Chapter 16

Component 2 (Meso): Qualitative Comparative Analysis (QCA)

This chapter comprises three sections. The first explains the QCA research model logic after a brief introduction. The second introduces the QCA methodology. The third presents the QCA results for competitiveness and corruption and focuses on the four case studies discussed here.

QCA: A Brief Introduction

QCA is a causal approach situated between qualitative and quantitative methods (Giugni & Yamasaki, 2009; Ragin, 1987; Rihoux, 2003). QCA is appropriate for studies involving small (5–55) observations or samples (Rihoux & Ragin, 2009). However, studies with a large number of samples also exist (Schneider & Wagemann, 2012).

Unlike regression analyses, QCA is *not* a statistical technique that focuses on the likelihood of the relations among variables. Instead, it is a method based on Boolean logic, rooted in set theory, and founded on the notions of sufficiency, the necessity of conditions, and conjunctural causation (Bara, 2014, p. 707; Ragin, 2000). The *necessary* conditions for an outcome are more the exception than the rule in the social sciences. Therefore, alternative combinations of conditions, which are jointly *sufficient* to explain the outcome, can be more significant (Ragin, 2000).

QCA assumes combinatorial and multiple causalities. It means that in QCA an outcome results from factors that react simultaneously with other conditions through several possible paths (Giugni & Yamasaki, 2009; Ragin, 1987). As Giugni and Yamasaki (2009) observe, QCA implies that causality is multiple and that various “pathways” lead to a specific outcome. Thus, a phenomenon must not necessarily require one single cause (or set of causes). Furthermore, causality is conjunctural, which means that conditions interact “in concert” or “chemically” with each other. Consequently, causality is combinatorial rather than additive (Mill; Becker as cited in Giugni & Yamasaki, 2009, p. 471).

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Therefore, QCA enables distinguishing paths to success from paths to failure, which do not necessarily mirror each other (Schneider & Wagemann, 2012, p. 8). Likewise, QCA allows identifying configurations of factors (conditions—in this case, theories explaining prosperity differences—see Chap. 5) leading to an outcome (e.g. *transparency* and *competitiveness*).

Furthermore, QCA bases its logic on set memberships. Whether a country experiences high levels of corruption, for instance, can be expressed as a question of set membership: Is country X a member of those states that remain transparent/competitive or not? QCA clusters countries into affinity groups and enables nested case studies to be conducted. It also allows the explanation of actual circumstances in the investigated countries. QCA facilitates understanding differences and similarities, as well as causal mechanisms, through within-case and inter-case comparisons (Ragin, 2003).

Moreover, this study applies the fuzzy-set variant of QCA (fsQCA), which allows cases to have varying degrees of set membership (Schneider & Wagemann, 2012, p. 13). It means that fsQCA capture empirically “different shades of grey” instead of “dividing the world into black and non-black” to inform the analysis and interpretation of results (Schneider & Wagemann, 2012, p. 13). A case does not always have to be a complete member (or a complete non-member) of a group; it may be also a partial member of a set. The membership scores may drop at any point between the two extremes (i.e. between the 0-full non-membership value and the 1-full membership value) (Schneider & Wagemann, 2012, pp. 13–14).

In sum, QCA helps to find explanations for outcomes based on associations of necessity and sufficiency. It therefore allows comparing and analysing different indicators associated with theories of prosperity and their causal effect on the outcome.

I apply QCA to examine which combinations of conditions (for example, of different variables linked to prosperity theories) associate regularly with transparency/competitiveness or, on the contrary, with corruption. The analysis covers 65 countries in Europe and the Americas (see Appendices 3–5 and Supplementary Materials).

16.1 QCA Research Model

Appendix 3 contains a detailed model and definitions of the conditions, outcome, sources, and qualitative anchors. Below, I merely briefly explain the underlying rationale. I followed a mixed methods research approach (quantitative and qualitative) and I based the variables selection on the primary prosperity determinants identified quantitatively by theories from different fields (Fig. 16.1).

The database with prosperity variables in different countries constitutes the outcome (*Competitiveness: GCI* and *Corruption: CPI*). On the other hand, the data of the various theories of prosperity (*Environment Performance (EPI)*, *Religion population*, *State Religion Legal Origin*, *Institutions*, *Ethnicities*) constitute the

	Category (prosperity theory associated)	Subcategory / (Results group)	Main Theoretical discussion related to outcome	
Conditions	Religion	Christian denomination (proportion in population) / (1)	From Weber (1905) to Becker et al. (2016)	<p>The three following works analyse all the categories:</p> <p>1. La Porta, et al. (1999); 2. Acemoglu & Robinson, (2012); 3. Michalopoulos & Papaioannou, (2017):</p> <p>However, they consider institutions and outcomes mainly from an economic perspective (i.e. excluding Concordats with the Vatican as institutions).</p> <p>Likewise, these three works analyse culture in its narrow form of religious determinism on culture (adherents).</p>
	Institutions	Agreements with the Vatican / (all 5)	Witte (2002); Miller (2012); Cook (2012)	
		State religion / (2)	(Barro and McCleary, 2005)	
		Legal origin / (3)	(La Porta et al., 1999); (Merryman & Pérez, 2007)	
	Environment and geography / (all 5)		(Diamond, 1997); (Sachs, 2001; 2003)	
	Cultural determinants (other than religion)	Main Languages fractionalisation / (4)	(Hofstede, 2001); (Alesina et al., 2003)	
		Main Ethnical fractionalisation / (5)	(Alesina et al., 2003)	
Outcome	Competitiveness / (all 5)		(Grim, Clark , & Snyder , 2014)	
	Corruption / (all 5)		(Rose- Ackerman, 2006); (Chase, 2010)	

Fig. 16.1 Categories of conditions and outcome and principal theoretical works (Source: Author's figure)

causal conditions (for the conditions and outcomes of this study, see Fig. 16.1 or Appendix 3).

Extensive empirical research supports the entire set of theories interrelated here (see Part III; Fig. 16.1, Appendix 3). Further, the whole set of theories robustly explains the prosperity differences in the examined countries. Indicators were chosen to consider the theoretical discussions related in Part III and Fig. 16.1. These were derived from a diverse range of publicly available sources. The latest available data for the indicators provided a picture of present-day reality (2016 reports; this is analogous to the quantitative part, i.e. Chap. 15). However, not all the variables were available in 2016 (none, however, was older than 20 years). Appendix

3 contains the databases and sources used, as well as a more detailed explanation of each indicator.

The different years of publication of the original data sources are not a significant problem here. I have previously discussed the issue of long-term persistence (centuries) of countries' relative prosperity performance as well as religious and environment variables (Chap. 8 and Sect. 15.2.1.1). Besides providing theoretical support, the previous quantitative component of this research (regressions) used cross-validation, trees, and an automated method of variables selection (Chap. 15). This confirmed the crucial variables, thus making data selection more objective.

Below, I explain how outcomes and causal conditions were calibrated.

16.2 Qualitative Comparative Analysis Methodology

Qualitative Comparative Analysis (QCA) is used to analyse both quantitative and qualitative data, thus enabling causal inferences. The QCA methodology allows for up to seven variables to be tested for their impact on an outcome variable. A truth table is built from qualitative, quantitative, or both kinds of data to show all possible configurations of those variables. The truth table is then analysed algebraically (rather than statistically) to generate one or more statements identifying various conjunctions of sufficient conditions for the outcome to have occurred (Bazeley, 2012, p. 823).

16.2.1 Calibration of Outcome and Causal Conditions

Outcome requiring explanation: The corruption and competitiveness of different countries (see Chaps. 3–4).

Relevant causal conditions: Theories discussed in the theoretical framework (see Chaps. 5–12; Appendix 3 discusses calibration in detail).

The calibration process followed the strategy described by Schneider and Wagemann (2012). The authors advise that empirical evidence and theoretical information must be used to calibrate fuzzy-set membership scores. Also, the calibration process may be guided by established social science information, obvious evidence, and the researchers' data. Likewise, quantitative data parameters and statistical distributions can be helpful in terms of calibration (p. 41).

Accordingly, the following aspects informed the calibration of the fuzzy-set membership scores: relevant theoretical and social scientific knowledge, and obvious facts (see Parts II and III); empirical evidence and the researcher's data collection (see Appendices 1–2 and Supplementary Materials); statistical distributions and parameters of quantitative data (see Chap. 15). However, the quantitative scales and statistical parameters (Appendices 1–2 and Chap. 15) were *not* automatically transformed to calibrate the fuzzy-sets by default. Schneider and Wagemann

(2012) highly discourage such an automatic transformation because it fails to achieve the criterion of using calibration parameters that are independent of the data. Therefore, this is unlikely to result in set membership scores that correctly represent the significance of the concept being captured (Schneider & Wagemann, 2012, pp. 41).

First, all relevant conditions were divided into five groups (1) predominant religion (population), (2) state religion, (3) legal origin, (4) languages, and (5) ethnicities. Conditions were combined according to their theoretical relevance. Subsequently, data were calibrated with two goals in mind: to reflect reality as much as possible while striking a balance (i.e. excluding two cases where the condition is met out of 50).

Conditions were calibrated using the “direct method”, i.e. focusing on qualitative anchors (Ragin, 2000). Anchors were chosen to reflect reality based on the distribution of each condition in the data. At the same time, to understand the effects and interaction of each condition, they required sufficient presence. Many possible anchor configurations were tested to find the optimal solution for each condition. Appendix 3 includes all the conditions and qualitative anchors, as well as a description of indicators.

16.2.1.1 EPI and Concordats Present in All Groups (Along with the Outcome)

The only subcategories exhibiting merely one indicator were the *Environment Performance Index (EPI)* and *Concordats* (Agreements with the Vatican). This made including these subcategories in all the result groups feasible.

Concordats are a new qualitative indicator, established here based on Corral and Petschen (2004). This indicator accounts for the international agreements signed by countries with the Roman Catholic Church.

The Roman Catholic Church-State is the inheritor of the Roman Empire and its imperial territoriality (Hofstede, 2001). Therefore, Romanism is the only religious system that, at one and the same time, is a state exercising political (and not only symbolic) functions in today’s geopolitical order (Agnew, 2010). Therefore, “Agreements with the Vatican: *Concordats*” is an essential proxy of the legal, institutional, and political closeness of a state with the Roman See (see Appendix 3 for details on the calibration and thresholds of the other indicators).

16.2.2 Truth Tables

After calibration, truth tables were created for each of the five condition groups to measure both competitiveness and corruption. Each of the groups contains one truth table for a positive outcome and another for a negation of the outcome (i.e. its opposite). Accordingly, 20 truth tables were created in total (see Appendix 4).

Inclusion cut-off (*incl.cut*) was between 0.85 and 0.9 in all cases. Venn diagrams were created to facilitate orientation in truth tables. Sufficiency and necessity analysis was conducted. As the last step, all truth tables and analyses were interpreted both column-wise and row-wise.

Truth tables involve mixed-origin data analyses (quantitative, i.e. *EPI*, *CPI*; qualitative, i.e. *Concordats*). Conclusions were drawn only from configurations displaying high consistency and high coverage scores.

Consistency thresholds (*incl.*) were defined by a gap between truth table rows with higher and lower consistency scores (see Schneider & Wagemann, 2012, p. 128). Generally, scores below 0.75 should be avoided. Analysis strictly disregarded consistency scores lower than 0.9, thus producing even more reliable results.

16.2.3 Venn Diagrams

Venn diagrams visualise truth tables to facilitate analysis and the presentation of results. However, truth tables contain more detailed information, for instance, which countries belong to each combination of conditions and measures of belonging (e.g. PRI and *incl*; see Appendix 4 for conventions and actual truth tables. Section 16.3 presents Venn diagrams for competitiveness. For reasons of space, please refer to Appendix 5 for the Venn diagrams of *corruption*).

16.2.3.1 Colours in Venn Diagrams

Green = outcome 1 in the truth table. Green sections indicate that an outcome exists for a specific condition.

Orange = outcome 0 in the truth table. Orange sections indicate that no outcome exists. In other words, such a combination does not lead to the outcome (e.g. low corruption).

White = logical remainder in the truth table (empty row). White sections indicate that logical remainders exist (no cases exist for this combination of conditions).

16.2.3.2 Background Colours in Venn Diagrams

Background colours in Venn diagrams denote what happens if no condition is present. Attention to green is called for as this means that if no condition is present, then the outcome is high (it suffices to have one such case to cause a change in colours in Venn diagrams, but not in interpretation). A white background means that no cases exist where no condition is present. An orange background means that when no condition is present, the outcome is not present, and at least one case exists

to support this. A blue background indicates a logical contradiction between cases, thus probably indicating a problem.

16.3 Analysis of QCA Results

Five different models and their opposites were tested. Together, they addressed the most significant variables identified in the literature review (Chaps. 3–12) and in the quantitative section of this study (regressions) (Chap. 15). Furthermore, the indicators identified in the literature review were included, yet not considered in the quantitative section (i.e. *Concordats*, due to their qualitative origin).

Given that QCA seeks to establish causal conditions, the present models identify pathways to *competitiveness* and *transparency* and their opposite (i.e. *low competitiveness* and *corruption*). No necessary conditions were found and merely a few conditions with sufficient coverage. The truth tables cluster the countries as close to reality as possible. The analyses are based on coverage (cov.r ~0.5) and consistency (incl. = or >0.9) (For a guide to interpretation and to the conventions used in the truth tables, see Appendix 4. See Appendices 4–5 for truth tables, Venn diagrams, and QCA minimisation using the enhanced Quine–McCluskey algorithm). The Venn diagrams below summarise the most important findings for *competitiveness* for all the groups of conditions. The Venn diagrams for *corruption* can be consulted in Appendix 5.

16.3.1 Competitiveness

16.3.1.1 Predominant Religion (Proportion of Adherents) and Competitiveness

For high competitiveness, high EPI suffices if Concordats with the Vatican are low and if the Roman Catholic and Orthodox population is low (Fig. 16.2).

Sufficiency analysis determined with enough coverage (Cov.r) that low *Concordats*, low *Roman Catholic*, and low *Orthodox* religions in the population are sufficient for high competitiveness. Therefore, high competitiveness always occurs if these conditions are met (but this may also happen in other cases).

Note: Agnostic and atheistic categories are not sufficiently present to affect the model as results remain unchanged. Consequently, to simplify the model, these categories were removed.

Fig. 16.2 Venn diagrams with positive and negative outcomes for *Competitiveness* with *Predominant Religion adherence* in Europe and the Americas (Source: Author’s figure)

16.3.1.2 State Religion and Competitiveness

No *State Religion* positively affects *competitiveness*. Having *Concordats* with the Vatican negatively influences competitiveness (Fig. 16.3).

The truth table “State Religion and Competitiveness” (Truth Table 7 in Appendix 4.2) shows a cluster of Latin American countries with perfect coverage and consistency for the negative outcome. Such Latin American cluster presents substantial evidence for the negative outcome of competitiveness with high *Concordats*, low *EPI*, and the presence of *Catholic State religion*.

Regression model 1 (“Competitiveness in the world,” Sect. 15.3.1.1) shows a positive effect of Protestant state religion, which disappeared in the models of Europe and the Americas. Cluster 11 in Truth Table 5 (Appendix 4.2) displays those countries that produce the positive outcome with Protestant state religion (DNK, FIN, GBR, ISL, NOR, SWE). Section 8.3.4 has shown that these countries established their state religions under the influence of the Protestant sixteenth-century revolution in Germany. The USA went one step further and removed state religion.

Note: Albania, the only *Muslim state* country in the dataset, also presents perfect coverage and consistency for the negative outcome of “State Religion and

Fig. 16.3 Venn diagrams with positive and negative outcomes for *Competitiveness* with *State Religion* in Europe and the Americas (Source: Author’s figure)

Competitiveness” (Truth Table 7 in Appendix 4.2). However, Albania is not that interesting, because it is only one country, which is not enough to draw any definitive conclusions. Probably, if more *Muslim States* were included in the dataset, such analysis would be useful. In contrast, Latin American countries provide robust evidence since ten of them are present in the outcome.

16.3.1.3 Legal Origin and Competitiveness

The most important factor for high competitiveness is *EPI*. Additionally, factors like German, English, and Scandinavian legal origin help to increase competitiveness.

The positive outcome for *Legal Origin* and *Competitiveness* in the Fig. 16.4 (see also Truth Table 9 in Appendix 4.2) shows that countries having high competitiveness are those influenced by the Protestant Reformation (Barro & McCleary, 2005; Johnson & Zurlo, 2016; Woodberry, 2012; Obinger, 2009).

However, two countries are the exception to the previous rule in the present clusters (Truth Table 9 in Appendix 4.2). The first is Ireland, a country with *Catholic State Religion* (Barro & McCleary, 2005; Barrett et al. 2001). The second is Austria, a historically Catholic country (Inglehart & Baker, 2000, p. 36), whose population has mostly been Roman Catholic (Johnson & Zurlo, 2016). Moreover, Ireland and

Fig. 16.4 Venn diagrams with positive and negative outcomes for *Competitiveness* with *Legal Origin* in Europe and the Americas (Source: Author’s figure)

Austria are the only outliers in the group of traditional Roman Catholic countries, which typically have *French Legal Origin* (La Porta et al., 1999). Ireland adopted *English Legal Origin* (common law). Similarly, *German Legal Origin* profoundly influenced Austrian jurisprudence (ibid).

Regression analysis also confirmed that German Legal Origin has a consistently positive influence on competitiveness (Sects. 15.3.1.1.3 and 15.3.1.2.2). The theoretical framework corroborates this result (Sect. 8.3.4.1) (Witte, 2002; Berman, 2003). Further, *German Legal Origin* leads to high competitiveness despite the presence of high *Concordats*. This applies to Austria and Germany, where Adolf Hitler signed the *Reichskonkordat* with the Roman See in 1933 (valid to date). In sum, competitiveness seems to follow the same pattern as corruption with regard to *Legal Origin* (Appendix 5).

16.3.1.4 Languages and Competitiveness

The analysis of languages and competitiveness delivered no important results. However, it confirmed the result of the previous analyses, for which the combination of low *EPI*, high *Concordats*, and *Roman languages* is associated with low competitiveness (Fig. 16.5).

Fig. 16.5 Venn diagrams with positive and negative outcomes for *Competitiveness* with *Languages* in Europe and the Americas (Source: Author’s figure)

In this group, coverage is not high enough to formally establish sufficient conditions. Clusters created by languages are not as accurate as the groups differentiated in the previous three analyses.

16.3.1.5 Ethnicities and Competitiveness

Sufficiency analysis suggests that if a country has high *EPI* and both high and low *white ethnicities*, and if all other conditions are low (*Concordats*, *Latino*, *Mestizo*, and *other non-white ethnicities*), then it always exhibits high *competitiveness* (Fig. 16.6).

Many combinations of conditions in this group (Ethnicities and Competitiveness) have low PRI. The evidence supporting these findings is not robust (Truth Tables 17 and 19 in Appendix 4.2).

Table 16.1 summarises the QCA results for *corruption*. Venn diagram analyses of corruption often resemble those of *competitiveness* (Appendix 5).

Fig. 16.6 Venn diagrams with positive and negative outcomes for *Competitiveness* with *Ethnicities* in Europe and the Americas (Source: Author’s figure)

16.3.2 *QCA Results for Outcome Corruption*

The results in Table 16.1 are generally in line with the different theories explaining corruption/prosperity (Chaps. 5–6). Thus, factors associated with Protestantism as a rule denote paths to low *corruption* (or high transparency), such as Protestant adherents, Protestant State religion, German and English legal origin, and the German and English language. In contrast, factors associated with Roman Catholicism (or also Eastern Orthodoxy) involve paths to high *corruption*, such as Catholic adherents and Catholic State Religion, French legal origin, or Roman/Russian languages.

The various truth tables (Appendix 4) show that countries with similar conditions often belong to the same clusters. All these results substantiate Volonté’s (2015) finding, namely the overlapping of different cultural and institutional factors towards the outcome. Thus, countries with similar conditions often appear in the same groups. Clusters and group selections have therefore proven to work well. While each path and condition could be analysed in-depth further to establish an even broader theoretical understanding of the results, I analyse only four cases in detail. These cases are the same case studies further considered in more detail in Part VI.

Table 16.1 Main QCA results for the five groups of conditions

	Group (condition)	Positive outcome	Negative outcome
1	Predominant religion in population (proportion of adherents)	High <i>EPI</i> and <i>Protestant religion adherence</i> are associated with lower <i>corruption</i> , especially if both are present	<i>Concordats</i> in combination with <i>Roman Catholic religion adherence</i> increase corruption. <i>Orthodox religion</i> has a similar negative effect
2	State Religion	<i>EPI</i> and <i>Protestant State religion</i> again have a positive effect, i.e. decrease corruption. The difference is that <i>Concordats</i> might also have a positive effect only in the absence of <i>State Religion</i>	Groups of countries with high <i>corruption</i> indicate the substantial adverse effect of <i>Concordats</i> in combination with <i>Roman Catholic State religion</i> . <i>Concordats</i> combined with <i>Roman Catholic or Muslim state religion</i> have a negative effect, i.e. increase corruption
3	Legal Origin	<i>German</i> and <i>English legal origin</i> help reduce corruption, while <i>French</i> and <i>Socialist legal origins</i> and <i>Concordats</i> tend to increase corruption. All countries belonging to groups with <i>Scandinavian, German, and English legal origins</i> have low <i>corruption</i> (and always high <i>EPI</i>). Countries with <i>Socialist legal origin</i> in combination with <i>Concordats</i> and high <i>EPI</i> tend to have low corruption	Most countries with high corruption are of <i>French legal origin</i> and have high <i>Concordats</i> . This trend is robust (mainly caused by 13 Latin American countries). No group with high <i>EPI</i> has high corruption. Also, countries with <i>Socialist legal origin</i> combined with low <i>EPI</i> tend to have higher corruption. The adverse effect of French and Socialist legal origins and <i>Concordats</i> disappears if a country has high <i>EPI</i>
4	Languages	Every country with low corruption has high <i>EPI</i> . The <i>German language</i> always leads to low corruption. Some <i>German-speaking</i> countries have high <i>concordats</i> . No country belonging to a group of <i>Roman language</i> has low corruption	All countries belonging to groups with high <i>corruption</i> have low <i>EPI</i> (except for some Russian-speaking countries). In general, the <i>Russian language</i> tends to lead to higher corruption. <i>German</i> and <i>English-speaking</i> countries, in general, do not have high corruption. High <i>EPI</i> , low <i>Roman</i> , low <i>English</i> and low <i>Russian language</i> is a sufficient condition for low corruption (in this combination, corruption is undoubtedly low, although low corruption may be achieved in other ways)
5	Ethnicities	High <i>EPI</i> and high <i>white</i> ethnicities in combination with both high and low <i>Concordats</i> leads to	Countries with high corruption almost never have predominantly <i>white</i> ethnicities, are often

(continued)

Table 16.1 (continued)

	Group (condition)	Positive outcome	Negative outcome
		low corruption. A sufficient path to low corruption is high <i>EPI</i> , high <i>white</i> , low <i>Latino</i> , low <i>mestizo</i> , and low other <i>non-white</i> ethnicities. Low <i>corruption</i> may happen in other ways, but always occurs in this configuration	<i>non-white</i> , and always have low <i>EPI</i> . All predominantly <i>mestizo</i> countries have high corruption. The effect of other conditions is not evident

Source: Author’s figure. See Appendix 4.3 for truth tables and Appendix 5 for Venn diagrams of corruption

16.3.3 QCA Cases

This subsection analyses four qualitative cases (Switzerland, Uruguay, Cuba, and Colombia) from a QCA perspective (Please refer to Chap. 17 for further information on the criteria for case selection and more detailed case analyses).

Regarding configurations that indicate enough coverage, high consistency, and an actual outcome, only Colombia and Switzerland (the two extreme cases) exhibited several consistent results. The other two cases (Cuba and Uruguay) only revealed one or two consistent outcomes (see below). The respective outcomes for Colombia and Switzerland are summarised in tabular form below. The extreme cases have either positive outcomes without negative ones (Switzerland) or negative outcomes without positive ones (Colombia) for both *competitiveness* and *corruption*.

16.3.3.1 Switzerland

Figure 16.7 summarises the solutions for competitiveness, Fig. 16.8 those for corruption.

16.3.3.1.1 Competitiveness

The combination of the following factors explains (highly consistently) Switzerland’s high *Competitiveness* (Fig. 16.7):

1. High Environment Performance (*EPI*);
2. Absence of *State Religion*;
3. Absence of a *Concordat* between the Swiss Confederation and the Vatican/Roman Catholic Church-State;
4. High relative adherence to *Protestant religion*;
5. *German legal origin*;
6. High proportion of *German-speaking population* (Swiss);
7. High proportion of *white ethnicity*.

Switzerland	Conditions for Competitiveness	Solution	Cluster	Consistency (incl. = or > 0.9).
Positive outcome (high competitiveness)	The positive outcome for competitiveness is associated with the following factor combination:			
	(1) Christian denomination (share of population)	High EPI and adherence to the Protestant religion	CAN, DNK, FIN, GBR, CHE, ISL, NLD, NOR, SWE	0.975
	(2) State religion	No <i>State Religion</i> , low <i>Concordats</i> , high EPI	BEL, BGR, CAN, CZE, EST, GRC, CHE, NLD, ROU, RUS, USA	0.89
	(3) Legal origin	German legal origin, low <i>Concordats</i> , high EPI	CHE*	1
	(4) Main linguistic fractionalisation	Mainly German (Swiss)	CHE*	0.99
	(5) Main ethnic fractionalisation	White ethnicity, high EPI, low <i>Concordats</i>	BEL, BGR, CAN, CZE, EST, FIN, GBR, GRC, CHE, IRL, ISL, LUX, NLD, NOR, ROU, RUS, SWE, USA	0.94
Negative outcome (low competitiveness)	The negative outcome for competitiveness is associated with the following factor combination:			
	None	NA	NA	NA

Fig. 16.7 Conditions, solutions, and clusters for competitiveness (Switzerland) (Source: Author's figure)

Regarding *legal origin* and *languages* (groups 3 and 4), Switzerland stands alone in its corresponding clusters. In group 3, this is probably because the other two countries belonging to *German legal origin* (Germany and Austria) have high *Concordats*. In group 4, Switzerland probably stands alone due to its multi-lingual background (French, Italian, Romansh, and predominant (Swiss) *German*). The other German-speaking countries exhibit no such condition.

16.3.3.1.2 Corruption

Unlike the competitiveness analysis, not all group solutions are consistent for Switzerland with regard to corruption: *State religion* (2) and *ethnicities* (5) are not consistent. However, the following conditions may be said to encourage low *corruption* (high transparency) in the case of Switzerland (Fig. 16.8):

1. High Environment Performance (*EPI*);
2. Absence of a *Concordat* between the Swiss Confederation and the Vatican State;
3. High relative adherence to the *Protestant* religion;
4. *German legal origin*; and
5. High proportion of *German-speaking* population (Swiss).

Switzerland	Conditions for Corruption	Solution	Cluster	Consistency (incl. = or > 0.9).
Positive outcome (low corruption)		The positive outcome for corruption (high transparency) is associated with the following factor combination:		
	(1) Christian denomination (proportion in population)	High EPI, low <i>Concordats</i> , adherence to Protestant religion	CAN,DNK,FIN,GBR,CHE,ISL,NLD,NOR,SWE	0.96
	(2) State religion	-	-	-
	(3) Legal origin	German legal origin, High EPI, low <i>Concordats</i>	CHE*	1
	(4) Main linguistic fractionalisation	Mainly German (Swiss), High EPI, low <i>Concordats</i>	CHE*	1
	(5) Main ethnic fractionalisation	-	-	-
Negative outcome (high corruption)		The negative outcome for corruption (low transparency) is associated with the following factor combination:		
	None	NA	NA	NA

Fig. 16.8 Conditions, solutions, and clusters for corruption (Switzerland) (Source: Author's figure)

Analysing corruption calls for the same considerations as when analysing competitiveness. The outcome is the same: Switzerland appears on its own in the clusters of groups 3 and 4 (legal origin and languages).

In Switzerland, most conservative Catholics escaped modernisation and centralism by relocating to the mountains, while Liberals and Protestants mostly remained in flat areas that became industrialised (Obinger, 2009). The federal government has been mainly liberal (anti-clerical) and close to Protestantism (ibid). Likewise, the Protestant population was in the majority until the 1970s (Federal Statistical Office, 2017). Currently, the Protestant cantons are the most competitive, while the mountainous Roman Catholic cantons are the least competitive in the Swiss Confederation (UBS Switzerland AG, 2016).

16.3.3.2 Uruguay

In the case of Uruguay, consistency and coverage are generally not high enough to draw significant conclusions.

16.3.3.2.1 Competitiveness

Regarding the positive outcome—*competitiveness* related to *predominant religion*—Uruguay clustered uniquely with Chile (incl. 0.88) in an outcome where one of the most critical factors determining high competitiveness is EPI (Truth Table 1 in Appendix 4.2).

Uruguay exhibits the highest levels of social progress in Latin America (Sect. 4.2) as well as high safety (UNODC, 2013). Along with Chile, it is the only country in Latin America with low perceptions of corruption (Transparency International, 2016). Likewise, Chile and Uruguay are liberal democracies with explicit anti-clerical movements that never allowed concordats to be signed with the Roman Church-State.

Further, Uruguay is by far Latin America's most secular country with the lowest religiosity and lowest proportion of Roman Catholics on the continent (Pew Research Center, 2014, p. 46; Gallup, 2010). The Roman Catholic Church-State did not significantly establish itself in Uruguay, unlike in most Latin American countries. After gaining independence in 1828, Uruguay continued a secular direction with the recognition of civil unions in 1837. In 1917, the Uruguayan constitution completely separated church and state. Religious instruction was banned from public schools and divorce became legalised. Consequently, Uruguayan governments have since progressively reduced the influence of the Roman Catholic Church-State without, however, repressing religion as in Communist systems (Barber, 2012). Thus, for instance, the early and effective separation of church and state meant that the State gained complete control over its education system already in 1877. This is unusual in Latin America (Da Costa, 2009).

16.3.3.2.2 Corruption

Like Cuba, the only condition with an incl. near 0.9 is the positive outcome for *corruption* related to *predominant religion* in the population (incl. 0.831) (Truth Table 21 in Appendix 4.2). In this group, Uruguay clustered with Chile and Cuba. This cluster shows three countries with an unusual performance outside the entire group of Latin American countries. First, they exhibit the relative lowest corruption in the region. Second, Chile and Uruguay separated church and state in their constitutions unusually early in Latin America (1925 and 1918, respectively); Cuba did so in the wake of the Communist revolution (1959). Thirdly, none of these countries has signed a Concordat with the Roman Catholic Church-State. Some other Latin American countries such as Brazil also separated church and state relatively early, but signed international agreements with the Roman See. Fourthly, they exhibit favourable environmental performance (EPI). Geographically, Argentina should also appear in this cluster for geographical and environmental reasons. This, however, is not the case. Argentina has a Concordat with the Vatican/Roman Catholic Church-State, and its constitution still privileges the Roman Catholic Church.

16.3.3.3 Cuba

16.3.3.3.1 Competitiveness

(Cuba has no data on competitiveness)

16.3.3.3.2 Corruption

In the case of Cuba, coverage and consistency are generally not high enough to draw significant conclusions from the analysis. However, two important findings are:

1. Cuba appears, with high consistency (0.907), in the cluster MDA, MKD, UKR, BIH, CUB for the negative outcome of corruption associated with *legal origin* (Truth Table 31 in Appendix 4.2). All the countries in this cluster have a *socialist legal origin* and are located mostly in Europe, except for Cuba.
2. The sole other consistent condition with an incl. near 0.9 is the positive outcome of *corruption for predominant religion* in the population (incl. 0.831) (Truth Table 21 in Appendix 4.2). In this group, Cuba clustered with Chile and Uruguay, those countries with the lowest perceived corruption in Latin America (Transparency International, 2016).

Cuba ranks in the middle of world distribution on the transparency index (Transparency International, 2016). Compared to the cases studied (Europe and the Americas), the countries clustering with Cuba exhibit moderate to high corruption due to their *Socialist Legal Origin*. However, compared to the rest of Latin American countries, the cluster including Cuba shows moderate to low corruption (i.e. not as high as countries such as Venezuela, Colombia, or Paraguay). In other words, separating the Catholic Church from the state had a positive influence (all three countries in this cluster—Cuba, Chile, and Uruguay—have vigorously implemented this separation). Nonetheless, adopting a socialist legal origin negatively impacts transparency (as the cluster of socialist countries, including Cuba, shows). Moreover, Cuba does not exhibit as much transparency as either Chile or Uruguay. The remaining clusters to which Cuba belongs do not exhibit high enough consistency (Appendix 13.2).

16.3.3.4 Colombia

The analysis of Colombia is diametrically opposed to that of Switzerland.

Figure 16.9 summarises the solutions for competitiveness, Fig. 16.10 those for corruption.

16.3.3.4.1 Competitiveness

The analysis of competitiveness and corruption in the case of Colombia reveals similar conclusions.

Note that Paraguay is the only country, alongside Colombia, that clusters for low competitiveness (Fig. 16.9) and high corruption (Fig. 16.10). Therefore, the QCA analysis for Paraguay may be expected to resemble Colombia with regard to competitiveness and corruption.

16.3.3.4.2 Corruption

The combination of the following factors explains highly consistently the prevalence of low competitiveness and high corruption in Colombia (*as well as in Paraguay*):

- 1. Low Environment Performance (*EPI*);
- 2. Concordat with the Vatican;
- 3. Roman Catholicism as state religion;
- 4. High adherence to Roman Catholicism;
- 5. French legal origin,

Colombia	Conditions for Competitiveness	Solution	Cluster	Consistency (incl. = or > 0.9).
Positive outcome (high competitiveness)	None	The positive outcome for competitiveness is associated with the following factor combination: NA	NA	NA
Negative outcome (low competitiveness)	The negative outcome for competitiveness is associated with the following factor combination:			
	(1) Christian denomination (proportion in population)	Concordats and Roman Catholic religion	ARG,COL,ECU,MEX,PER,PRY,VEN	0.931
	(2) State religion	High concordats, low EPI, Catholic State religion	ARG,BOL,BRA,COL,DOM,GTM,PER,PRY,SLV,VEN	1
	(3) Legal origin	French legal origin, Concordats, low EPI	DOM,MEX,SLV,GT M,BRA,COL,ECU,PER,ARG,BOL,PRY,VEN	1
	(4) Main linguistic fractionalisation	Low EPI, high Concordats, Roman languages	BOL,BRA,COL,DOM,ECU,GTM,MEX,PER,PRY,SLV,VEN	1
	(5) Main ethnic fractionalisation	Low EPI, non-white population, high concordats	COL,ECU,MEX,PRY,SLV	1

Fig. 16.9 Conditions, solutions, and clusters for competitiveness (Colombia) (Source: Author’s figure)

- 6. Roman language (Spanish); and.
- 7. High proportion of other non-white population.

Colombia is well-known in Latin America for its dominant Roman Catholic Church and widespread religiosity (Levine, 1981, pp. 7–8) and is considered “the most clerical Roman Catholic society of the continent” (Munevar, 2008, p. 389). However, it follows Mexico on the blacklist of the top 50 countries where persecution of Christians is most severe in the world. Colombia and Mexico are the only two countries in the Western hemisphere on that list, along with countries in the Middle East and Africa (Open Doors, 2015). Colombia also exhibits very high homicide and corruption rates compared to the rest of the world (UNODC, 2013; Transparency International, 2016).

In conclusion, a “Catholic and conservative hegemony” has existed in Colombia until 1991, when the Constitution of Rights was promulgated and religious pluralism became legally recognised (Figueroa, 2008, pp. 256–270). However, as a result of centuries of hegemony, the Roman Catholic Church-State still enjoys ample privileges with the Colombian state (Munevar, 2008; Figueroa, 2016).

Colombia	Conditions for Corruption	Solution	Clusters	Number of cases	Consistency (incl. = or > 0.9).
Positive outcome (transparency/low corruption)	None	The positive outcome for corruption (high transparency) is associated with the following factor combination: NA	NA	NA	NA
Negative outcome (high corruption)		The negative outcome for corruption (low transparency) is associated with the following factor combination:			
	(1) Christian denomination (proportion in population)	Concordats and Roman Catholic religion	ARG,COL,ECU, MEX,PER,PRY,VEN	7	0.933
	(2) State religion	High concordats, low EPI, Catholic State religion	ARG,BOL,BRA,COL,DOM,GTM,HTI,PER,PRY,SLV,VEN	11	1
	(3) Legal origin	French legal origin, Concordats, low EPI	DOM,MEX,SLV, GTM,HTI,BRA,COL,ECU,PER,ARG,BOL,PRY,VEN	13	1
	(4) Main linguistic fractionalisation	Low EPI, high Concordats, Roman languages	BOL,BRA,COL,DOM,ECU,GTM,HTI,MEX,PER,PRY,SLV,VEN	12	1
	(5) Main ethnic fractionalisation	Low EPI, non-white population, high Concordats	COL,ECU,MEX,PRY,SLV	5	1

Fig. 16.10 Conditions, solutions, and clusters for corruption (Colombia) (Source: Author’s figure)

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