BUILDING CLUSTERS WITHOUT TRUST: GOVERNMENT AS A RELATIONAL ARCHITECT IN INDUSTRIAL CLUSTER FORMATION

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Building clusters without trust: Government as a relational architect in industrial cluster formation

Abstract

Industrial clusters in developing economies often confront a paradox: engineered by state policy yet lacking the pre-trust and shared norms that drive organic networks. Drawing on two industrial clusters in Iran, we unpack how government actors become "relational architects," scaffolding structural and cognitive dimensions of social capital to seed collaboration where trust is absent. However, our study also warns that heavy-handed, top-down site selections and mandated partner mixes can fracture the nascent bonds they intend to forge. In contrast, well-placed intermediaries and collaboratively crafted capacity-building forums can repair those fractures, allowing genuine trust to emerge—though only after sustained, state-mediated interaction. By questioning the long-held belief that trust must precede collective action, we demonstrate a reversed sequence: structural links and cognitive alignment can give rise to relational capital over time. These insights offer a cautionary implications for policy: instead of simply transplanting blueprints, policymakers must blend directive measures with authentic, context-sensitive facilitation if they hope to build resilient, trust-based clusters.

Keywords: Social capital; Structural capital; Cognitive capital; Relational capital; Government intervention; Industrial cluster; Developing economy

1 Introduction

Industrial clusters, geographic concentrations of interconnected firms in a specific industry, have long been seen as engines of regional economic growth (Maskell and Malmberg, 1999). However, proximity alone does not generate the synergies needed for innovation and productivity; collaboration, shared knowledge, and trust are essential (Cooke, 2001, Inkpen and Tsang, 2005), or the social capital, is widely recognized as a key ingredient for cluster success (Capello and Faggian, 2005).

In principle, social capital encompasses three dimensions (Nahapiet & Ghoshal, 1998): structural (network configuration among actors - including ties, roles, and rules); cognitive (shared language, values, and narratives); and relational (trust, norms, and obligations) (Al-Tabbaa and Ankrah, 2019, Burton and Vu, 2021, Lorenzen, 2007). These dimensions reinforce one another, enabling knowledge exchange, co-innovation, and collective action (Nahapiet and Ghoshal, 1998, Zheng, 2010). Yet, while social capital is critical for mature clusters (Staber, 2007), newly forming clusters often lack (naturally) these such capitals. This is especially problematic in developing economies, where clusters are often engineered by the state rather than emerging organically (McDermott et al., 2009, McDermott and Corredoira, 2010). Here, the state plays a proactive role in providing incentives, resources, safeguarding mechanisms, and planning frameworks (Vernay et al., 2018), especially where weak institutions and infrastructure hinder bottom-up collective action (Prevezer, 2008). Critically, while some researchers argue that such interventions are vital (Liu et al., 2023, Vernay et al., 2018, Zhong and and Tang, 2018), others warn that excessive involvement can crowd out the cluster organic collaboration (Burfitt and Macneill, 2008, Duranton, 2011, Lehmann and Menter, 2018).

Amid this debate, it is noticeable that little attention has been paid to how government interventions influence the formation of social capital. Studies have examined the effects of

government policy on innovation networks (Richardson, 2013), yet often overlook how trust, norms, and mutual understanding are cultivated—or undermined—by policy (Mueller and Jungwirth, 2016, Parrilli, 2024). Furthermore, most studies adopt static or snapshot views of social capital (Al-Tabbaa and Ankrah, 2016), neglecting the *temporal dynamics* of how it forms across the cluster lifecycle (Lehmann and Menter, 2018, García-Villaverde et al., 2018).

We address these gaps by examining two government-engineered clusters in Iran's underdeveloped Sistan and Baluchistan province—one in carpets, the other in fisheries—regions marked by institutional voids and low trust (Karna et al., 2013). Drawing on social capital theory, we explore how government interventions both facilitated and frustrated the emergence of structural, cognitive, and relational capital. Using the social capital theory, we analyze *how government interventions helped or hindered the emergence of social capital.* Through in-depth interviews and document analysis, we trace the formation stage (from initial mobilization to early post-launch), focusing on how state interventions shape each dimension of social capital. We show that government actors served as network brokers and vision-setters, effectively substituting for trust in the early stages. Over time, as actors interacted within the structured environment, relational trust gradually built up. In the absence of pre-existing trust, these findings highlight a different sequence of social capital development: structural and cognitive capital precede and generate relational capital.

Reflecting on these findings, overall, our contribution is threefold. First, we offer a critical reassessment of trust in cluster formation, showing that it can be developed through institutional scaffolding rather than being an entry condition. Second, we provide a social capital-informed framework for categorizing cluster formation challenges and government responses. Third, we highlight contextual contingencies (cultural factors and state–firm relations) that mediate social capital dynamics, offering practical insights for policymakers in similar settings.

2 Methodology

This research draws on a comparative case study of two industrial clusters in Sistan and Baluchistan province, a peripheral region in southeastern Iran. These clusters were selected due to their contrasting industrial orientations and socio-economic profiles, offering a unique opportunity to investigate the role of government in facilitating inter-organizational collaboration under conditions of weak institutional infrastructure and low initial trust.

The first case is a carpet cluster, established in 2017 by the Small and Medium Industrial Towns Company (SMIT), a public agency under the Ministry of Industry, Mine, and Trade. The cluster includes over 20 stakeholders (carpet weavers, designers, raw material suppliers, and exporters) organized around a structured three-year development program aimed at fostering collaborative capability before transitioning to autonomous governance. The second case is a fishery cluster developed between 2015 and 2018 in Baluchistan, leveraging the region's access to marine resources. This cluster unites firms across the fishery value chain (e.g., fish processing, distribution, and canning) and is coordinated by a multi-stakeholder committee involving government agencies, NGOs, and private firms. The cluster's strategy emphasized productivity enhancement, market expansion, and the adoption of shared standards and technologies. In both cases, the clusters were not emergent networks of cooperating firms but deliberately engineered initiatives that required state-led coordination to overcome initial fragmentation and distrust.

For data collection, we employed purposive sampling to identify 30 stakeholders directly involved in the planning, coordination, or operation of the clusters (see Table 1). These included firm owners, public sector officials, cluster managers, and intermediary actors, based across four cities in the province. Semi-structured interviews were conducted with these participants, each lasting 60–90 minutes. All interviews were recorded, transcribed verbatim, and analyzed in their original language to preserve contextual nuance.

[Table 1]

An interview protocol guided the conversations, focusing on stakeholders' experiences with collaboration, the role of government, and the evolution of trust and engagement within the cluster. The protocol was refined through two pilot interviews. We also collected secondary data (including government reports, media interviews, internal newsletters, and websites) to triangulate insights and contextualize stakeholder narratives.

For data analysis, we conducted a deductive-inductive, grounded analysis of our interview data, first open-coding transcripts to identify concepts around social interactions, trust, norms, and government actions. We then compared codes within each cluster and across the two cases, clustering them into higher-order themes and finally mapping these onto the three social-capital dimensions. We paid careful attention to temporal sequencing (pre- vs. post-formation) and classified each government intervention as either top-down (directive policies and mandates) or bottom-up (participatory facilitation). This two-by-two coding frame allowed us to trace how different intervention styles influenced each dimension over time. To ensure robustness, we iterated between new and existing codes, cross-case comparisons, and triangulation with secondary documents, grounding our evolving framework in both data and the broader literature on processual cluster dynamics.

3 Findings

3.1 Government's double-edged role in shaping cluster structural capital

In our context, structural social capital refers to the overall pattern of connections among actors, including network ties, interaction frequency, and communication channels linking cluster members and supporting. Our analysis found that government actions during the cluster pre-formation stage had a profound effect on the emergence of these network ties. In particular, several interviewees noted that insufficient attention to geographical proximity in the government's initial

cluster planning hindered regular inter-firm interactions. As such, the national cluster mapping strategy (a top-down process that determined which cities and firms to include), did not fully account for the vast distances between key actors. For example, one interviewee explained that the mapping and feasibility study for the fishery cluster identified member firms and agencies were scattered, which severely limited their interactions. Also, a technical advisor from the fishery cluster recounted:

> *"Distance was a problem when developing our cluster. Most of the government agencies are located in the province capital, while the fishery cluster was located in Chabahar and Konarak cities (a distance of about 700 km). It made the authorities of these government agencies unable to meet regularly with the cluster's potential beneficiaries and other actors… therefore their roles had become colorless"* (Technical Advisor, F13).

This lack of spatial and social proximity early on had a detrimental effect on structural capital, as stakeholders struggled to establish frequent communication or attend joint meetings. As a result, initial opportunities for networking were missed, and the groundwork for future collaboration was weak.

To counteract the sparse networks at inception, the government deployed intermediary agents to actively build connections among cluster actors. In both clusters, a *Cluster Development Agent (CDA)* was appointed as a broker and coordinator (a role designed to bridge structural holes and stimulate interaction). These intermediaries proved to be a pivotal bottom-up mechanism for cultivating structural capital. By organizing regular meetings, workshops, and networking events, the CDAs created new channels of communication and routines of engagement among previously disconnected stakeholders. One interviewee emphasized the CDA's importance for initializing network ties:

"The Cluster Development Agent and their team play a crucial role in building interactions and trust among stakeholders, making them the most important members in a cluster… My experience shows that the fisheries cluster was more active than the carpet cluster, which can be attributed to the effectiveness of the CDA" (Cluster Program Expert, C10).

As this observation suggests, a capable broker can substitute for pre-existing linkages by actively *connecting* participants, thereby strengthening the structural dimension of social capital even when prior inter-firm ties are weak. Indeed, in the fishery cluster – where the CDA was noted to be particularly effective – stakeholders became well-connected and engaged in joint activities early on, in contrast to the carpet cluster. By the post-formation stage, our findings indicate that structural capital continued to develop through *bottom-up* initiatives such as forming a cluster management committee and hosting regular intra-cluster meetings. These ongoing networking efforts, often led by the cluster executive team and supported by local government bodies, helped maintain and expand the web of relationships among firms.

In summary, government interventions influenced structural social capital in two ways: negatively, when a top-down planning approach neglected the importance of proximity and existing networks; and positively, when on-the-ground agents and programs facilitated new connections and frequent interaction among cluster members.

3.2 Directive Diversity to Deliberate Dialogue: Government's Contrasting Effects on cognitive capital

Cognitive capital encompasses the shared representations, interpretations, and systems of meaning among actors. Our study revealed that government actions significantly affected the development of this shared understanding both before and after cluster formation. During the pre-formation stage, a major challenge to cognitive social capital in the carpet and fishery clusters was the divergence of interests and mindsets among participants, partly stemming from the clusters' top-

down composition. The government's strategy intentionally included a mix of privately owned firms and government-affiliated entities in each cluster to jump-start development. However, this *diversity of ownership structure* (a top-down intervention) led to misaligned expectations. In the carpet cluster, for instance, many producers were state-run or subsidized firms that did not feel a strong need to collaborate, whereas the private entrepreneurs were eager for any initiative that might provide resources and market access. One producer from the carpet cluster described this disconnect: *"The cluster comprises several active private companies and several state-owned entities that function more like charities… The state-owned companies lacked the motivation to contribute and did not perceive any benefit from participating in cluster activities. Consequently, they were unwilling to cooperate with other actors in the cluster"* (Producer, C4). This sentiment illustrates how the lack of a shared sense of purpose early on – especially among the government-backed firms who saw little personal gain in the cluster – hampered the formation of common goals and mutual engagement. Without a baseline agreement on the cluster's value, stakeholders had trouble developing the collective vision necessary for sustained cooperation, thereby stunting cognitive social capital development at the outset.

Recognizing this issue, the government (through their implementing agencies) shifted toward *bottom-up* capacity-building interventions to cultivate a shared vision and alignment of interests. A key government role at the pre-formation stage was *educating and socializing* cluster members about the cluster's objectives and the benefits of inter-firm collaboration. The CDAs and their support teams conducted workshops, training sessions, and informal meetings aimed at establishing a common language and goals for cluster participants. They clarified how the cluster initiative was intended not as a competitor to existing businesses, but as a platform to *enhance* each member's success. As one Cluster Development Agent explained, building cognitive capital required changing mindsets: *"The preparation of stakeholders for accepting the cluster demanded*

informing and training them on the cluster's strategy, advantages, and necessary implementation processes. It is a matter of building a culture of teamwork and changing mindsets through training. Stakeholders came to understand that the cluster is not a rival to them, but a planner alongside them which can help them achieve their goals" (Cluster Development Agent, C5). This concerted effort to foster a shared culture of teamwork and a collective identity proved crucial. Interviewees noted that once stakeholders began to see the cluster as a *collaborative venture* with mutual benefits – rather than a zero-sum competition – their willingness to participate and share knowledge increased markedly. By the time the clusters moved to the post-formation stage, there was a stronger foundation of cognitive social capital, evidenced by common terminologies, joint problem-solving, and aligned expectations among the active members. In the fishery cluster, for example, the tradition of group work and collective decision-making was naturally stronger, which further reinforced shared norms of cooperation. In contrast, the carpet cluster required more ongoing intervention to instil similar norms, given the region's more individualistic, tribal ethos.

Overall, our findings in this regard highlight that government interventions that facilitated shared learning and collective sensemaking – through training, dialogue, and early wins that demonstrated the cluster's value – were pivotal in developing cognitive social capital. Conversely, when such bottom-up efforts were lacking or when top-down mandates failed to account for participants' intrinsic motivations, the result was fragmented understanding and weak commitment to cluster goals.

3.3 Trust tipping point: Government facilitation's make-or-break role in cluster relational capital

Relational social capital refers to the quality of the personal relationships that develop among actors, such as trust, norms of reciprocity, and the strength of interpersonal ties. In the context of the clusters, relational social capital manifested in the degree of trust and mutual support between

member firms, government agencies, and cluster brokers. This dimension of social capital generally takes longer to develop, often as a culmination of sustained structural links and cognitive alignment (trust grows as people repeatedly interact and share values).

In our cases, the post-formation stage was especially critical for the maturation of relational social capital. The data show that government intervention – primarily in *bottom-up* modes – influenced whether trust flourished or floundered in the clusters after their launch. Notably, by the post-formation period the two clusters exhibited a divergence in trust levels. The fishery cluster achieved a relatively higher degree of trust and collaboration among stakeholders, whereas the carpet cluster struggled with persistent low trust and relational frictions. According to our interviewees, one underlying reason was cultural and historical differences: the Sistan region (carpet cluster) has a long-standing tribal culture characterized by skepticism toward outsiders, which made trust-building among disparate firms more challenging. Another reason was the varying effectiveness of cluster leadership and follow-up interventions in the two cases. In the carpet cluster, some stakeholders felt that the key coordinating entities did not demonstrate the commitment or capability needed to nurture trust. As one government stakeholder lamented, *"Officials in other provinces take their work more seriously… which is not the case here. …The lack of serious people is hindering our progress"* (Government official, C8). This pointed critique highlights how weak engagement by cluster brokers or local officials (e.g. being "idle" or not following through on promises) eroded trust among the cluster members. Several carpet cluster interviewees echoed that they could not rely on certain partner organizations or agencies, leading to a cautious, every-firm-for-itself atmosphere that stalled collaborative initiatives. In short, when expected *facilitators* failed to build credibility, relational ties remained shallow.

By contrast, the fishery cluster benefited from more proactive and trust-building behaviors by its brokers and support agencies. Here, the government's role in the post-formation stage was

largely to *enable and encourage continued collaboration* rather than to direct it. The cluster's CDA and the provincial industry officials regularly acted as *trust brokers*, mediating disputes and ensuring commitments were met. One fishery cluster participant described how the hands-on approach of the cluster's support team helped solidify inter-firm trust: *"The cluster experts from SMIT were particularly helpful, as they traveled a long way from the provincial capital to our city and worked hard to establish trust. Their efforts were very effective in the trust-building process."* (Cluster Development Agent, F5). Consistent with this account, our findings indicate that visible efforts by government-linked agents to demonstrate reliability and fairness – for example, by visiting local producers frequently, listening to their concerns, and delivering promised resources – significantly improved trust and reciprocity in the fishery cluster. Over time, stakeholders in that cluster developed a norm of open communication and mutual aid (e.g., sharing market information and technical advice among firms), reflecting a high level of relational social capital. Meanwhile, the carpet cluster started to make incremental improvements once remedial steps were taken: the cluster executive team organized trust-building forums and better oversight was instituted to hold actors accountable, acknowledging that earlier neglect had hurt relationships. Nevertheless, the contrast between the two cases underlines a key insight: trust within a government-sponsored cluster hinges on the credibility and connective efficacy of the intermediaries. Government interventions at the post-formation stage must therefore focus not only on providing resources or policies, but also on cultivating trustworthy leadership (e.g., selecting competent CDAs/broker organizations) and facilitating regular, meaningful interaction among members. Where such relationally oriented interventions were present, as in the fishery cluster, stakeholders reported a stronger sense of camaraderie and willingness to collaborate. Where they were absent or insufficient, as in parts of the carpet cluster's experience, social ties remained brittle and prone to dissolve at the first sign of conflict or uncertainty.

4 Discussion and implications

This study offers new insights into the dynamics of social capital development in government-engineered industrial clusters, with empirical grounding in two case studies from Iran. While the role of social capital in cluster performance is well-established (Inkpen & Tsang, 2005; Nahapiet & Ghoshal, 1998), less is known about *how* its dimensions evolve during the formation stage, particularly when clusters are initiated top-down in developing economies. Our findings challenge the prevailing assumption that trust is a precondition for collective action within clusters (Lorenzen, 2007, Grillitsch and Nilsson, 2022, Parrilli, 2009), offering instead a more nuanced view of trust as a consequence of earlier structural and cognitive interventions. In doing so, we respond to calls for more temporally and contextually sensitive accounts of cluster emergence (Chu et al., 2025, Saadatyar et al., 2020, Stephens and Sandberg, 2020). Next, we discuss our key contributions.

4.1 Rethinking trust in cluster formation

The idea that relational capital, especially trust, must pre-exist for clusters to function is prevalent in studies of organically formed clusters in developed economies (Lorenzen, 2007, Malecki, 2012, Murdoch, 2000). Yet our evidence shows that in engineered clusters, trust can be scaffolded through coordinated structural and cognitive interventions. This complements and extends Al-Tabbaa and Ankrah's (2016) dynamic view of social capital, where external agents help overcome initial relational voids. In our context, CDAs and cluster executives acted as relational proxies, reducing the need for immediate interpersonal trust among firms. Their actions—such as clarifying goals, ensuring fairness, and delivering early wins—gradually facilitated interpersonal and interorganizational trust. This adds to McDermott et al.'s (2009) work, who show that public–private institutions can catalyze upgrading in emerging clusters by performing trust-building functions.

Critically, this reframing of trust as an emergent outcome shifts the theoretical emphasis from *preconditions* to *processes* of relational capital development. While prior studies acknowledge the importance of trust in inter-organizational relationship (Carey et al., 2011, Inkpen and Tsang, 2005), they often treat it as a rather binary or static factor. Our findings reveal trust as incremental, fragile, and unevenly distributed, shaped not only by interpersonal histories but by the performance and credibility of intermediaries such as CDAs and broker agencies (cf. García-Villaverde et al., 2018). This insight also supports a process-oriented reading of Nahapiet and Ghoshal's (1998) social capital framework: trust may be catalyzed through repeated structural engagement and reinforced through cognitive alignment.

4.2 Government as architect of social capital

Second, our findings contribute to ongoing debates about the role of the state in cluster emergence (Cooke, 2001, Yeung et al., 2006, Vernay et al., 2018). Some scholars warn that excessive top-down planning undermines spontaneity and relational richness (Lehmann and Menter, 2018, Porter, 2000), while others highlight the necessity of state support in underdeveloped regions (Ma et al., 2019, Parrilli, 2024). Our study shows that both perspectives hold merit—but only when differentiated by mode of intervention and stage of cluster evolution.

We found that *top-down interventions* (e.g., centralized mapping, imposed participant mix) sometimes inhibited social capital formation. For example, the mismatch between geographic mapping and real interactional needs in the fishery cluster impeded structural capital, aligning with critiques of rigid bureaucratic planning in cluster policy (Nauwelaers, 2001; Saadatyar et al., 2020). Similarly, mandating the participation of state-owned entities, many of which were indifferent or non-responsive, diluted both cognitive and relational cohesion. These cases mirror what Kamran et al. (2017) describe as governance misalignment in emerging market clusters.

In contrast, *bottom-up interventions*—those that enabled voluntary coordination and local adaptation—were far more successful in fostering social capital. CDAs who facilitated stakeholder interactions and training sessions helped generate a shared vision, build trust, and sustain engagement. This aligns with García-Villaverde et al. (2017) and Mueller and Jungwirth (2016) who assert that local facilitation and shared cognition are key to cluster effectiveness. Our findings add that the sequencing of interventions matters: early structural and cognitive enablers are prerequisites for relational capital to take root. This implies a temporal logic of policy design, where relational autonomy is an end goal, not a starting point.

4.3 Contextual sensitivity and institutional embeddedness

Finally, our cross-case comparison between the carpet and fishery clusters illustrates how institutional and cultural context mediates the effects of identical policies (Ketels and Memedovic, 2008, Parrilli, 2024). The tribal social norms and fragmented institutional environment of Sistan (carpet cluster) created resistance to collective identity and limited relational capital development. By contrast, the fishery cluster benefited from a more collaborative business culture and a stronger performance from intermediaries. These findings expand McDermott et al. (2009) who emphasize the embeddedness of institutional architectures in shaping upgrading trajectories in developing economies. Critically, our study supports the view that cluster models must be locally tailored (Riahi et al., 2024, Richardson, 2013). Policies that work in one region may not be portable without adjustment for local trust norms, history of cooperation, and existing state–business relationships. Importantly, our study highlights that even within a single country, cluster dynamics differ substantially depending on regional social capital stock and institutional credibility.

4.4 Implications for policy

In addition to theory, our findings offers important policy implications. Importantly, site selection should combine macro-level diagnostics with micro-cluster prototyping, using iterative local

feedback to ensure genuine proximity rather than imposing rigid boundaries. Second, capacity-building must move beyond episodic training to embedded dialogue platforms, where firms co-design agendas and mentor peers—thereby anchoring cognitive alignment in real, shared challenges. Third, trust metrics should replace one-off "tick-box" events: cluster coordinators' performance ought to be linked to repeat collaboration rates and other indicators of relational depth, ensuring that brokerage remains credible and continuous. Finally, interventions must be context-sensitive. As our carpet versus fisheries comparison shows, identical policies yield divergent outcomes unless tailored to local norms and institutional legacies. By adopting such adaptive, process-oriented strategies—pilot prototyping, co-creation forums, trust-linked accountability and cultural due diligence—governments can shift from "cluster fashion shows" to authentic ecosystems, where social capital is genuinely nurtured rather than artificially engineered. Finally, we encourage future research to explore longitudinal models of social capital development in clusters, with attention to sequencing and interaction among the three dimensions.

Al-Tabbaa, O. and S. Ankrah (2016). 'Social capital to facilitate 'engineered'university–industry collaboration for technology transfer: A dynamic perspective', *Technological Forecasting and Social Change,* **104,** pp. 1-15.
Al-Tabbaa, O. and S. Ankrah (2019). ''Engineered'university-industry collaboration: A social capital perspective', *European Management Review,* **16,** pp. 543-565.
Burfitt, A. and S. Macneill (2008). 'The challenges of pursuing cluster policy in the congested state', *International journal of urban and regional research,* **32,** pp. 492-505.
Burton, N. and M. C. Vu (2021). 'The light and the dark of mindful social capital: Right mindfulness and social capital development', *European Management Review,* **18,** pp. 137-150.
Capello, R. and A. Faggian (2005). 'Collective learning and relational capital in local innovation processes', *Regional studies,* **39,** pp. 75-87.
Carey, S., B. Lawson and D. R. Krause (2011). 'Social capital configuration, legal bonds and performance in buyer–supplier relationships', *Journal of operations management,* **29,** pp. 277-288.
Chu, H., R. Hassink and W. Liu (2025). 'Exploring the mechanisms of platform empowered cluster development: evidence from the case of Taobao villages in rural China', *Regional Studies,* **59,** p. 2306330.
Cooke, P. (2001). 'Regional innovation systems, clusters, and the knowledge economy', *Industrial and corporate change,* **10,** pp. 945-974.
Duranton, G. (2011). 'California dreamin': The feeble case for cluster policies', *Review of Economic Analysis,* **3,** pp. 3-45.
García-Villaverde, P. M., D. Elche, Á. Martínez-Pérez and M. J. Ruiz-Ortega (2017). 'Determinants of radical innovation in clustered firms of the hospitality and tourism industry', *International Journal of Hospitality Management,* **61,** pp. 45-58.
García-Villaverde, P. M., G. Parra-Requena and F. X. Molina-Morales (2018). 'Structural social capital and knowledge acquisition: implications of cluster membership', *Entrepreneurship & Regional Development,* **30,** pp. 530-561.
Grillitsch, M. and M. Nilsson (2022). 'The role of initial and gradual trust in growing and unlocking regional industrial specialisations', *Industry and Innovation,* **29,** pp. 825-846.
Inkpen, A. C. and E. W. K. Tsang (2005). 'Social Capital, Networks, and Knowledge Transfer', *Academy of Management Review,* **30,** pp. 146-165.
Karna, A., F. Täube and P. Sonderegger (2013). 'Evolution of Innovation Networks across Geographical and Organizational Boundaries: A Study of R&D Subsidiaries in the Bangalore IT Cluster', *European Management Review,* **10,** pp. 211-226.
Ketels, C. H. M. and O. Memedovic (2008). 'From clusters to cluster-based economic development', *International journal of technological learning, innovation and development,* **1,** pp. 375-392.
Lehmann, E. E. and M. Menter (2018). 'Public cluster policy and performance', *The Journal of Technology Transfer,* **43,** pp. 558-592.
Liu, X., A. Zhang and Y. Xie (2023). 'Industrial policy and cluster development: a literature review', *International Journal of Technology, Policy and Management,* **23,** pp. 187-215.
Lorenzen, M. (2007). 'Social capital and localised learning: proximity and place in technological and institutional dynamics', *Urban studies,* **44,** pp. 799-817.
Ma, L., Z. Liu, X. Huang and T. Li (2019). 'The Impact of Local Government Policy on Innovation Ecosystem in Knowledge Resource Scarce Region: Case Study of Changzhou, China', *Science, Technology and Society,* **24,** pp. 29-52.

Malecki, E. J. (2012). 'Regional social capital: Why it matters', *Regional Studies,* **46,** pp. 1023-1039.
Maskell, P. and A. Malmberg (1999). 'Localised learning and industrial competitiveness', *Cambridge journal of economics,* **23,** pp. 167-185.
McDermott, G. A. and R. A. Corredoira (2010). 'Network composition, collaborative ties, and upgrading in emerging-market firms: Lessons from the Argentine autoparts sector', *Journal of International Business Studies,* **41,** pp. 308-329.
McDermott, G. A., R. A. Corredoira and G. Kruse (2009). 'Public-private institutions as catalysts of upgrading in emerging market societies', *Academy of Management Journal,* **52,** pp. 1270-1296.
Mueller, E. F. and C. Jungwirth (2016). 'What drives the effectiveness of industrial clusters? Exploring the impact of contextual, structural and functioning determinants', *Entrepreneurship & Regional Development,* **28,** pp. 424-447.
Murdoch, J. (2000). 'Networks—a new paradigm of rural development?', *Journal of rural studies,* **16,** pp. 407-419.
Nahapiet, J. and S. Ghoshal (1998). 'Social Capital, Intellectual Capital, and the Organizational Advantage', *Academy of Management Review,* **23,** pp. 242-266.
Parrilli, M. D. (2009). 'Collective efficiency, policy inducement and social embeddedness: Drivers for the development of industrial districts', *Entrepreneurship and Regional Development,* **21,** pp. 1-24.
Parrilli, M. D. (2024). 'Cluster policy: the challenging and complex horizon in the 2020s', *European Planning Studies,* **32,** pp. 1868-1884.
Porter, M. E. (2000). 'Location, competition, and economic development: Local clusters in a global economy', *Economic development quarterly,* **14,** pp. 15-34.
Prevezer, M. (2008). 'Technology policies in generating biotechnology clusters: a comparison of China and the US', *European Planning Studies,* **16,** pp. 359-374.
Riahi, R., S. M. Mirdamadi, S. J. F. Hoseini and M. O. Najafabadi (2024). 'How to develop saffron business clusters in Iran', *Brazilian Journal of Biology,* **84,** p. e279525.
Richardson, C. (2013). 'Knowledge-sharing through social interaction in a policy-driven industrial cluster', *Journal of Entrepreneurship and Public Policy,* **2,** pp. 160-177.
Saadatyar, F. S., M. Poursalimi, O. Al-Tabbaa and M. Iannotta (2020). 'Workplace spirituality as a source for competitive advantage: an empirical study', *International Journal of Organizational Analysis*.
Staber, U. D. O. (2007). 'Contextualizing research on social capital in regional clusters', *International Journal of Urban and Regional Research,* **31,** pp. 505-521.
Stephens, A. M. and J. Sandberg (2020). 'How the practice of clustering shapes cluster emergence', *Regional Studies,* **54,** pp. 596-609.
Vernay, A.-L., B. D'Ippolito and J. Pinkse (2018). 'Can the government create a vibrant cluster? Understanding the impact of cluster policy on the development of a cluster', *Entrepreneurship & Regional Development,* **30,** pp. 901-919.
Yeung, H. W.-c., W. Liu and P. Dicken (2006). 'Transnational corporations and network effects of a local manufacturing cluster in mobile telecommunications equipment in China', *World Development,* **34,** pp. 520-540.
Zheng, W. (2010). 'A social capital perspective of innovation from individuals to nations: where is empirical literature directing us?', *International Journal of Management Reviews,* **12,** pp. 151-183.

Zhong, Q. and T. and Tang (2018). 'Impact of Government Intervention on Industrial Cluster Innovation Network in Developing Countries', *Emerging Markets Finance and Trade,* **54,** pp. 3351-3365.

Table 1-a: List of sample demographics of Carpet Cluster in S&B province (Sistan region)

No.	Code of interviews	Gender	Age	Title
1	C1	Male	40-45	Producer
2	C2	Male	40-45	The head of carpet organization in S&B
3	C3	Female	20-25	Designer
4	C4	Male	55-60	Producer
5	C5	Female	30-40	Existing CDA*
6	C6	Female	30-35	Expert of Cluster
7	C7	Female	25-30	Ex-CDA
8	C8	Male	35-40	The head of Cultural Heritage Organization
9	C9	Male	40-45	The head of Union of Carpet Manufacturers
10	C10	Male	30-35	Expert of all Clusters in S&B (Fishery, Carpet)
11	C11	Male	40-50	TA*
12	C12	Male	45-50	The vice of carpet organization in S&B
13	C13	Male	50-55	Researcher in Cluster field in Sistan
14	C14	Male	45-50	The Manager of selling
15	C15	Female	50-55	Producer
16	C16	Male	45-50	The vice of SMIT

**CDA: Cluster Development Agent: Responsible of cluster implementation and drives the cluster's actors towards the cluster objectives.*
**TA: Technical Advisor: Individual with experience of leading several clusters and directs the CDAs*

Table 1-b: List of sample demographics of Fishery Cluster in S&B province (Baluchistan region)

No.	Code of interviews	Gender	Age	Job
1	F1	Male	50-60	Producer/ Businessman in Fishery
2	F2	Male	40-45	Responsible of Investment attracting for S&B province (fishery unit)
3	F3	Male	50-60	Businessman /Biggest Producer in S&B
4	F4	Male	55-60	Supervisor of cluster
5	F5	Male	30-40	CDA
6	F6	Male	55-60	Producer/ Businessman
7	F7	Male	35-40	Industry Organization of S&B
8	F8	Female	40-45	Local Producer
9	F9	Male	30-35	Expert of all Clusters in S&B (Fishery, Carpet)
10	F10	Male	45-50	The head of Fishery Industry organization in Baluchistan
11	F11	Male	45-50	The vice of SMIT
12	F12	Male	55-60	Local Producer
13	F13	Male	60-65	TA
14	F14	Male	50-55	The head of Standard Organization