Drivers of Youth Outsiderness in European Labour Markets

A Comment on Marques and Salavisa (*Socio-Economic Review*, 2017)

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Abstract
Marques and Salavisa (2017) use fuzzy set qualitative comparative analysis (fsQCA) to analyze age-based labour market dualization in Southern European, Anglo-Saxon and a few Nordic countries. They argue that segmentation at the expense of young outsiders is driven by several factors in non-linear ways: deindustrialization, labour market coordination, employment protection, and liberalization can lead to youth outsiderness. We are able to replicate their analysis in technical terms, but argue that the analysis and the interpretation of its results are subject to technical misunderstandings. When correcting for these, we must call into question the study's results. To underpin our argument, we provide a hands-on discussion of how two measures of fit in fsQCA - the consistency and PRI scores of the sufficiency solution terms - are calculated. A good understanding of these allows the researcher to understand which cases and configurations drive the results, and thus facilitates technically correct decisions during the analysis and a better understanding of the results. We conjecture that the original paper cannot present conclusive evidence on the hypotheses it sought to test for a lack of sufficient variation in the empirical data sample.

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1 Introduction

This note discusses the empirical analysis in Marques & Salavisa (2017), who investigate determinants of youth outsiderness in European labour markets. Using fuzzy set qualitative comparative analysis (fsQCA) and data from 14 European countries, their paper finds that two settings provoke youth labour market outsiderness: high deindustrialization combined with high levels of employment protection and low coordination of industrial relations, and deindustrialization combined with low levels of employment protection and high levels of liberalization. Deindustrialization is identified as a necessary condition.

We are able to replicate the analysis in technical terms and reproduce their results. However, we argue that due to technical mistakes and misinterpretations along the way of their empirical analysis, the authors reach incorrect conclusions. Specifically, in our view, Marques and Salavisa misinterpret the measures of fit they report and fail to report complementary measures of fit that could help uncover this misinterpretation. We reach the conclusion that the sample that Marques and Salavisa used is unable to provide conclusive evidence on the hypotheses they set out to test, for a lack of sufficient variation across the cases.

To underpin our argument, we provide a hands-on discussion of how the consistency of sufficient conditions should be evaluated. There are two common measures of fit: the *consistency score* and the *Proportional Reduction in Inconsistency (PRI) score* (see for instance Schneider & Wagemann, 2012, p. 125f and 241f). Typically, these measures are provided in a generalized and often mathematically ambiguous form in the literature. We conjecture that this makes it difficult for scholars to understand and interpret the measures accurately. Using the data set of Marques and Salavisa, we provide an example of how the consistency score and the PRI are calculated for the allegedly sufficient conditions. This allows us to analyse which cases and scores are responsible for low scores, make appropriate choices during the analysis and facilitate a better understanding of the results.

2 Brief summary of the Marques and Salavisa (2017) paper

Marques and Salavisa (2017) are interested in the determinants of labour market outsiderness among young people in Southern European, Anglo-Saxon and Nordic countries. Labour market outsiders are “those belonging to occupational groups with a particularly high probability of atypical employment and/or unemployment” (p. 2). Using fsQCA, they seek to identify causal mechanisms behind the observation that in some countries, young people are much more afflicted by labour market outsiderness than the working population at large. According to their interpretation, their analysis shows that different mechanisms are at play in different (groups of) countries. Four factors are considered for explaining age-based labour market segmentation in the countries they study: deindustrialization (DE), the level of coordination in industrial relations (LCO), liberalization (L) and employment protection (EP). Different configurations of these conditions would lead to a relatively higher outsiderness of young people, for different reasons. This challenges the widespread understanding of the role of employment protection for the occurrence of labour market outsiderness of young people: in Marques and Salavisa’s view, ‘less employment protection does not guarantee, *per se*, less age-based segmentation’ (p. 5). Marques and Salavisa develop, test, and confirm the following three hypotheses, two of which appear oddly specific and happen to coincide remarkably well with their results:

1. Deindustrialization is a necessary condition for age-based dualization.
2. Employment protection + uncoordinated industrial relations + deindustrialization leads to age-based dualization because high job security reinforces the power of incumbent workers, who are generally more unionized.
3. Labour market deregulation + low employment protection + deindustrialization leads to age-based dualization because this works as a precondition to the expansion of atypical jobs in the service sector, where more young people are employed.

To test their hypotheses, Marques and Salavisa resort to fsQCA using a sample of 14 countries (EU-15 without Luxembourg, for reasons of data availability). FsQCA is a set-theoretic method (Ragin, 2000, 2008; Schneider & Wagemann, 2012) that aims to identify (combinations of) conditions that are necessary and/or sufficient for age-based labour market segmentation to occur. Marques and Salavisa measure youth outsiderness as the difference between the percentage of labour market outsiders in the age group older than 40 years and the percentage of outsiders in the age group younger than 40. For a discussion of the empirical method, measurement of the conditions and calibration, we refer the reader to the original paper.[1]

Marques and Salavisa identify one necessary condition and two sufficient configurations for the outcome 'youth outsiderness' (YO). Based on a necessity consistency score of 0.900 and a raw coverage of 0.693, they interpret that deindustrialization is a necessary condition. At the same time, they acknowledge that only four cases are not deindustrialized. When a condition is present in a large number of cases, a high necessity consistency score may obscure a trivial necessity relationship. Trivialness refers to a situation in which a subset of the total sample is so large that it could be mistaken for a relevant necessary condition. There is a measure for detecting this misleading effect of subset sizes: the Relevance of Necessity score (RoN) (Schneider & Wagemann, 2012, 236). It aims to flag full or nearly full membership. Full membership means that the condition is true for (almost) each case, e.g., deindustrialization is present in (almost) each country. Given a condition X with observation values x_i and an outcome Y with observation values y_i, the RoN score is defined as the ratio of *the distance of full membership of the condition*, $\sum_i(1-x_i)$, to *the distance to full membership of both the condition and the outcome*, $\sum_i(1-\min(x_i,y_i))$:[2]

$$\text{RoN} = \frac{\sum(1-x_i)}{\sum(1-min(x_i,y_i))}. \tag{1}$$

[1]There are a few noteworthy points regarding the measurement of the conditions. For instance, LCO (which includes wage coordination, employers' organization density and union density) was computed as the average of 1980-2011. Union density and wage coordination underwent important changes during this period in many countries (see for instance Ebbinghaus & Visser, 1999; Schnabel, 2013). For the other conditions, no period averages but only recent and isolated figures were used. The choice of the period average 1980-2011 for the condition LCO is motivated with the intention to reflect structural patterns, but this seems questionable when structures change in the period under consideration. Another matter of concern is a potential measurement problem with deindustrialization: given changing population sizes and ageing populations, the degree of industrialization should probably not be measured by the absolute number of industrial jobs. The operationalization of youth outsiderness raises concerns as well: the cut-off age to define young workers is 40 years. Usually, international institutions refer to workers aged 15 to 24 to refer to young workers. The fsQCA literature emphasizes that cut-off points should be qualitatively motivated, and one would not usually consider a person of 39 years of age as a young worker, or "youth". We remark these problems but do not pursue these issues further, and take Marques and Salavisa's fuzzy scores as given in our replication.

[2]For cases of (almost) full membership of the condition, the numerator becomes (approaches) 0, for cases of (almost) full membership of both the condition and the outcome, the denominator becomes (approaches) 0.

Computation of this score is provided by standard software programs, including the R Package QCA (Duşa, 2007) that Marques and Salavisa used, but unfortunately it was not reported. In our replication, the RoN score is remarkably low (0.496). While there is to our knowledge no threshold value beyond which RoN scores are considered acceptable,[3] for the present case, the RoN score strongly suggests that deindustrialization is a trivial necessary condition. At least we would have to conclude that the present sample does not allow us to make claims about its necessity, as we only have very little information as to what would have happened in terms of youth outsiderness in the absence of deindustrialization. Moreover, there is one country with age-based labour market segmentation – Italy – in which deindustrialization did not take place (as measured by the authors). Unfortunately, this case is not discussed in the paper even though Figure 1 in the original paper, where YO scores are plotted against DE scores, shows Italy on the top-left quadrant. This clearly seems at odds with the definition of a necessary condition.[4]

As to sufficiency, the authors identify two paths towards age-based labour market segmentation that exactly correspond to their hypotheses (see table 1)[5]. The first path consists of high deindustrialization, high levels of employment protection and low coordination in the industrial relations system, and covers the countries France, Portugal, Spain and Greece. The second consists of high deindustrialization, the absence of high employment protection and high levels of liberalization, and is represented by Ireland, UK, Denmark, and Sweden. For these conditions, Marques and Salavisa report consistency scores. The consistency scores indicate how consistently a particular configuration produces an outcome or not (a detailed discussion follows in section 3.1). Unfortunately, they omit a

Table 1: Analysis of sufficient conditions for the outcome YO

Solution term	Solution consistency	Raw coverage	Unique coverage
Path 1: DE + EP + LCO (FRA, POR, ESP, GRE)	0.929	0.492	0.350
Path 2: DE + ep + L (IRE, UK, DK, SWE)	0.862	0.461	0.320

Source: This table is based on Marques and Salavisa (2017), table 6.
Note: Low-case condition labels denote negation of the relevant conditions, whereas upper-case condition labels denote their presence.

second measure of fit, the PRI score (Schneider & Wagemann, 2012). The PRI addresses the problem of common subset relations and computes the degree to which a configuration is as sufficient for an outcome as it is sufficient for the negation of this outcome. The obtained score will be lower when a condition X is sufficient for both Y and $\sim Y$, or, in other words, when consistency scores for Y and $\sim Y$ are close (irrespective of their levels). The PRI can be used for the analysis of single truthtable rows and for logically minimized sufficient conditions. It is computed as (Schneider & Wagemann, 2012, p. 242):

[3] In one example, Schneider and Wagemann Schneider & Wagemann (2012) discuss an RoN score of 0.56 (p. 237), which they consider unacceptable.

[4] The thank a reviewer for pointing out Italy's location in the original paper's Figure 1 to us.

[5] This table reproduces results as reported in the original paper (table 6 there). We are unable to replicate these results exactly. Our replication file provides the corresponding code. We do not discuss this issue further because, as we argue below, the original authors make inappropriate decisions prior to this step in the analysis that render this results table obsolete.

$$\text{PRI} = \frac{\sum \min(X,Y) - \sum \min(X,Y,\sim Y)}{\sum \min(X) - \sum \min(X,Y,\sim Y)} \tag{2}$$

Table 2 shows the truthtable from Marques and Salavisa's paper to which we added the PRI score.[6] On the basis of the consistency score and the PRI, the researcher will decide which truthtable rows should be included in the logical minimization process. Assessing the consistency of truthtable rows therefore bears important consequences for the subsequent analysis. Marques and Salavisa place the threshold at a consistency score of 0.82, which includes truthtable rows 1-4. This choice, and in particular the inclusion of Denmark and Sweden with a rather low consistency score of 0.821, may be acceptable. However, a PRI of only 0.542 should draw the researcher's attention. Section 3.2 discusses in detail what this PRI score reveals about subset relations in this sample.
Table 3 shows the results of the logical minimization process in the case where Sweden and Denmark

Table 2: Truth Table for the Analysis of Sufficient Conditions of YO - including PRI

DE	EP	LCO	L	Cases	Consistency	PRI
1	1	1	0	France and Portugal	0.963	0.949
1	1	1	1	Greece and Spain	0.902	0.868
1	0	1	1	Ireland and UK	0.861	0.801
1	0	0	1	Denmark and Sweden	0.821	0.542
1	1	0	1	Finland and Netherlands	0.760	0.464
0	1	1	1	Italy	0.747	0.656
1	1	0	0	Belgium	0.746	0.370
0	1	0	1	Germany	0.578	0.313
0	1	0	0	Austria	0.533	0.270

Note: Corresponds to Marques and Salavisa's table 5. Only the PRI score was not reported in the original paper and has been added by the present authors.

have been excluded from the logical minimization process. Without making any assumptions about logical remainders (complex solution term), two sufficient paths emerge. High deindustrialization and low coordination are part of both, supplemented by either high employment protection or high levels of liberalization. Spain and Greece are in accordance with both solutions. Under the assumption that neither LCO nor EP are decisive (parsimonious and intermediate solution), the solution term can be further reduced to stating that high deindustrialization and low coordination are conducive to youth outsiderness.

Of course, Marques and Salavisa may object that EP and LCO play a decisive role: this is what their paper is about. Precisely, hypothesis 3 stated that when coming along with labour market deregulation, low employment protection could - like high employment protection under different circumstances - lead to youth outsiderness. However, our point is that the present sample cannot be used to test this hypothesis thoroughly. The reason is that we excluded Denmark and Sweden for reasons the next section will discuss in detail. Marques and Salavisa's interpretation, in turn, heavily relies on their inclusion. We do not claim that Marques and Salavisa's hypothesis about the role of employment protection should be rejected, but we conjecture that the present sample is unable to speak to this hypothesis because of a lack of sufficient variation across the cases.

[6]Like Marques and Salavisa, we omit logical remainders and only report truthtable rows with observations.

Table 3: Analysis of sufficient conditions for the outcome YO - without SWE and DK

Solution term	Solution consistency	PRI	Raw coverage	Unique coverage
Complex solution:				
Path 1: DE * EP * LCO	0.929	0.912	0.492	0.146
(FRA, POR, ESP, GRE)				
Path 2: DE * LCO * L	0.914	0.893	0.489	0.144
(IRE, UK, ESP, GRE)				
Parsimonious and intermediate solution:				
DE * LCO	0.934	0.922	0.655	-
(all cases)				

Note: Simplifying assumptions used in parsimonious solution: DE=1, EP=0, LCO=1, L=0; in intermediate solution: DE=1, EP=?, LCO=?, L=0.

3 Interpreting measures of fit for sufficient conditions

3.1 Consistency score

Measures of consistency indicate to what extent a statement made about subset relations is in line with empirical observations. Here, we are interested in statements about sufficiency. Conceptually, full consistency of a sufficient condition is reached when all cases have smaller or equal membership in X than in Y. For fuzzy sets, a consistency measure should not only represent subset relations, but also take into account how strongly a case deviates from the alleged subset relation. The consistency score of the sufficient condition can be calculated as follows (Ragin, 2006, p. 297):

$$\text{Consistency}_{\text{Sufficient conditions } (X_i \leq Y_i)} = \frac{\sum_{i=1}^{I} \min(X_i, Y_i)}{\sum_{i=1}^{I} X_i} \tag{3}$$

This formula is ambiguous and often cited without a precise definition of its arguments. Index i is used in different contexts on the left-hand side (index of the computed consistency score) and on the right-hand side (counter variable) of the equation. Also, no definition is given of what exactly the minimum of X and Y is. For example, Schneider & Wagemann (2012, 126) write that “the minimum values across the membership scores in X and Y are added up and then divided by the sum of the membership values in X across all cases.” It remains unclear, however, if this includes minimum values of all cases in a truthtable, or all cases that belong to a specific configuration. A minimum function over two sets is not well-defined. Several interpretations of the numerator are possible: it may return the smaller set, it might return a vector or set of two minimum values (one for each set), or it might return the minimum value of the union of the two sets. An unambiguous way to express the consistency measure for a logically minimized condition is[7]:

[7] This equation corresponded to the source code of the R package QCA (Duşa, 2007) when we checked in 2017.

$$\text{Consistency}_{\text{Suf con }(X_j \leq Y_j)} = \frac{\sum_{i=1}^{I} \min(X_i \cup Y_i)}{\sum_{i=1}^{I} \min X_i}, \tag{4}$$

where I is the number of cases (rows) i in the truthtable (excluding logical remainders). X_i comprises the fuzzy set scores of all conditions C and case i. The fuzzy set scores $C_{i,m}$ of each condition $m = 1, .., M$, where M is the number of conditions present in a truthtable, are mapped into the set X_i in the following way:

$$X_i = \begin{cases} 1 - C_{i,m}, & \text{if} \quad Z_m = 0 \\ C_{i,m} & \text{if} \quad Z_m = 1 \end{cases} \tag{5}$$

Z_m is the value each condition takes in the configuration for which the consistency score is being computed.

For an illustration, let us calculate the consistency score of the configuration "DE*ep*lco*L", that is,

Table 4: Summary Table of Marques and Salavisa's Fuzzy Set Scores

j	Countries	YO	DE $m = 1$	EP $m = 2$	LCO $m = 3$	L $m = 4$
1	Austria	0.18	0.33	0.63	0.05	0.18
2	Belgium	0.15	0.73	0.58	0.00	0.00
3	Denmark	0.59	1.00	0.26	0.21	0.56
4	Finland	0.36	0.93	0.53	0.00	0.78
5	France	0.98	0.77	1.00	1.00	0.45
6	Germany	0.03	0.00	0.63	0.37	0.78
7	Greece	1.00	1.00	0.84	1.00	0.67
8	Ireland	0.88	0.88	0.26	0.52	1.00
9	Italy	0.92	0.39	0.89	0.67	0.67
10	Netherlands	0.01	0.91	0.58	0.32	0.89
11	Portugal	0.87	1.00	0.95	0.81	0.09
12	Spain	0.87	0.81	0.79	0.62	0.78
13	Sweden	0.51	1.00	0.47	0.11	0.56
14	UK	0.93	1.00	0.00	1.00	1.00

Note: This table is based on table 2 in the original paper.

the case of Denmark and Sweden. The values of reference of conditions Z_m are thus "1 0 0 1" (see table 2, row 4). Table 5 lists all fuzzy set scores as well as the scores that each country contributes to $\min(X \cup Y)$ and $\min X$, respectively. For example, in the case of condition $m = 4$ (condition L) and for Austria, we add 0.18 to the numerator as well as to the denominator since the score of condition L (0.18) is the minimum of all X as well as the minimum of the union of sets X and Y.

The consistency score decreases with each case where the term that is added to the denominator is larger than the one added to the numerator. These are cases in which the value of Y_i is the minimum of the conjoint set of X_i and Y_i. For a consistent subset relation of sufficiency, this should not be the case. In the case of Denmark and Sweden's configuration, the countries that

Table 5: Fuzzy Set Scores to be Considered for Evaluating Configuration "DE*ep*lco*L"

i	Countries	Y	$1-Y$	X				min X	min	PRISUM
		YO	$\sim$ YO	DE $m=1$	ep $m=2$	lco $m=3$	L $m=4$		$(X \cup Y)$	$\min(X \cup Y \cup (1-Y))$
1	Austria	0.18	0.82	0.33	0.37	0.95	0.18	0.18	0.18	0.18
2	Belgium	0.15	0.85	0.73	0.42	1.00	0.00	0.00	0.00	0.00
3	Denmark	0.59	0.41	1.00	0.74	0.79	0.56	0.56	0.56	*0.41*
4	Finland	0.36	0.64	0.93	0.47	1.00	0.78	0.47	*0.36*	0.36
5	France	0.98	0.02	0.77	0.00	0.00	0.45	0.00	0.00	0.00
6	Germany	0.03	0.97	0.00	0.37	0.63	0.78	0.00	0.00	0.00
7	Greece	1.00	0.00	1.00	0.16	0.00	0.67	0.00	0.00	0.00
8	Ireland	0.88	0.12	0.88	0.74	0.48	1.00	0.48	0.48	*0.12*
9	Italy	0.92	0.08	0.39	0.11	0.33	0.67	0.11	0.11	*0.08*
10	Netherlands	0.01	0.99	0.91	0.42	0.68	0.89	0.42	*0.01*	0.01
11	Portugal	0.87	0.13	1.00	0.05	0.19	0.09	0.05	0.05	0.05
12	Spain	0.87	0.13	0.81	0.21	0.38	0.78	0.21	0.21	*0.13*
13	Sweden	0.51	0.49	1.00	0.53	0.89	0.56	0.53	*0.51*	*0.49*
14	UK	0.93	0.07	1.00	1.00	0.00	1.00	0.00	0.00	0.00
							$\sum$	3.01	2.47	1.83

Note: Cases in which $\min(X \cup Y)$ differs from $\min X$ (i.e. the Y value is the minimum) show $\min(X \cup Y)$ in italic; cases in which PRISUM differs $\min(X \cup Y)$ (i.e. $1-Y$ is the minimum) show PRISUM in italic.

are responsible for the relatively low consistency score are Finland, the Netherlands, and Sweden. Finland and the Netherlands compromise the consistency of the statement under scrutiny because they are not far from being part of the "1 0 0 1" group (with EP scores of 0.53 and 0.58, respectively, see table 4)[8], but do not experience youth labour market outsiderness. The deviation between $\min(X \cup Y)$ and $\min X$ is strongest for the Netherlands because this outcome is clearer here (YO score of 0.01) than in Finland (0.36). Sweden lowers the consistency score because it is almost part of a different configuration (EP score of 0.47) and because it is almost part of the group without youth labour market outsiderness (YO score of 0.51). For these reasons, the statement made about the sufficiency of the configuration "1 0 0 1" for the outcome $Y = 1$ is not fully consistent, as understood by the commonly used consistency measure.

$$\text{Consistency}_{\text{Suf con }(X_{DK,SWE} \leq Y_{DK,SWE})} = \frac{2.47}{3.01} = 0.821 \tag{6}$$

3.2 *Proportional Reduction in Inconsistency (PRI)*

The PRI score is a complementary measure to the consistency score. In addition to the evaluation of mere consistency, we should also pay attention to the possibility that the configuration under scrutiny may be sufficient both for the outcome and the non-outcome. To analyse the second issue,

[8] A note is in order concerning the fuzzy set scores in the original paper. The authors indicate having used Ragin's direct method of calibration (Ragin, 2008, 85-94). This is confusing insofar as Ragin's direct method, by his definition, uses a piecewise logistic membership function for the transformational assignment of raw data to fuzzy set scores. Marques and Salavisa, in contrast, use a linear membership function, which was implemented as default option in version 1.1-2 of the R package QCA (Thiem & Dusa, 2013, p. 55-60). Calibration and the many choices involved in the process, among them the choice of a membership function, have been discussed elsewhere (see for instance Thiem & Dusa, 2013; Thiem, 2014). We ignore this issue here and work with the fuzzy set scores used by Marques and Salavisa.

the PRI score is computed according to the above-mentioned formula proposed by Schneider and Wagemann (equation 2). Following the terminology of equation 7, it could be rewritten as

$$\text{Consistency}_{\text{Suf con }(X_j \leq Y_j)} = \frac{\sum_{i=1}^{I} \min(X_i \cup Y_i) - \sum_{i=1}^{I} \min(X_i \cup Y_i \cup \sim Y_i)}{\sum_{i=1}^{I} \min X - \sum_{i=1}^{I} \min(X_i \cup Y_i \cup \sim Y_i)}, \tag{7}$$

Both $\min(X \cup Y)$ and $\min X$ are known from the calculation of the consistency score (respectively numerator and denominator in that equation). The term subtracted from these expressions in both numerator and denominator in equation 7 is labelled PRISUM in table 5. It indicates the minimum of the union of three sets: the outcome, its opposite, and the conditions. For the case of Sweden and Denmark, we obtain:

$$\text{PRI} = \frac{(\min(X \cup Y)) - \text{PRISUM}}{(\min X) - \text{PRISUM}} = \frac{2.47 - 1.83}{3.01 - 1.83} = \frac{0.64}{1.18} = 0.542 \tag{8}$$

The cases responsible for this low PRI score are Denmark, Ireland, Italy, Spain, and Sweden. The strongest contribution comes from the case of Ireland. This is because the case of Ireland contradicts the statement under scrutiny and it does so more strongly than any other case: Ireland experiences youth labour market outsiderness (YO score of 0.88) despite obtaining a high LCO score. Ireland belongs to the configuration "DE*ep*LCO*L", while the statement under scrutiny is that "DE*ep***lco***L" is sufficient for the outcome. The case of Ireland thus questions the importance of a low LCO score. Denmark lowers the PRI score because its membership in the group of countries with youth labour market outsiderness is rather weak. Based on this case, the statement that the configuration under scrutiny is sufficient for the outcome and not its absence is therefore not very strong. The contributions of Italy, Spain, and Sweden are rather small. Italy and Spain lower the score because they belong to configuration that are quite opposite to "1 0 0 1" and nevertheless experience youth labour market segmentation. Sweden, again, makes a small contribution because it almost belongs to the opposite outcome group.

Taken together, the two scores show that the statement made about the sufficiency of the configuration "1 0 0 1" rests on shaky grounds. Therefore, we argue, it should not be included in the logical minimization process. This, in turn, changes the outcome of the logical minimization process, as shown above.

4 *Conclusion*

In this note, we have attempted to show the importance of understanding measures of fit in fsQCA. The analysis of Marques and Salavisa rests on a statement about sufficiency that is questionable. For some crucial cases, the membership in either outcome or configurations or both is only marginal. Different assessment of those cases would yield a different result. The consistency score of the sufficient condition and the PRI score are designed to point the researcher to these cases. Therefore it is essential that researchers using fsQCA take these scores into account and analyze them carefully and critically. Against this background, we have criticized Marques and Salavisa's use of fsQCA and used their paper to illustrate our point. This is not to say that the results of their paper are necessarily wrong: Marques and Salavisa have raised a number of important issues and may well be right about the determinants of youth outsiderness in general and the ambiguous role of labour market deregulation in regular. To make an empirically strong case, however, future analysis of the hypotheses should assess fsQCA outcomes more carefully and critically.

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