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Implementation pathways of large-scale urban development projects (IsUDPs) in Western Europe: a qualitative comparative analysis (QCA)

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ABSTRACT

As powerful landmarks to steer local and regional development, strategic projects are often linked with strategic spatial plans. However, the key question remains as to what extent strategic urban projects and plans can be regarded as aligned. By building on previous international comparative research, we identify five main conditions assumed to enable, in combination, the alignment between strategic projects and plans. By adopting a qualitative, multi-method empirical strategy (interviews, site visits, online questionnaire, additional literature) and by performing fuzzy-set Qualitative Comparative Analysis (fs-QCA), we compare 38 European large-scale urban development projects (IsUDPs) and assess which combinations of conditions support concordance of the projects with strategic spatial plans (SSPs). Our analysis shows that there are five pathways, factored out into two main patterns, enabling alignment. Substantial variation in our cases appears to be captured by: (i) considerable involvement of the national state combined with (inter)national private actors and (ii) a considerable involvement of private actors combined with international external events.

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1. Introduction

Strategic urban projects are typically large-scale, prominent urban transformations implemented locally with the aim to stimulate urban growth, for instance by envisioning a new cultural or economic specialization of the urban system (Salet, 2007, p. 4). Strategic urban projects can take the form of urban renewals and cultural landmarks, such as water-front renewals (Salet & Gualini, 2007a), mixed-used areas in deprived neighbourhoods (Fainstein, 2008) and transport infrastructures (Flyvbjerg, Bruzelius, & Rothengatter, 2003; Verweij & Gerrits 2015; Gerrits & Verweij, 2018). Strategic urban projects are referred to with multiple terms: megaprojects (Flyvbjerg et al. 2003; Fainstein, 2008);

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urban development projects (UDPs; Moulaert, Rodriguez, & Swyngedouw, 2003a); strategic spatial projects (Oosterlynck, van der Broeck, Albrechts, Moulaert, & Verhetsel, 2011); complex infrastructure projects (Gerrits & Verweij, 2018); large-scale urban projects (Hersperger et al., 2018). In this study, we call them large-scale urban development projects (hereafter: lsUDPs).

Since the 1990s, lsUDPs have been increasingly implemented in European urban regions to promote targeted measures – albeit with wide-ranging scopes – in response to complex economic, social and environmental challenges (Salet, 2007; Albrechts & Balducci, 2013, 2017). Previous studies acknowledged both local and supra-local (or structural) factors impacting the context-specific implementation of lsUDPs (Moulaert et al., 2003a; Salet & Gualini, 2007a; Albrechts & Balducci, 2013, 2017). Local governance factors, such as institutional capacity, coordination among public and private actors, and political leadership (Oliveira & Hersperger, 2018), intertwine with supra-local conditions, such as state re-scaling processes and devolution of state competencies in spatial planning, de-industrialisation and increasing social inequality (Albrechts & Balducci, 2017; Moulaert et al., 2003a; Oosterlynck et al. 2011). Hence, in implementing lsUDPs, multi-scalar factors act *in combination*.

Because the formulation and implementation of lsUDPs require multi-scalar coordination among coalitions of public and private actors over an extended period of time, they are generally linked to strategic spatial plans (SSPs) (Fainstein, 2008; Hersperger et al., 2018; Moulaert et al., 2003a; Salet & Gualini, 2007a). SSPs convey collective visions and horizons of action negotiated among public and private actors at the local and/or regional level to steer future urban development, and can contain legally binding dispositions, but also indicative guidelines (Albrechts, Healey, & Kunzmann, 2003; Albrechts & Balducci, 2013). SSPs characteristically concentrate spatial planning efforts on key strategic issues, such as lsUDPs, valorizing place-specific qualities and physical, social, cultural and economic assets (Albrechts, Balducci, & Hillier, 2017; Albrechts & Balducci, 2013; Hersperger et al., 2018; Salet & Gualini, 2007a).

Therefore, the key question remains as to what extent strategic urban projects and plans can be regarded as aligned. By alignment, or ‘concordance’, we mean that strategic projects are formulated and implemented as part of the strategic planning process (‘high concordance’), or that the strategic role of projects is reconfirmed in (subsequent) strategic plans (‘moderate concordance’; see Table 1 below). Lack of concordance is found when lsUDPs have been limitedly (or not at all) acknowledged in strategic spatial plans.

Following the literature cited above, we assume that certain local and supra-local factors, characterizing the development of the projects, foster (but not strictly ‘cause’) the degree of alignment between lsUDPs and SSPs. In this study, we empirically examine how, and to what extent, the concordance between 38 European large-scale urban development projects and strategic plans has been enabled by five multi-scalar factors: (i) the role of the national state, (ii) the role of (inter)national private actors, (iii) the occurrence of supra-regional external events, (iv) the degree of transport connectivity, and (v) local resistance from civil society.

Our goal is to identify recurrent patterns of combinations of these five factors that support the concordance between lsUDPs and SSPs across the 38 cases. In line with previous contributions (Moulaert et al. 2003a; Salet & Gualini 2007a), we adopted a (multi-data) case-based qualitative strategy for empirical research. However, different from

those contributions, we deem the formalized procedure of within- and cross-case comparison offered by fuzzy-set Qualitative Comparative Analysis (hereafter: fs-QCA; Ragin, 1987, 2008; Rihoux & Lobe, 2009) appropriate for the goal of this study. Based on set theory, QCA formally integrates contextual sensitivity to case specificities (within-case knowledge) with systematic comparative analysis (across-case knowledge; Byrne, 2005; Rihoux & Lobe, 2009; Rihoux & Ragin, 2009). Previous research has shown the appropriateness of QCA as a research approach and technique in facilitating context-dependent generalizations (Befani 2013) for comparative analyses of urban transformations and project implementation (Verweij & Gerrits, 2013; Verweij & Gerrits 2015; Gerrits & Verweij, 2018).

In the following sections, we first review the literature on the multi-scalar factors influencing the implementation of lsUDPs locally and the role of lsUDPs as vehicles for implementing strategic spatial plans. After detailing our strategy for empirical research, we present and discuss the findings, and conclude with some final remarks.

2. Implementing large-scale urban development projects

In this section, we focus on key international comparative studies that have provided comprehensive, multi-dimensional analyses and evaluations of the formulation, implementation and role of large-scale urban development projects in Western European urban regions and cities since the 1990s.

Swyngedouw, Moulaert, and Rodriguez (2002) and Moulaert, Rodriguez, and Swyngedouw (2003a) critically underline how lsUDPs have been part and parcel of a new market-led, neo-liberal urban policy agenda rooted in, as well as spurring, the commodification of urban space. This new urban policy has been an expression of a new political and economic neo-liberal regime spreading in European urban regions since the end of the 1980s (Harvey, 1989). It has been most clearly sustained by a shift in institutional and political arrangements, and more specifically by the re-scaling of the national state and by the growing importance of non-public actors in shaping urban transformations (Aalbers, 2013; Brenner, 1999). The progressive reduction in the availability of national funding apparently only coincided with a diminishing role of the state (Albrechts & Balducci, 2013). Rather, the public sector (primarily the national state, but also local and regional authorities) increasingly shouldered (real estate) investment by assuming the risks related to the valorization of private urban land rent. The diffusion and fragmentation of competencies and authority from national to sub-national public actors encouraged regional and local authorities to perform the role of ‘enablers, partners, and clients’ in realizing urban transformations (Swyngedouw et al., 2002, p. 566).

From this perspective, lsUDPs are driven by supra-regional structural factors stimulating urban actors to realize locally a specific type of urban change. lsUDPs represent a type of urban revitalization strategy aimed at ‘reassert[ing] the position of the city in the new global economic competitive climate’ (Rodriguez, Swyngedouw, & Moulaert, 2003, p. 34). These supra-regional structural factors are, among others, globalization, de-industrialisation, global financial markets, new technologies, state-rescaling processes and an increased importance of sub-national actors, interurban competition, a growing role of private investors in urban transformations, suburbanization, and increasing social and cultural diversity in cities (Albrechts et al., 2003, 2017; Albrechts, 2006; Healey, 2007; Salet & Gualini, 2007a; Fainstein, 2008; Oosterlynck et al., 2011). However, comparative

studies between the United States and Europe highlight the larger role still played by national governments in Europe, albeit in a shrinking welfare state (Fainstein, 2008), and also how opportunities for socio-spatial innovation can still be triggered by urban regeneration policies (Oosterlynck et al. 2011).

Recognizing this critical standpoint, Salet and Gualini (2007a) carried out an evaluation of the ‘strategic framing’ of lsUDPs as local, area-based initiatives of urban change. Strategic framing requires the concurrent action of both ‘local conditions for supra-local impacts’ characterizing the underlying rationale for the formulation and implementation of large-scale projects, and also ‘supra-local conditions of local transformations’ sustaining the realization of lsUDPs locally (Salet & Gualini 2007b, p. 273). Key attributes to evaluate the strategic framing of lsUDPs are: the role of private and public actors at the local, supra- and trans-regional levels (i.e. ‘strategic alliances’); political dynamics and coordination among actors between and across institutional scales (national and sub-national); multi-modal accessibility to regional, national and international transport infrastructures; the degree of ‘democratic legitimation’ of the project; and ‘the nature of conceptual integration of the project’ in (strategic) spatial plans in terms of urban morphology and functions (Salet & Gualini, 2007b, pp. 249–250).

Fainstein (2008) identifies similar key dimensions when examining the formulation and implementation of lsUDPs in different contexts, in particular regarding the degree of involvement of the national state, the different public-private cooperation dynamics and political scenarios, the key role of transit, and the spatial quality and social goals characterizing the projects. Furthermore, globalization and changing economic conditions (Albrechts & Balducci, 2017), as well as unforeseen external events (Verweij & Gerrits 2015), are important (supra-) regional conditions that can influence the governance dynamics related to a project’s formulation and implementation, as well as affecting project implementation directly (Hersperger et al., 2018).

As lsUDPs imply physical urban change, they are also unavoidably embedded in spatial planning traditions and tools. In particular, lsUDPs are linked to strategic spatial plans, as both strategic devices aim to steer a specific type of urban development and to respond to pressing economic, social and environmental challenges (Albrechts & Balducci, 2013, 2017; Hersperger et al., 2018; Moulaert et al., 2003a; Salet, 2007; Swyngedouw, Moulaert, & Rodriguez, 2003).

An analysis of lsUDPs hence must consider not only the multiple, multi-scalar factors for their formulation and implementation locally, but also the extent to which lsUDPs are integrated with SSPs. Examining the degree to which a demanding, collective endeavour such as a strategic spatial plan can be aligned with urban transformations concretely occurring in a certain location would clarify the added value of strategic plan-making, as well as actors’ capacity to use both tools (large-scale urban projects and strategic spatial plans) as strategic devices for urban land change (Hersperger et al., 2018; Salet, 2007).

In this study, we conceptualize the multi-scalar factors into five main dimensions (Table 1, columns 1–2). At the supra-regional level, we identify: (i) the role of the national state (STATE); (ii) the role of (inter)national private actors (PRIVATE); and (iii) the impact of external events, as well as processes of globalization and modernization (EVENTS). At the local and regional levels, we identify: (iv) the transport connectivity of strategic projects (TRANSP); and (v) the inclusion of civil society’s demands in project implementation (RESIST). Column 3 in Table 1 includes our theoretical

Table 1. Identified multi-scalar factors supporting the concordance between large-scale urban development projects and strategic spatial plans (columns 1–3) and their operationalization for QCA (columns 4–6). Source: authors' elaboration.

Supra-regional factors	References	Expectations	Set definition of condition	Indicators	Calibration
1. STATE: Role of the national state	Swyngedouw et al., 2002; Moulaert et al., 2003a; Salet & Gualini, 2007a; Hersperger et al., 2018	Considerable involvement of the national state in project implementation is sufficient for concordance.	Set of projects with considerable involvement of the state in project implementation.	(a) Direct funding from the state; (b) Construction of at least one (flagship) public building (e.g. libraries, universities, state institutions); (c) Political cooperation with sub-national government(s); (d) Project is a key strategic infrastructure at the national level.	State intervention: 1: High degree 0.67: Moderate degree 0.33: Low degree 0: Very low degree or absence
2. PRIVATE: Role of (inter)national private actors	Swyngedouw et al., 2002; Moulaert et al., 2003a; Salet & Gualini, 2007a; Fainstein, 2008; Hersperger et al., 2018; Oliveira & Hersperger, 2018	Considerable involvement of (inter)national private actors in project implementation is alone not sufficient to ensure concordance between strategic projects and plans. Involvement of (inter)national private actors has to be combined (AND) with involvement of the state.	Set of projects with considerable involvement of national and international stakeholders in project implementation.	(e) Key involvement of national or international private stakeholders (e.g. banks, investment funds, retail and e-commerce groups, ICT companies) in project formulation and implementation.	Involvement of national and international stakeholders: 1: High degree 0.67: Moderate degree 0.33: Low degree 0: Very low or absence
3. EVENTS: External (unforeseen) events, globalization trends	Albrechts, 2006; Salet, 2007; Verweij & Gerrits, 2015; Hersperger et al., 2018	Events or trends can facilitate concordance between strategic projects and plans because the project can be formulated and implemented as a 'response' to events. External (national and international) events or trends do not have an effect per se, but they stimulate actors locally to make a certain decision about project implementation. Events are punctual, while trends have a diffuse effect on project implementation.	Set of projects where external (unforeseen) events OR general/international trends had a large impact on project implementation.	(f) Influence of external (national and international) unforeseen events (e.g. failed/winning bid for the Olympic Games, land recycling opportunity after company closure) OR general global trends (e.g. fall of Iron Curtain/Berlin wall, 2008 financial crisis) on project formulation and implementation.	Influence of external events and trends: 1: High degree 0.67: Moderate degree 0.33: Low degree 0: Absence of external events and trends

Regional and local factors	References	Expectations	Set definition of condition	Indicators	Calibration
4. TRANSP: Transport connectivity of strategic projects	Salet & Gualini, 2007a; Fainstein, 2008	Connectivity to transport (road and transit) infrastructures facilitates concordance between strategic projects and plans because 'hub effects' are expected. High transport connectivity of a project is necessary, but not sufficient on its own, to ensure concordance between strategic projects and plans.	Set of projects with high transport connectivity (mainly road and transit). Projects in this set are 'transport hubs'.	(g) Degree of road connectivity of the project; (h) Degree of transit connectivity of the project. Transit connectivity is considered more important ('weights more') for the assignment of set-membership scores to cases.	Road and/or transit connectivity (transport hub): 1: High degree 0: Moderate/improvable or low degree
5. RESIST: Inclusion of civil society's demands	Moulaert et al., 2003a; Fainstein, 2008; Oosterlynck et al. 2011	(Inter)national environmental regulations and/or resistance from local and environmental groups can affect project implementation locally (e.g. required compensation actions, protests to the project itself and to its spatial quality, NIMBY episodes), causing delays and modifications of the initial project. Consideration of environmental concerns and local resistance is in itself not sufficient to ensure concordance between strategic projects and plans.	Set of projects where resistance delayed and/or modified project implementation.	(i) Presence of national or European environmental regulations (e.g. environmental assessment, noise and air pollution regulations); (j) Local resistance and conflicts related to environmental issues or land-use conflicts (e.g. noise and air pollution issues, protection of conservation areas).	Resistance to project implementation: 1: Strong 0.67: Moderate 0.33: Low 0: Absence of resistance to project implementation
Outcome	References	Definition	Set definition	Indicators	Calibration
6. CONCOR: Concordance between strategic projects and plans	Swyngedouw et al., 2002; Moulaert et al., 2003a; Salet & Gualini, 2007a; Fainstein, 2008; Hersperger et al., 2018	The outcome captures the extent to which strategic spatial plan(s) (re)confirm a project strategically and morphologically	Set of projects with a certain degree of concordance with the strategic plan(s). A high concordance between IsUDPs and SSPs occurs when the strategic project was formulated and implemented	(k) Strong role of city council in project implementation. (l) An influential political leader (at the urban or regional level) conceived and/or supported and/or consolidated consensus over project implementation.	1: The project stemmed from strategic spatial planning (high concordance) 0.67: The project is confirmed in strategic spatial planning

as part of the strategic planning process; a moderate concordance when the strategic role of projects is confirmed in (subsequent) strategic plans.

(m) Strong role of regional authority in project implementation.

(n) Strategic plan includes or confirms the project; Strength/ binding character of strategic spatial planning in steering project implementation.

(o) Overall strategic character/ scope of the project in the urban region, and/or synergy of the implemented project with other strategic projects in the urban region.

(moderate concordance)

0.33: The project is limitedly/superficially acknowledged in strategic spatial planning (low concordance)

0: No relationship between the project and strategic plan(s) (very low/absence of concordance)

expectations about the relative contribution of each identified condition to the alignment between projects and plans (the outcome, CONCOR). A distinctive characteristic of QCA as a research approach is that it also allows the formulation (and subsequent testing) of conjunctural hypotheses, which we do for the condition PRIVATE.

3. Methods

3.1. Case selection

We identified 35 lsUDPs¹ using the following criteria: geographical location (9 Western European urban regions: Amsterdam, Barcelona, Copenhagen, Hamburg, Lyon, Manchester, Milan, Stockholm, Stuttgart)², size (large-scale), site (city core or urban region; see column 6 in Table 2)³ and urban function (e.g. housing, transportation infrastructures, service and knowledge economic functions; see column 4 in Table 2). We deemed the site and urban function of each project to be particularly important, as lsUDPs can challenge the original centrality of the city by redistributing highly specialized and advanced activities throughout the larger urban region (see Salet, 2007, p. 6). Employing these criteria facilitated the selection of diverse large-scale urban development projects while still ensuring sufficient comparability (see Verweij & Gerrits 2015; Gerrits & Verweij, 2018).

3.2. Data collection and operationalization

In 2016, we performed 47 in-depth interviews with experts in urban and regional planning and lsUDPs (i.e. academics and practitioners) about the formulation, implementation and development (1990s–2010s) of each project, whose strategic relevance was also checked with the interviewees. On average, each interviewee answered questions on 3.1 lsUDPs, thus reducing sampling bias (see Tóth, Henneberg, & Naude, 2017, p. 200). Three lsUDPs (expansion of the Barcelona airport, realization of Lyon Part-Dieu and MediaCityUK) were subdivided into two cases because a clear differentiation between specific implementation stages was identified by the interviewees⁴ (Table 2). Therefore, from the initial 35 cases, the final number of analysed cases is 38.

Interviews were fully transcribed and analysed through MAXQDA (version 12.3, VERBI GmbH, Berlin, Germany), and intercoder agreement was evaluated on a sample of nine interviews (see Supplementary online material A). We also compiled ‘synthetic case descriptions’ (SCDs; Rihoux & Lobe, 2009) for each lsUDP (totalling more than 160 SCDs) to spot potential inconsistencies among interviewees’ accounts and to facilitate completion of the ‘calibration table’ for each case (see below). An online expert survey distributed to the interviewees (response rate 78%) helped systematise the information collected during the interviews. We also consulted both academic and gray literature on the case studies (see Supplementary online material I) to check for possible ambiguity and inconsistencies in the interview data, and to solve discrepancies between our assigned set membership scores and questionnaire values. Site visits were carried out to retrieve additional information on the selected cases.

For each case, we operationalized each condition and the outcome in terms of sets (column 4 in Table 1) following selected indicators (see (a)–(o) in column 5). Subsequently, we qualitatively assessed each project across the indicators and then

Table 2. Selected large-scale urban development projects and assigned set membership values. The ‘Labels’ column identifies the cases and combines the information in the columns ‘Urban Region’, ‘Description’ and ‘Considered timespan’. In the ‘Site’ column, ‘C’ indicates the location of the project in the city centre, ‘U’ in the larger urban region.

ID	Urban Region	Label	Description	Considered timespan	Site	STATE	PRIVATE	EVENTS	TRANSP	RESIST	CONCOR (outcome)
1	Amsterdam	ams_airport90–16	Schiphol Airport expansion	1990s–2010s	U	1.00	1.00	0.67	1.00	0.33	0.67
2		ams_almere80–16	New town Almere	1970s–2010s	U	1.00	0.33	0.00	0.00	0.00	0.67
3		ams_buiksloter00–16	Buiksloterham/Overhoek district urban renewal	2000s–2010s	C	0.00	0.33	0.67	0.00	0.00	0.67
4		ams_zuidas90–16	Amsterdam CBD Zuidas	1990s–2010s	U	1.00	1.00	0.67	1.00	0.33	0.67
5	Barcelona	bcn_airport00–16	El Prat Airport first expansion	1980s–1990s	U	1.00	0.67	0.00	1.00	1.00	0.67
6		bcn_airport80–90	El Prat Airport second expansion	2000s–2010s	U	0.67	0.33	1.00	0.00	0.00	1.00
7		bcn_parctecnologic80–00	Parc Tecnologic del Valles knowledge hub	1980s–2000s	U	0.33	0.33	0.67	0.00	0.00	0.33
8		bcn_santcugat80–16	Sant Cugat del Valles expansion	1980s–2010s	U	0.00	0.00	0.00	0.00	0.00	0.33
9	Copenhagen	bcn_zalport80–16	Barcelona port and logistic hub	1990s–2010s	U	1.00	0.67	0.67	1.00	1.00	1.00
10		cph_airport70–16	Kastrup Airport expansion	1970s–2010s	C	0.67	0.33	0.33	1.00	0.33	0.67
11		cph_orestad90–16	Ørestad	1990s–2010s	C	1.00	0.33	0.67	0.00	0.67	0.67
12		cph_oresundbri90–16	Øresund Bridge	1990s–2010s	U	1.00	0.67	0.67	1.00	0.67	0.67
13	Hamburg	cph_sydhavnen00–16	Sydhavnen urban renewal	2000s–2010s	U	0.33	0.67	0.00	0.00	0.33	0.33
14		ham_airport80–16	Fuhlsbüttel Airport expansion	1980s–2010s	C	0.33	0.33	0.00	0.00	0.33	0.33
15		ham_allermoehe80–16	Allermoehe housing expansion	1980s–2010s	U	0.00	0.00	0.33	0.00	0.33	0.33
16		ham_hafencity90–16	HafenCity urban renewal	1990s–2010s	C	0.00	0.67	0.67	0.00	0.00	0.67
17	Lyon	ham_ibawilhemsburg90–16	Harburg/IBA-Wilhemsburg urban renewal	1990s–2010s	U	0.33	0.67	0.67	0.00	0.67	0.67
18		lyo_airport70–16	Antoine de Saint-Exupery Airport	1970s–2010s	U	1.00	0.33	0.00	1.00	0.33	0.67
19		lyo_confluence90–16	Confluence urban renewal	1990s–2010s	C	0.33	0.67	0.33	0.00	0.33	0.67
20		lyo_partdieu00–16	Part-Dieu first urban renewal	1970s–1990s	C	0.67	0.67	0.00	1.00	0.33	1.00
21	Manchester	lyo_partdieu70–90	Part-Dieu second urban renewal	2000s–2010s	C	1.00	0.67	0.67	0.00	0.00	0.67
22		lyo_portedesalpes90–16	Porte des Alpes	1990s–2010s	U	0.67	0.67	0.00	0.00	0.33	1.00
23		man_airport80–16	Manchester Airport expansion	1980s–2010s	U	0.67	0.67	0.33	1.00	0.67	1.00
24		man_corridor00–16	The Corridor Manchester	2000s–2010s	C	0.33	0.67	0.00	0.00	0.00	0.33
25	Milan	man_mediacityuk00–16	MediaCity UK	1980s–2000s	U	0.67	1.00	0.33	0.00	0.33	0.67
26		man_salfordquays80–00	Salford Quays urban renewal	2000s–2010s	U	0.67	1.00	0.00	0.00	0.00	0.00
27		mil_airport80–16	Malpensa Airport expansion	1980s–2010s	U	1.00	0.33	0.33	0.00	0.67	0.33
28		mil_garibaldi80–16	Porta Garibaldi-Repubblica urban renewal	2000s–2010s	C	0.33	1.00	0.67	1.00	0.67	0.67
29	Stockholm	mil_rhofair90–16	Trade fair expansion	1990s–2010s	U	0.33	0.67	1.00	1.00	0.33	0.67
30		mil_rhoperohousing90–16	Rho Pero housing expansion	1990s–2010s	U	0.00	0.00	0.33	0.00	0.00	0.00
31		stk_airport80–16	Arlanda Airport expansion	1980s–2010s	U	1.00	0.67	0.33	0.00	0.67	0.67
32		stk_kistaict80–16	Kista ICT cluster	1980s–2010s	C	0.33	1.00	0.67	1.00	0.33	0.67
33		stk_wbypass70–16	Western Bypass (under construction)	1970s–2010s	U	1.00	0.33	0.00	0.00	1.00	0.67

(Continued)

Table 2. Continued.

ID	Urban Region	Label	Description	Considered timespan	Site	STATE	PRIVATE	EVENTS	TRANSP	RESIST	CONCOR (outcome)
34	Stuttgart	stu_airport80-16	Airport expansion	1990s–2010s	U	0.33	0.67	0.67	1.00	0.67	0.67
35		stu_euviertel90-16	Europa Viertel urban renewal	1990s–2010s	C	0.33	1.00	0.00	1.00	0.33	0.67
36		stu_ludwigsretail90-16	Ludwigsburg retail area	1990s–2010s	U	0.00	1.00	0.00	0.00	0.33	0.33
37		stu_messe90-16	Trade fair expansion	1990s–2010s	U	0.33	0.67	0.67	1.00	1.00	1.00
38		stu_scharnhauser90-16	Ostfildern Scharnhauserpark housing expansion	1990s–2010s	U	0.00	0.00	1.00	0.00	0.00	0.67

transformed (i.e. calibration) this qualitative information into fuzzy-set membership values (column 6 in Table 1). Fuzzy-set membership values range from 0 to 1, and should be conceived as ‘*fundamentally interpretative tools*’ that ‘operationalize theoretical concepts in a way that enhances the dialogue between ideas and evidence’ (Ragin, 2000, p. 162, original emphasis). We employed a four-value fuzzy-set scale (0, 0.33, 0.67, 1) to ‘quantify’ into set membership scores the individual histories of cases retrieved from interview data (see Gerrits & Verweij, 2018). The condition TRANSP was calibrated as a crisp-set (0, 1).⁵ The resulting calibrated dataset is shown on the right-hand side of (columns 7–12) Table 2.⁶

The translation of qualitative case-based information into numerical fuzzy-set membership values was iteratively performed by populating a calibration table (Legewie 2017; Tóth et al., 2017). Our use of different data for calibration supports internal validity (de Block & Vis, 2018; Thomann & Maggetti, 2017) and stimulated us to refining our conceptual definition of outcome and conditions.

4. Enabling conditions for the concordance between lsUDPs and SSPs

Following standard procedures and good practices in QCA, the data analysis proceeded with the steps detailed in the following subsection (4.1). We subsequently connect the results with the considered cases by examining the different paths that are empirically associated with a high concordance between project implementation and strategic spatial plans in subsections 4.2 and 4.3.

4.1. Truth table and intermediate solution

In a first step, we completed an analysis of necessity⁷ and determined that there are no necessary conditions.⁸ In set theoretic terms, this means that no single condition is a superset of the outcome, i.e. for a high concordance between large-scale urban development projects and strategic plans to occur, presence or absence of the conditions is not implied.

Second, the information contained in columns 7–12 of Table 2 was condensed into a truth table (Table 3), where fuzzy-set values below 0.5 are displayed as 0s and values above 0.5 are represented by 1s. With the five conditions, a total of $2^5=32$ combinations (or rows) are possible. For each truth table row, we then assigned a value of 1 (presence) or 0 (absence) to the outcome, according to how consistently the empirical evidence in each row is related to the outcome. In our study, we set a consistency threshold of 0.91⁹ to differentiate the truth table rows where the outcome is supported (24 cases) from the rows where it is not (13 cases, highlighted in light gray in Table 3).¹⁰ In set-theoretic terms, when a row (representing a combination of conditions) is consistent with (or sufficient for) the outcome, it is a subset of the outcome. However, 12 rows in Table 3 are not associated with any case, and therefore it is unclear if they can be considered sufficient for the outcome (marked with a ‘?’). These rows are called logical remainders and are highlighted in darker gray in Table 3.

In the truth table (Table 3), out of 24 cases displaying the outcome, 9 occupy a single row, hence ‘spreading out’ in the truth table instead of clustering into fewer truth table rows. This indicates both the unique ‘road’ of each lsUDP to reach concordance with

Table 3. Truth table. In the column 'Cases', values after the '|' sign indicate the fuzzy-set membership score of each case in the outcome.

Row	STATE	PRIVATE	EVENTS	TRANSP	RESIST	CONCOR	No. Cases	Consistency	PRI	Cases
16	0	1	1	1	1	1	3	1.000	1.000	mil_garibaldi80-16 0.67,stu_airport80-16 0.67,stu_messe90-16 1
15	0	1	1	1	0	1	2	1.000	1.000	mil_rhofair90-16 0.67,stk_kistaict80-16 0.67
19	1	0	0	1	0	1	2	1.000	1.000	cph_airport70-16 0.67,lyo_airport70-16 0.67
25	1	1	0	0	0	1	2	1.000	1.000	lyo_portedesalpes90-16 1,man_mediacityuk00-16 0.67
28	1	1	0	1	1	1	2	1.000	1.000	bcn_airport00-16 0.67,man_airport80-16 1
31	1	1	1	1	0	1	2	1.000	1.000	ams_airport90-16 0.67,ams_zuidas90-16 0.67
32	1	1	1	1	1	1	2	1.000	1.000	bcn_zalport80-16 1,cph_oresundbri90-16 0.67
11	0	1	0	1	0	1	1	1.000	1.000	stu_euviertel90-16 0.67
13	0	1	1	0	0	1	1	1.000	1.000	ham_hafencity90-16 0.67
14	0	1	1	0	1	1	1	1.000	1.000	ham_ibawilhemsburg90-16 0.67
17	1	0	0	0	0	1	1	1.000	1.000	ams_almere80-16 0.67
21	1	0	1	0	0	1	1	1.000	1.000	bcn_airport80-90 1
22	1	0	1	0	1	1	1	1.000	1.000	cph_orestad90-16 0.67
26	1	1	0	0	1	1	1	1.000	1.000	stk_airport80-16 0.67
27	1	1	0	1	0	1	1	1.000	1.000	lyo_partdieu00-16 1
29	1	1	1	0	0	1	1	1.000	1.000	lyo_partdieu70-90 0.67
18	1	0	0	0	1	0	2	0.907	0.663	mil_airport80-16 0.33,stk_wbypass70-16 0.67
9	0	1	0	0	0	0	4	0.796	0.396	cph_sydhavnen00-16 0.33,lyo_confluence90-16 0.67,man_corridor00-16 0.33,stu_ludwigsretail90-16 0.33
5	0	0	1	0	0	0	3	0.769	0.502	ams_buiksloter00-16 0.67,bcn_parctecnologic80-00 0.33,stu_scharnhauzer90-16 0.67
1	0	0	0	0	0	0	4	0.642	0.140	bcn_santcugat80-16 0.33,ham_airport80-16 0.33,ham_allermoehe80-16 0.33, mil_rhoperohousing90-16 0
2	0	0	0	0	1	?	0	-	-	
3	0	0	0	1	0	?	0	-	-	
4	0	0	0	1	1	?	0	-	-	
6	0	0	1	0	1	?	0	-	-	
7	0	0	1	1	0	?	0	-	-	
8	0	0	1	1	1	?	0	-	-	
10	0	1	0	0	1	?	0	-	-	
12	0	1	0	1	1	?	0	-	-	
20	1	0	0	1	1	?	0	-	-	
23	1	0	1	1	0	?	0	-	-	
24	1	0	1	1	1	?	0	-	-	
30	1	1	1	0	1	?	0	-	-	

an SSP, and therefore the high case diversity included in our analysis. Technically, while this indicates that issues of limited diversity do not characterize our data, it also implies that more, and more diverse, information is fed into the subsequent step of fs-QCA (see below), potentially yielding less parsimonious results. Nevertheless, the diversity in our dataset suggests the effectiveness of our calibration process to capture each projects' trajectory, and highlights the added value of QCA as a diversity-oriented research approach and method (Ragin, 2000) as the complexity of the phenomenon under study can be accounted for, avoiding oversimplifications.

Table 3 additionally shows that four cases displaying the outcome (Amsterdam Buikslooterham/Overhoek, Lyon Confluence, Stockholm Western Bypass and Stuttgart Scharnhauser Park) are included in truth table rows where the evidence was deemed insufficient for the outcome (light grey area). This is a rather common situation when performing fs-QCA, as cases have multiple memberships in all truth table rows. This suggests that lsUDPs with a predominant mixed-use or residential function (i.e. the majority of the cases that do not show the outcome, as well as the four inconsistent cases mentioned above) are not appropriately captured by the selected five conditions. Therefore, in what follows, we present the results of QCA for only the 24 cases showing the outcome under consideration.¹¹

In a final step, the information contained in the rows of the truth table that were considered sufficient for the outcome were summarized to find more general pathways (i.e. minimisation¹²; Ragin, 1987, 2008; Schneider & Wagemann, 2012; Befani 2013; Gerrits & Verweij, 2018). Results for the intermediate solution¹³ are shown in Table 4.

As shown in Table 4, QCA enables the identification of non-mutually exclusive, alternative combinations of conditions or pathways (conjunctural causation) associated with the same outcome (equifinality). A substantial part of the variation in our cases is captured by the first solution term (STATE*PRIVATE), covering the majority of the cases (58.3%), and by the third solution path (PRIVATE*EVENTS), comprising 48.5% of the cases.

Taking inspiration from core and peripheral conditions as in Fiss (2011), we applied the distributivity rule (Schneider & Wagemann, 2012, p. 48) to the five identified pathways

Table 4. Results for the intermediate solution for the presence of the outcome (see Supplementary online material F for details and the solution plot). Uppercase letters represent presence; lowercase letters represent absence.

Pattern	Combination/ Solution path	Consistency	PRI	Raw coverage	Unique coverage	Uniquely covered cases
State-supported	1 STATE*PRIVATE	0.954	0.897	0.583	0.072	stk_airport80-16; bcn_airport00-16, man_airport80-16
	2 STATE*resist	0.948	0.877	0.512	0.044	ams_almere80-16; cph_airport70-16, lyo_airport70-16
	4 STATE*EVENTS*transp	1.000	1.000	0.171	0.015	cph_orestad90-16
Region-bounded	3 PRIVATE*EVENTS	1.000	1.000	0.485	0.101	ham_hafencity90-16; ham_ibawilhemsburg90-16; mil_garibaldi80-16, stu_airport80-16, stu_messe90-16
	5 PRIVATE*TRANSP*resist	1.000	1.000	0.257	0.015	stu_euviertel90-16
	Overall intermediate solution	0.934	0.885	0.801		

(‘recipes’) enabling concordance between lsUDPs and SSPs.¹⁴ Factoring out the role of the core conditions (STATE for paths 1, 2 and 4; PRIVATE for paths 3 and 5), we group the five pathways into two main ‘patterns’ (see column 1 in Table 4), which we label ‘state-supported’ and ‘region-bounded’.

As QCA is a qualitative, but formalized, method for systematic within and cross-case comparative analysis, researchers should interpret the obtained results by ‘going back’ to the cases (Ragin, 2000; Rihoux & Lobe, 2009; Gerrits & Verweij, 2018). For brevity, we will describe only some of the 37 cases¹⁵ in more detail. These were chosen according to the following (non-mutually exclusive) criteria: cases are i) good examples of a path; i) uniquely covered by a path; iii) well-known in the literature; iv) are the three cases that we split into two configurations (see subsection 3.2 and footnote 3).

4.2. The ‘state-supported’ pattern

The first solution term (STATE*PRIVATE) indicates that concordance between lsUDPs and strategic plans can be reached when both the national state and (inter)national actors are highly involved. Cases following this pattern are key transport infrastructures (i.e. airports) and highly specialized areas (e.g. logistic areas and central business districts). For instance, in the case of Amsterdam Zuid As, powerful private stakeholders (national bank and financial players) played a strong role, and this backing was combined with substantial support from the Dutch national state, mainly through the financing of transport infrastructures (Gualini & Majoor, 2007). As one of the interviewees reported, ‘In this PPP [public-private partnership] (...) there was a lot of public money (...) This [the project] couldn’t be worked out without public money’.¹⁶ The Dutch state considered Zuid As strategic because of the associated top tier tertiary sector economic activities, but also because it lies at the centre of the three axes, Schiphol, Zuid As and Almere.

The case of the second expansion of the Barcelona El Prat airport (*bcn_airport00-16*) is uniquely covered by STATE*PRIVATE. The Spanish state poured substantial resources into further expanding the Barcelona airport through the construction of a new main terminal that would flank the previous terminal built for the 1992 Olympic Games. In this second expansion phase, (inter)national private actors (PRIVATE) have been particularly important in fostering Barcelona as a ‘brand’ in the global economy, as stated by one of the interviewees:

The airport is a good illustration of how Barcelona found a location on the map of the global economy. (...) The Olympic Games triggered the first big “jump” of Barcelona on the world city map. (...) The airport is one of our main industries.¹⁷

The second expansion of the Barcelona airport (*bcn_airport80-90*) is a clear example of the fourth path (STATE*EVENTS*transp), where national funds (STATE) were released to accommodate visitors for the Olympic Games in the 1980s (EVENTS), even when Barcelona airport did not yet play the role of a transport hub for the larger urban region (transp). Among other alternative paths to the outcome (Table 4), the fourth path shows how an international event can be insufficient in itself, but a necessary condition if combined with state funding to produce concordance between project implementation and strategic planning (INUS; Rihoux & Lobe, 2009), even in the absence of high transport connectivity. Another illustration of this path is the implementation of Lyon Part-Dieu at

the end of the 1970s, when the French central state (STATE) took advantage of the closing down of the Part-Dieu military quarter, an 'external unforeseen event' at the national level (EVENTS), to initiate urban renewal of the district, which did not yet hold a role as a transport hub (transp). The more recent renewal of the Part-Dieu district (also included in STATE*PRIVATE) has been very much related to real estate demands for office space and to the role of Lyon as a second-tier city after Paris. As one of the interviewees reported:

For a long time, undertaking urban development for specialised tertiary functions remained, since the mid-1970s, tied to the national plans. Now we [in Lyon] are in a different development stage, characterised by an intensification of the tertiary functions because there is a political will to turn Part-Dieu into a big European central business district (...). In this "phase 2", the president [of the Lyon urban region, as well as mayor of Lyon] wants to create a *lyonnaise* skyline.¹⁸

The fourth pathway (STATE*EVENTS*transp) uniquely covers the case of Copenhagen Ørestad. The Danish state orchestrated the formulation and implementation of the Ørestad new town with a twofold aim: first, to make Copenhagen more attractive for investors after the fall of the Iron Curtain; and second, to boost Denmark's capital, which was in a difficult economic situation at that time. Ørestad was thus a state-supported device to respond to both international and national challenges facing Copenhagen.

The second path (STATE*resist) groups lsUDPs where high concordance with SSPs is enabled by considerable involvement of the national state combined with low resistance from local civil society, particularly regarding environmental issues and land-use conflicts. This second path also covers a substantial number of cases (51.2%). An example is the de-industrialised area of Manchester Salford Quays, which was defined as an enterprise zone and benefitted from the national funding schemes of the 1980s, as well as from the Millennium Funding for celebration of the year 2000. Substantial resources were used for land remediation to make the area apt for urban renewal. Local resistance was weak, and there was even scepticism that any redevelopment would have been possible in Salford. One of the interviewees recalled:

Everyone said this is just impossible, the idea of people going out to Salford Docks; they would probably go and see a theatre show and they would come back and their car would have been rolled into the water by unemployed youths. You know, lots of prejudice about the area.¹⁹

MediaCityUK is the further development of Salford Quays, its construction being catalysed by the relocation of some BBC studios outside London. The main criticism about MediaCityUK concerns the high rate of land ownership by one private actor (around 30%, including the docks; see Dembski, 2015). The concordance with strategic spatial planning differs for Salford Quays and MediaCityUK: while no comprehensive strategic plan was emplaced in the first case²⁰, in the second case the area was considered highly strategic in the first strategic spatial plan for Greater Manchester.

4.3. The 'region-bounded' pattern

The strategic projects included in pathways three and five hold a more regional character, as they have been initiated by regional authorities and/or local governance actors, thus

relying less on state support. Two uniquely covered cases by the path PRIVATE*EVENTS are the urban renewals of Hafencity and Wilhelmsburg in Hamburg. In the former, an important (inter)national stakeholder has been the Hamburg Port Authority, which has historically developed a symbiosis with Hamburg city(-state). The unforeseen events of the fall of the Iron Curtain and the reunification of Germany at the end of the 1980s put Hamburg in a more prominent place within Germany, as well as internationally. There was hence a need to expand and modernize the port accommodating new demands for containerization (Gerrits, 2011). An agreement was reached behind closed doors between the then mayor of Hamburg and the Hamburg Port Authority, where roughly 10% of the port would 'return' to the city (i.e. Hafencity) so that, through its redevelopment, the new port terminal could be funded. The strategic role of HafenCity increased over time, as confirmed in subsequent strategic spatial plans (Walter, 2007). In the case of Hamburg Wilhelmsburg, an unsuccessful bid for hosting the 2006 Olympic Games and a successful bid for hosting the 2013 edition of the *Internationale Bauausstellung* (IBA) (EVENTS) stimulated governance actors to devise an overall spatial strategy for the district and its surroundings, in tight cooperation with private actors (Vogelpohl & Buchholz, 2017, p. 217).

The path PRIVATE*EVENTS uniquely covers the case of Milan Garibaldi-Repubblica. The rising importance of real estate investments connected to financial markets during the early 2000s was a key international event – connected to the key role played by international stakeholders in the PRIVATE condition to stimulate the redevelopment of an area which had lost momentum. Its high multi-modal accessibility (regional railways, two metro lines, road connectivity) turns the project into 'the most accessible place in Lombardy, one of the most accessible places in Northern Italy'.²¹ The 2016 strategic spatial plan for the Milan urban region (limitedly the 2006 SSP) confirms the strategic role of the project as the new central business district (CBD) of Milan.

The fifth path (PRIVATE*TRANSP*resist) is illustrated by the case of Europa Viertel in Stuttgart. Adjacent to Stuttgart's main railway station, the area is an output of the larger, and later highly contested, Stuttgart21 project. Most funding was procured from the *Land* of Baden-Wuerttemberg and the German federal railway company (*Deutsche Bahn*); the latter, as a legally privatized but publicly owned stakeholder (Novy & Peters, 2012), first proposed the idea to renovate Stuttgart's main railway station, which is a national transport hub. This project's concordance with the regional strategic spatial plan stems from the overall integration of Stuttgart21 into the comprehensive spatial development strategy for the Stuttgart urban area and region, as well as its tight connection with the sectorial plans for transport infrastructures, a specific competency of the Stuttgart regional authority (*Region Verband*).

5. Concordance between Western European large-scale urban development projects and strategic spatial plans

Large-scale urban development projects (lsUDPs) and strategic spatial plans (SSPs) are both strategic devices requiring a multi-scalar coordination effort across different actors and levels for their formulation and implementation (Hersperger et al., 2018; Salet, 2007). The key question addressed in this study is to what extent lsUDPs and SSPs can be regarded as aligned.

Our analysis shows that, for the selected 38 Western European cases, and from the combination of the five identified factors, there are five pathways enabling concordance between large-scale urban development projects (lsUDPs) and strategic spatial plans (SSPs). We group these pathways into a two 'pattern-based' solution. The identification of both pathways and patterns across individual cases corresponds to context-dependent generalizations (Befani 2013; Verweij & Gerrits 2015; Gerrits & Verweij, 2018) or 'case-crafted theories' from which it is possible to limitedly generalize.

The first pattern, labelled 'state-supported', includes three pathways and highlights the crucial role of the national state as core condition in enabling the alignment of lsUDPs and SSPs. This pattern mostly includes projects with a specialized function at the national level, such as airports or central business districts. This pattern however does not confirm one of our expectations that the condition STATE can be sufficient on its own (i.e. a single pathway) for the outcome (see Table 1). Rather, the impact of the national state must be combined with other conditions (conjunctural causation). In particular, considerable involvement of the national state (STATE) together with a strong role of (inter)national private actors (PRIVATE) appears to strongly support concordance between lsUDPs and SSPs. This latter pathway appears to be in line with our expectations (see Table 1), as well as with previous contributions (Fainstein, 2008; Hersperger et al., 2018; Moulaert et al., 2003a; Oliveira & Hersperger, 2018; Salet & Gualini, 2007a; Swyngedouw et al., 2002), and covers a substantial part of the cases (58.3%).

Our analysis also highlights that large-scale urban development projects implemented during the mid-1970s, but still holding a strategic role at the urban regional level nowadays, show alignment with subsequent strategic plans when a considerable involvement of the national state was combined with low local resistances to the project (STATE*resist), covering 51.2% of the cases.

The second pattern (labelled 'region-bounded') emphasises the role of (inter)national private actors (PRIVATE) in supporting the concordance between lsUDPs and SSPs. The projects included in this pattern have a more regional character and function than the projects included in the state-supported pattern. In the region-bounded pattern, the main pathway, comprising 48.5% of the cases, highlights the combination between considerable involvement of private actors (PRIVATE) and (inter)national unforeseen events (EVENTS) to be particularly relevant for the alignment between strategic projects and plans. Furthermore, a considerable involvement of (inter)national private actors appears to enable concordance between lsUDPs and SSPs when the project holds a clear function as a transport hub (see pathway 5 in Table 4).²²

We are aware of important challenges characterizing our study. First, the identified context-dependent generalizations in the form of pathways and patterns are not mechanisms, because the explanation of why a certain case belongs to a certain configuration has to be searched for within its individual history, as well as by the use of other methods for social inquiry, for instance through process tracing or case-study (comparative) research (Schneider & Rohlfing, 2013). This is especially valid for those cases identified as negative or inconsistent²³: our analysis demonstrates that lsUDPs with a predominant mixed-use or residential function are not adequately captured by the selected five conditions (because they are not 'strategic' enough?) and are thus in need of further scrutiny. This finding is in line with the intrinsic ambiguity of mixed (or multiple) land use areas as a spatial planning concept and strategy (see e.g. Hoppenbrouwer & Louw, 2005).

Second, the calibration of qualitative data from narrative interviews is a challenging task, in particular regarding potential issues of internal validity (de Block & Vis, 2018; Thomann & Maggetti, 2017; Verkuilen, 2005). However, the use of a multi-data and multi-method empirical strategy allowed us to gain in-depth case-based knowledge that ‘grounded’ our calibration process to the selected cases. We structured calibration in a table following recent good practices in QCA research (Tóth et al., 2017)²⁴, thus strengthening the accountability of the assigned set membership scores. However, our understanding of how the formulation and implementation of large-scale urban transformations in European cities since the 1990s can align with strategic spatial plans as collective endeavours could be improved in further research by the inclusion of other urban projects, e.g. from Eastern Europe.

Third, we did not operationalize the temporal sequence of events when accounting for the urban development trajectory of the selected cases through set membership scores. While the time dimension is a general issue characterizing QCA as a ‘static’ method (Schneider & Wagemann, 2012, ch. 10), our qualitative case-based research approach mitigated this limitation when interpreting the results of the performed fs-QCA by taking advantage of our in-depth knowledge of the selected lsUDPs. As noted by Gerrits and Verweij (2018, p. 121), large-scale (infrastructure) projects are multi-decade ‘dynamic programs’, where the projects’ trajectories over time can be narratively accounted for. At this regard, we think that our approach to split some cases into different configurations (see subsection 3.2) could be explored further as a strategy to integrate into QCA different development stages of the cases.

In sum, by combining a qualitative, multi-data research approach with qualitative comparative analysis (QCA), through this study we contribute to identifying five pathways and two patterns enabling the concordance between large-scale urban development projects (lsUDPs) and strategic spatial plans (SSPs). Although based on a broad comparative analysis across diverse Western European cases, our findings contextually specify under which conditions the alignment between large-scale strategic projects and plans can be expected.

Notes

1. See section 3.2 about the number of cases.
2. The study here presented is part of the research project CONCUR, which examines how strategic spatial planning affects land change in urban regions. For more details, see Supplementary online material A.
3. Data for size and site were retrieved using Copernicus (2016) data.
4. Each implementation stage was assumed to be related to a different combination of conditions.
5. As none of the selected projects showed a high deficiency in transport connectivity, TRANSP was skewed towards high membership, causing issues of simultaneous subset relationships. As suggested by Schneider and Wagemann (2012, p. 245ff), we re-calibrated this condition into crisp-set-membership values.
6. The dataset is available at <http://doi.org/10.16904/envidat.89>.
7. In this study, we used the “QCA” (Duşa, 2019) and “SetMethods” (Oana & Schneider, 2018) R packages.
8. The analysis of necessity was carried out on 38 cases (see Supplementary online material C and G for details).

9. “Jumps” in consistency cut-off values usually supports researchers’ choices. Our consistency threshold is higher (0.91) than the “usual” recommended threshold of 0.85 (Ragin, 2000, 2008). However, other authors using qualitative interview data employed a similar value (Tóth et al., 2017, p. 200; Hirschhorn, Veeneman, & van de Velde, 2019). Furthermore the skewedness of CONCOR towards high membership (see Schneider & Wagemann, 2012, p. 244ff) affected the higher consistency values, therefore conventional consistency thresholds for sufficiency and necessity should be carefully interpreted (Thomann & Maggetti, 2017).
10. The case Salford Quays (*man_salfordquays80-00*) and MediaCityUK (*man_mediacityuk00-16*) clustered in the same truth table row, however displaying a different outcome (true logical contradiction, TLC, see Schneider & Wagemann, 2012, p. 185). One strategy to deal with TLCs (see Gerrits & Verweij, 2018, p. 110) is to delete the case Salford Quays to retain the more recent information on MediaCityUK. Therefore, we performed the analysis of sufficiency on 37 cases. However, in section 4.2 we also account for Salford Quays in connection to MediaCityUK.
11. For the analysis of the negated outcome, see Supplementary online material G.
12. In our study, we employed the Quine-McCluskey algorithm.
13. Directional expectations were set to “1”, except for RESIST, set as “-” (“don’t care”); logical remainder rows used for minimisation are 23, 24, 30 in Table 3. Results for the conservative and parsimonious solutions are included in the Supplementary online material D and E.
14. The intermediate solution would hence be: STATE*(PRIVATE + resist + EVENTS*transp) + PRIVATE*(EVENTS + TRANSP*resist) => CONCOR.
15. See footnote number 10.
16. Amsterdam interview 5, 15 September 2016.
17. Barcelona interview 1, 27 June 2016; our translation from original Spanish.
18. Lyon interview 1, 1 October 2016; our translation from original French.
19. Manchester interview 6, 10 November 2016.
20. See footnote 10.
21. Milan interview 2, 15 June 2016; our translation from original Italian.
22. See Supplementary online material F for details on multiple covered cases in the intermediate solution.
23. See Supplementary online material G.
24. See Supplementary online material B.

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