuration of different conditions are such as organizational leadership, human resources management, academic autonomy, and financial autonomy related to the university autonomy outcome in the higher education institutions. The article objective is to clarify the causal effect of these conditions and university autonomy outcome in EU universities. The qualitative comparative method with logical configuration was used to work with 23 EU university systems. It is found that the academic freedom does not greatly affect the comparison of university autonomy in Europe, because EU countries take academic autonomy for granted obviously at universities without creating certain conditions. The findings indicated the important relationship of a combination between organizational leadership and human resources management ORG [1] * HRM [1] or on different path, a combination of human resources management and financial autonomy HRM [1]* FIN [1]. It is interesting that the findings shows there is no symmetry of outcome for negative university autonomy, it can configurate from a combination of weak leadership and organizational and weak financial autonomy condition.

Keywords; university autonomy, higher education, QCA methods

Introduction

Universities play an important role in meeting the needs of today's emerging knowledge society (Snellman C.,L., , 2015, p.84). In addition to the traditional work of teaching, research and innovation, higher education institutions are tasked with a variety of roles and often face new challenges, these include growing student numbers, changing labor markets leading to the need for continued professional development as well as information technology in scientific revolution 4.0 and challenges to university autonomy in how to address those trends (Ibid.). The higher education system and policy are under the reform in all countries in the world, there is plenty university governance reforms have been taken place, both within the national system and within the institutions themselves, regarding the relationship between universities and public authorities and organizations within universities. While acknowledging that there are different models for these reforms, the university autonomy became important higher policy solution, it need to be clarified through a comparative EU universities have outlined the basic principles and conditions under which universities need to fulfill their mission and tasks properly. Promoting university autonomy as a core principle continues to be very relevant and important, as it supports the values of the university.

This paper focusses on comparative perspectives of university autonomy in EU countries. From literature review, the varied university autonomy outcome is related to the causal - effect

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relationships, on the theoretical framework of research, the outcome variable of university autonomy depends on four conditional variables which are organizational leadership, human resources management, academic autonomy, and financial autonomy of higher education institutions. The method of qualitative comparative analysis and TOSMANA software was mobilized to study the connection and combinations of four conditional variables; The data collected from 23 EU university system for the QCA work in the modelling and synthesis of the results.

Literature Review, Theoretical Framework and Methods
Literature Review

OECD (2003) given that universities in OECD countries enjoy considerable freedom to determine their own policies and priorities in a wide range of their activities. Clark (1983) agreed that the universities are still more influenced by the state, in others, by the self-governing community of scholars and market forces. In an observation about university governance in China, France and Germany characterized by the state control model (Dobbins et al., 2017; Ying et al., 2017). In this situation, some new concepts arising, institutions' academic and financial policies are decided by the universities themselves (Mora, 2010, p. 98). The state allocates finances to public universities, designates managerial ranks, and decides on student enrolment quotas, curriculum for degree programs, etc. (Neave, 2003, p. 146; Dobbins & Knill, 2017). Universities are given relatively few autonomous rights and are considered 'rational instruments employed to meet national priorities' (Dobbins et al., 2011, p. 670). It seems that the state model was originally rooted in the tradition of academic self-rule with an inseparable link between teaching and research. The scope of university autonomy is limited in public universities because of the state's interventions even though universities operate in the service of society and science, academic affairs are not affected by socioeconomic needs, as universities' activities are guaranteed.

Matei L., and Iwinska J. (2018) studied the diverging paths related to institutional autonomy and academic freedom, his studies focused on 'the evolution of institutional autonomy' on academic, financial, organizational issues,

EUA (2017) defines four dimensions of university autonomy: organizational leadership, *financial*, staffing, and academic. Orosz K. (2018)'s findings suggest that there is an overall lack of prominent, linear relationships among these dimensions, with the exception of '*staffing autonomy*' and '*academic autonomy*', which are significantly positively linked to each other. EUA (2023) given that promoting institutional autonomy as a core principle continues to be highly-relevant and important, as it supports university values for meaningful academic research and teaching.

Until now, the authors do not explain what connects these two dimensions conceptually and whether such a connection, in fact there is existing of a big question how is the path, association or combination or connection of other dimensions? In the other words, how is the varied outcome of university autonomy related to four conditional variables and its based institutional autonomy in EU universities. Wit (2020) discussed about the internationalization of higher education, whether the EU lessons learned in university autonomy can be replicated for developing countries.

Theoretical framework
University autonomy (outcome variable)

From the literature review, a robust model with explained outcome reflects varied university autonomy depends on four conditional variables including the organizational leadership autonomy, staffing autonomy, academic autonomy, financial autonomy. The university autonomy outcome in European universities coded as UAUTO has generally increased though some EU countries still grant their higher education institutions too little autonomy. It is especially important to emphasize the close interrelationship between the different areas of autonomy. If universities are constrained in their financial freedom of action, then other aspects of autonomy, e.g. organizational leadership, personnel and academic autonomy, for example may be severely limited by these implications.

It is therefore necessary to score the level of varied university autonomy, which is causally based on a holistic approach to university autonomy innovation, taking into account all the corollary aspects of university autonomy. The university autonomy outcome is perceived and evaluated as positive if its impact to produce high quality human resource for economy as well as evolution of university system.

Leadership and organizational autonomy

Assessing leadership and organizational autonomy, the level of organizational leadership autonomy in universities refers to a university's ability to determine its internal leadership and organization and decision-making processes. EUA (2023), this variable refers to the ability of a university to freely make decisions regarding its internal leadership and organizations such as to decide on executive leadership, decision-making bodies, legal entities and institutions, and internal academic structure. The degree of this autonomy is also based on the ability to independently select, appoint and dismiss the leaders and managers who are responsible for administration as well as determine the length of his or her term of office, They are often not guaranteed in all educational systems in European universities. Legal guidance and restrictions still apply in many EU countries by Law and Convention either guidance or approval by the regulator.

University governing bodies, which typically include a board of governors or council, a senate, or both can decide on long-term strategic issues. They are sometimes such as regulations and budgets, and academic matters, educational curriculum and staff promotions. External non-university members are included in governing, bodies, and thus they can participate in such fundamental institutional decisions. This variable is also related to institutional capacity, the capacity to create for-profit and non-profit legal entities and to determine internal academic structures are all directly related to an institution's ability to determine and pursue its academic and strategic direction as well as university strategic planning. The ability to create separate legal entities could also open up important new sources of funding for universities. The issues of organizational autonomy are mainly considered at the level of autonomy in choosing the leader, outsiders holding positions in the university, creating new organizations, and deciding on the academic structure. of that university (ibid.).

Personnel autonomy

EUA (2023) refers to the university's ability to decide freely on matters related to human resources management and development, including recruitment, salaries, dismissals and promotion, and capacity development. To compete in the global higher education environment, universities must be able to hire the most appropriate and qualified academic and administrative staff without external appointment or interference. This variable is perceived and measured by the system capacity. The ability to set key staff salaries is of prime importance when trying to attract an excellent international workforce and specialists who are not available in the domestic labor market. The regulations on civil service status held by university staff still prevents institutions in some European countries from setting salaries by their owned human resources management system. The ability to promote and fire personnel freely enhances an organization's flexibility, giving it a competitive advantage in personnel matters. The ability to promote staff on the basis of merit remains limited in some European higher education systems. Last but not least, HRM autonomy refers to a university's ability to recruit and manage human resources as it sees fit.

Academic autonomy

EUA (2023), it refers to a university's capacity to manage its internal academic affairs independently. This variable refers to the university's ability to decide on various academic issues, such as admission, academic content, quality assurance, introduction of degree programs and language of instruction. The ability to decide on overall numbers of student admission and establish admission criteria are fundamental aspects of academic autonomy. While the number of studying places has important implications for a university's profile and finances, the student selectivity contributes significantly to ensuring quality and student interests and the offered educational programs. EUA (2023) also specifies that the capacity to introduce academic programs without external interference and to choose the teaching language(s) allows the university to pursue its specific mission with flexibility. The choice of a free language of instruction may also be important in the context of the internationalization strategies (ibid.). Although quality assurance mechanisms are essential accountability tools, the involved processes can often be burdensome and bureaucratic. Thus, academic autonomy level depends on how universities can therefore be free to choose the quality assurance system. Finally, this conditional variable also be examined at the ability to design the content of educational courses professionally, considered as a fundamental academic freedom to grant.

Financial autonomy

EUA (2023) given that it refers to the ability of a university to manage its funds and allocate its budget independently. Financial autonomy refers to the ability of a university to freely decide on its internal financial matters. It perceived and evaluated on the ability to manage its funds independently allows universities to establish and execute on its strategic goals. EUA (2016),

European universities receive an important proportion of their funding from the state, but whether this funding is provided as a line item budget or a block grant, the extent to which it can be freely allocated to different budget lines and the length of the funding cycle are important aspects of financial independence. In additional, the ability to hold surpluses and borrow money in financial markets facilitates long-term financial planning and provides universities with the flexibility needed to carry out their diverse missions. Similarly, the capacity to own and sell buildings leased by universities allows them to determine their strategies. The ability to charge tuition opens up new sources of private funding, which accounts for a significant proportion of university budgets in some higher education systems. In these cases, the freedom to charge and regulate tuition levels is an important factor in determining university strategies.

Lacking of financial autonomy, insufficient funding can severely limit the benefits of university autonomy. EUA (2023), the economic crisis has deeply affected the sector, sometimes leading to setbacks in previously granted university autonomy. In some systems, national governments have returned to more direct steering mechanisms, while tighter public budgets have created more burdensome in reporting procedures. An observation that short-term responses to the crisis have also led to sharp cuts in public funding, placing intense financial pressure on universities (ibid). Valuing university autonomy is important, but its full benefits cannot be reaped without a firm commitment to adequate and stable university funding. Thus, it is critically important to develop a long-term vision of how more finance can be channeled into higher education activities. To maximize sustainability of funding through income diversification, however there is still a constant gap between formal autonomy – autonomy «on paper» – and the ability of a university to act truly independently.

Methods

Qualitative comparative analysis (QCA) was originally developed by Ragin C., (1987; 2000) for the purpose of formalizing comparative case study research with small and medium N data sets by applying the insights in-depth knowledge of set theory. Ragin originally addressed the field of comparative socio-political science. Analyzing university autonomy on the QCA qualitative comparative model, since its inception (Ragin 1987, Rihoux 2006, Do et al., 2017), QCA has been recognized by social scientists as a research method based on situation ideally suited to grasp the complexity of the cause. This essentially describes a situation where an outcome is the result of many different paths and combinations of conditions. Additionally, QCA requires rigorous and systematic comparison of selected cases and their configuration through Boolean logic and TOSMANA software-based analysis protocols. Based on causation, the complexity of the cause and the research design to provide a basis for thinking about empirical applications. The following sessions engage with QCA with Boolean algebra as an analytical method, starting with set theory and concepts such as necessary and sufficient conditions,
By QCA, researchers from many social science fields, working at different levels (Macro, Meso, Micro) and with datasets of different sizes have used the method adequately and contribute to

social development (Ragin 1987; Ragin et al., 1996; Rihoux et al. 2008, Do 2017, Rihoux et al., 2008). Like most other Small-N methods, QCA can combine a complex view of the university autonomy world with a cause-and-effect approach, thus it aims to explain the outcome of a particular case or a few cases, rather than looking for the pure impact of causes on a large number of cases (cause-effect approach) (Bennett et al., 2006).

QCA works on a concept of cause and effect, called multiple combined causes and effects. This retains a causal approach configuration and the conditional variables which are considered and evaluated in the context of other related conditions and are not evaluated for their net impact. QCA is also characterized by a type of logic such as it studies social phenomena in terms of different categories or types, more specifically, it identifies the various links of conditions, or 'causal pathways', that lead to a certain outcome. What sets QCA apart from other case-oriented methods? It is the use of Boolean algebra and insights from set theory with deep knowledge of cases to formalize comparison and elucidate the complexity of causation (Berg-Schlosser et al. 2008). Boolean algebra allows to derive the maximum number of systematic university autonomy comparisons that can be made regarding the presence or absence of the properties of interest in the cases under analysis. The main advantage of using Boolean algebra is that it allows us to define schemes of multiple combined causal relations and as a result also to consider conditions of university autonomy for which it alone is not sufficient or necessary (Schneider et al., 2007).

Results and Discussion: QCA Modelling for EU University Autonomy

University autonomy (coded as UAUTO) depends on 04 important conditional variables including leadership and organizational autonomy, human resources management autonomy (staffing autonomy), financial autonomy, academic autonomy. In the model, the coded UAUTO depends causally upon the combination of these conditional variables. We can code and put them into the TOSMANA's analysis as follows: Leadership and organizational autonomy: ORG; Autonomy in human resources management: HRM; Financial autonomy: FIN; Academic autonomy: ACA.

Data set from 23 EU countries

University autonomy research data collected in 23 EU countries including: Poland, Slovakia, Slovenia, Czech Republic, Estonia, Latvia, Hungary, Finland, Denmark, Lithuania, Malta, Sweden, Luxembourg, France, Portugal, Germany, Austria, Netherlands, Belgium, Spain, Italy, Greece, Croatia. These case studies are analyzed for qualitative comparison through the QCA model, a binary model that is convenient for studying the conditional variables. Data collection from the Scorecard 2008-2023 survey provides a comprehensive comparative analysis of the performance of university autonomy in these 23 EU higher education systems. Findings across four dimensions of university autonomy are such as organizational leadership, financial, human resources management, academic autonomy. Thess Scorecards supports evidence-based dialogue on this important topic 'university autonomy'. This allows for specific benchmarking of policy instruments such as national legal frameworks as well as the exchange of good practices. The educational information in 23 EU countries were assisted by the SGI governance indicators

(https://www.sgi-network.org/).

Table 1: Summary of national education development indicators

Nation	Sum of higher education indicators (from SGI's source)	Nation	Sum of higher education indicators (from SGI's source)
Poland	**5.6**	Luxembourg	**6.1**
Slovakia	**5.3**	France	**6.8**
Slovenia	**7.1**	Portugal,	**5.9**
Czech	**6**	Germany	**7.2**
Estonia	**8**	Austria	**5.9**
Latvia	**5.9**	Netherlands	**6.4**
Hungary	**4.4**	Belgium	**6.3**
Finland	**7.6**	Spain	**7.1**
Denmark	**6.9**	Italia	**5.9**
Lithuania	**6.6**	Greece	**5.3**
Malta	**5.7**	Croatia	**5.6**
Sweden	**7.4**		

Source: *the SGI governance indicators (https://www.sgi-network.org/).*

According to csQCA model analysis, the data used by TOSMANA[2] software to produce this true table analyzing binary variables (Table 2) with 10 combinations of interactions between 04 conditions that form a model of university autonomy in different countries. There are 5 combinations with [1] output corresponding to 12 cases and 05 combinations with [0] output corresponding to 11 cases. Looking at this true table shows us that each combination interacts with 1 case or more than 1 actual case. TOSMANA software does not recognize the detail of case studies, but it clarifies the combinations identified in these cases.

Table 2: Truth table of the Boolean Configuration

ID	ORG	HRM	ACA	FIN	UAUTO
Czech, Malta	0	0	1	0	0
Greece	0	0	1	1	0
Latvia, Portugal	0	1	0	0	0
Poland, Slovakia, Hungary, Austria, Italy	0	1	1	0	0
France, Belgium, Spain	0	1	1	1	1
Croatia	1	0	1	0	0
Slovenia	1	0	1	1	1
Luxembourg	1	1	0	1	1

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[2] *https://compasss.org/*

Estonia, Lithuania, Netherlands	1	1	1	0	1
Finland, Denmark, Sweden, Germany	1	1	1	1	1

Boolean minimization

TOSMANA software minimized these combinations, using the Boolean minimization algorithm according to 2 groups of combinations [1] and [0], the research run the procedure 2 times, once for the combinations [1]] and then for the combinations [0]. It is important to repeat the procedure with both types of combinations, because randomness in social reality does not always have cause-and-effect symmetry.

Minimization of the [1] Configuration
(Without logical remainders)

Firstly, the procedure runs the model with the combinations [1] without observations, the results give us the following formula (Set Formula 01):

ORG * ACA * FIN + (Slovenia+Finland, Denmark,Sweden, Germany)

ORG * HRM * ACA + (Estonia,Lithuania,Netherlands+Finland,Denmark,Sweden,Germany)

ORG * HRM * FIN + (Finland,Denmark,Sweden,Germany+Luxembourg)

HRM * ACA * FIN (Finland,Denmark,Sweden,Germany+France,Belgium,Spain)

➔ **Positive university autonomy**

This is a descriptive interpretation formula because it does not go into detailed analysis of observed cases. There are including 04 paths that can be combined for positive university autonomy outcomes linked to [1] outcome.

According to Formula 1 above can be read as follows: The positive results of university autonomy can be the outcome of the combination of the following conditions:

- A combination of 03 positive conditions are strong leadership and organizational and strong academic autonomy and strong financial autonomy can generate a high degree of university autonomy [ORG [1] * ACA [1] * FIN [1]]. Or:
- A combination of 03 positive conditions are strong leadership and organizational leadership with strong human resources management and positive academic autonomy [ORG [1] * HRM [1]* ACA [1]]. Or:
- A combination of 03 conditions are strong leadership and organizational and strong human resources management and positive financial autonomy [ORG [1] * HRM [1]* FIN [1]]. Or:
- A combination of 03 conditions are strong human resources management and positive academic freedom and strong financial autonomy [HRM [1] * ACA [1] * FIN [1]]

Realizing that human resources management can be reduced from TOSMANA analysis for EU university autonomy, the remaining conditions are strong organizational leadership, academic freedom, and financial autonomy that play a fundamental role in university autonomy. Analyzing each combination of formulas associated with the 23 EU countries, it shows that the first combination [ORG[1] * ACA [1]* FIN[1]] corresponds to 6 countries: Slovenia and Finland, Denmark, Sweden, Germany.

The second group of the combinations [ORG[1] * HRM[1] * ACA[1]] corresponds to Estonia, Lithuania, Netherlands and Finland, Denmark, Sweden, Germany within 4 university autonomy conditions. The third group of the combination [ORG[1]*HRM[1]*FIN[1]] corresponds to countries including Finland, Denmark, Sweden, Germany and Luxembourg. The last group of combinations [HRM[1]*ACA[1]*FIN[1]] corresponds to the countries Finland, Denmark, Sweden, Germany and France, Belgium, Spain.

We can see Germany, or Finland are presented in these formulas. Therefore, it turned to analyze in depth to the level of contribution of 04 conditional variables to university autonomy in these countries. The case knowledge can be built from these 02 cases of university autonomy. In fact, these combinations are still very complicated, accounting for up to 03 conditions. It is unable to identify important conditions that affect the level of positive university autonomy in these EU countries. However, in reality, the above formulas also show that the conditional variables of leadership and organizational and human resource development management play an important role in university autonomy in EU countries.

Minimization of the [0] Configuration
(Without logical remainders)

In the next step, we repeated the same procedure on TOSMANA with weak university autonomy [0] combinations, also excluding the observation cases. The results obtained are the following model (named Formula 2):

$$Org [0] * HRM [1] * fin [0] \ + \quad Org \ [0] \ * \ hrm[0] \ * \ ACA[1] \ + \quad Hrm [0] * ACA [1] * fin [0]$$

(Poland,Slovakia,Hungary,Austria,Italy+ Latvia,Portugal) (Czech,Malta+Greece) (Czech,Malta+Croatia)

1, [0]. Consider the first combination org * HRM * fin) with country casesPoland, Slovakia, Hungary, Austria, Italy and Latvia, Portugal, org*hrm*ACA) correspond to 03 country cases: Czech, Malta + Greece and hrm*ACA * fin) correspond to 03 country cases: Czech, Malta + Croatia. [0].

Minimization of the [1] Configuration
(With logical remainders)

Solving research problems with Formula 1 and Formula 2 which are very complicated and do not achieve a generalization. To satisfy the requirements to the research problems, it is necessary to run TOSMANA with the observation case "Logical remainders" included. According to Venn

diagram 1, it shows that there are a number of blue areas representing cases where countries have better output [1] results represented for positive outcome of university autonomy.

The result is Formula 03 below:

ORG [1] * HRM [1] +	ORG[1] * FIN[1] +	HRM [1]* FIN [1]
(Estonia,Lithuania,Netherlands+Finland,Denmark,Sweden,Germany+Luxembourg)	(Slovenia+Finland,Denmark,Sweden,Germany+Luxembourg)	(Finland,Denmark,Sweden,Germany+Luxembourg+France, Belgium,Spain)

ORG * HRM → Positive university autonomy **(Formula 4)**
ORG * FIN → Positive university autonomy **(Formula 5)**
HRM * FIN → Positive university autonomy **(Formula 6)**

HRM[1] * FIN[1]The Finnish higher education system consists of two types of institutions: universities ('Yliopisto') and universities of applied sciences ('Ammattikorkeakoulu'). Universities primarily provide higher education based on research, while universities of applied sciences focus on applied research and offer educational programs at bachelor's and master's degree levels (EUA, 2023).

From data in EUA (2023), German Universities are research - intensive institutions. Each Land (federated state) has its own regulatory framework for higher education institutions. Academic autonomy receives very high score in evaluation. It is evidence that the admission to bachelor's degree programs is co-regulated by external authorities and universities. New bachelor's and master's degree programs must be submitted for accreditation before they can be introduced unless a university is allowed to self-accredit its programs. Universities can open new doctoral programs without prior accreditation. External quality assurance is very good such as German public universities can choose between program accreditation, 'system' accreditation and an 'alternative procedure' (all done by the 'Akkreditierungsrat', accreditation council). Universities can select their quality assurance provider, including foreign agencies.

1.   ORG{0}HRM{1}ACA{0}FIN{1}
2.   ORG{1}HRM{0}ACA{0}FIN{1}
3.   ORG{1}HRM{1}ACA{0}FIN{0}

These hypotheses are seen in Venn diagram 1 (Via TOSMANA software), the solutions are shown in 03 combinations observed in the output [1] for effective university autonomy based on the combination of 04 conditions related to university autonomy.

Minimization of the [0] Configuration
(With logical remainders)

Running the same procedure for TOSMANA software for [0] given the following results:

org *hrm+	org * fin +	hrm * fin
(Czech,Malta+Greec	(Poland,Slovakia,Hungary,Austria,Italy+Czech,M	(Czech,Malta+Croati

e)	alta+Latvia,Portugal)	a)

org[0] *hrm [0] (Formula 7)
org [0] * fin [0] (Formula 8**)** ➔ hrm [0]* fin [0] (Formula 9)the Czech Republic, Malta+Greece
Poland, Slovakia, Hungary, Australia, Italy + Czech, Malta + Latvia, Portugal
Czech,Malta+Croatia, weak outcome

1/ $ORG\{0\}HRM\{0\}ACA\{0\}FIN\{0\}$

2/ $ORG\{0\}HRM\{0\}ACA\{0\}FIN\{1\}$

3/ $ORG\{1\}HRM\{0\}ACA\{0\}FIN\{0\}$

It is observed that several combinations at pink Venn Diagram, these formulas reflected whatever important conditions can exist independently, they are not sufficient to ensure the positive university autonomy. The simplified hypothesis also clarifies that university autonomy comes from a group of conditional variables that ensure to generate positive university autonomy.

Systhesis

The above QCA shows a comprehensive picture comparing university autonomy in EU countries. Conditional variables for university autonomy are from organizational leadership, human resources management, academic freedom, and financial autonomy are all important. However, academic freedom does not greatly affect the comparison of university autonomy in Europe, because EU countries take academic autonomy for granted obviously at universities without creating this certain condition. Thus, it means that we should consider the academic autonomy is obvious in EU university autonomy. As returning to specific cases such as Finland, Germany, Netherlands, France, Belgium…, we can see the university autonomy is highly appreciated in all four conditional variables. Even in higher education policy, the concept of university autonomy does not exist, it is quite obvious though German lecturers in all states are state civil servants.

The findings indicated the important relationship of a combination between organizational leadership and human resources management or on different path, a combination of human resources management and financial autonomy. It is interesting that the findings shows there is no symmetry of outcome for negative university autonomy, it generated from a combination of weak leadership and organizational condition and weak financial autonomy condition. Studying specific cases including Finland, Denmark, Sweden, Germany + Luxembourg + France, Belgium, Spain shown that these countries all have a long-standing university education system, the convergence of highly developed economic condition with developed science and technology associated with positive human resources management condition with additional good financial autonomy condition which can ensure positive university autonomy.

Back to case knowledge, Sweden is relatively typical. Sweden has a uniform higher education system regulated by the Swedish Higher Education Act (1992:1434). Most higher education institutions are public (EUA 2023 p.71). We saw the education policy is at the top of the political agenda in Sweden because that the economy depends heavily on knowledge industries for

economic growth and international competitive advantage. For this reason, the quality of higher education is a major concern for politicians and businesses. To improve the quality of the Swedish higher education system, the National Agency for Education (Skolverket) operates seven national development programs focusing on areas such as digitalization. Considerable resources are also channeled into higher education research, with the Swedish Institute for Educational Research (www.skolfi.se) acting as a main funder. Human resource policies have changed in Swedish universities, the lecturers need to have appropriate professional pedagogical qualifications, the government introduced national certification for lecturers in 2011. Only certified lecturers are qualified for educational conditions for assuming permanent positions.
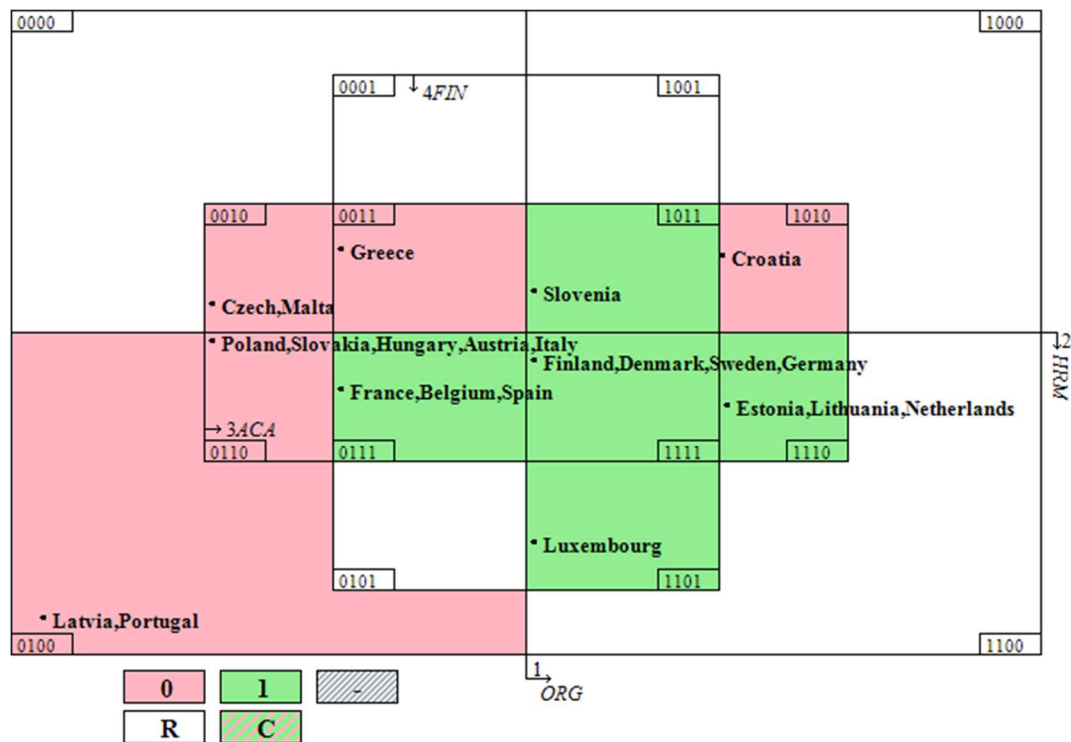
Venn Diagram: Solution for [1] outcome "positive university autonomy" with observed cases

Swedish higher education policy concerns equitable access to higher education system. Education policy has done quite well in this regard. If anything, the system is "too fair" in that the requirements to get into some programs within the university are so low that essentially anyone who applies gets in, which can cause problems. create a "race to the bottom" in higher education standards. However, equitable access to adult education has been achieved to a very large extent. Finally, the Swedish government has invested in more higher education institutions and provided additional financial support to prospective students as part of its response to the pandemic. Meanwhile, education remains at the top of the political agenda, although performance problems continue to persist.

In the case of Denmark, the higher education under the Danish Act on Universities, spending in Denmark is among the highest in the OECD. The organizational autonomy and staffing autonomy

condition are all strong conditions so they contribute much for the positive outcome while these two conditions of financial and academic conditions are medium high. Higher education is on the political agenda, but challenges remain regarding student admission and lifelong educational issues. Danish universities have been under pressure to shorten study hours and target students with market business-oriented educational programs. Recent efforts have aimed to ensure more geographically balanced access to educational institutions, but the extent to which this affects educational quality remains a subject of debate. Since the year 2016, the higher education has been affected by the so-called priority contributions (omprioritetsbidrag), which reduced the education budget by 2%. The Social Democratic government has announced that it can end this annual savings target and redirect funds back into the education system though the correct mechanism is yet to be determined.

Conclusions

The csQCA allows studying conditional variables that affected university autonomy. This method is more approach appropriate for small-N a problem about 10-50 cases while conditional variables less than 6 to be the most relevant to study university autonomy. The combination of the conditional variables are organizational leadership, human resources management, academic autonomy, and financial autonomy of higher education institutions can decide the varied university autonomy. The positive university autonomy outcome can be properly ensured and maintained from pushing these conditions in generalization.

The findings in EU higher education shed a light on university autonomy governance, especially it is very significant for the higher education policy design for university autonomy. In the higher education policy making, we need to pay high attention to strong conditions including organizational leadership, human resources management, academic autonomy, and financial autonomy. From QCA, if strong condition is monopoly, it could not produce positive university autonomy outcome. The combination of strong organizational leadership and strong financial autonomy, strong human resources management and financial autonomy can produce the positive university autonomy outcome. On the contrary, university autonomy can not be achieved without strong organizational leadership condition and strong financial autonomy. Although the results of research findings are not symmetrical, it shows that financial autonomy is always a very important condition for university autonomy. However, the alone existing of financial autonomy condition could not produce positive university autonomy as expected. In the internationalization of higher education, these lessons learned from EU university can be replicated for university autonomy in the developing countries.

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