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## RESEARCH ARTICLE OPEN ACCESS

Big Data, Open Data, and Open Innovation

# Exploring Uncharted Territory: CEOs as Gatekeepers in Utilizing Industrial Platforms Through Data Sharing

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## ABSTRACT

According to the silo mentality theory, companies are reluctant to share data between organizations. This study explores the reasons for this corporate behavior. To gain empirical insights, we conducted 42 semi-structured interviews with the chief executive officers (CEOs) of German small- and medium-sized enterprises (SMEs). Not only can the CEOs of SMEs control their private data, but they are also gatekeepers for business decisions, such as corporate data sharing. Following grounded theory, we identified four factors that influence data sharing. (1) *Data characteristics*—CEOs perceive social and financial data as sensitive in both private and corporate contexts. Furthermore, CEOs perceive additional types of corporate data as critical and are generally more skeptical of data sharing because of the complexity of data security. (2) *Relationships via platforms*—companies are often forced to participate in platforms, despite preferring long-term personal relationships. (3) *Competition*—platforms enable easy and rapid product comparison. SMEs want to avoid transparency and fear that platform providers may compete for specific products. (4) *Individual motivation*—increased visibility among potential customers is an important incentive for participating in platforms, although CEOs perceive such participation to be time-consuming. The findings extend the theory of silo mentality by indicating that the theory is not only relevant in the intra-organizational context but also in the inter-organizational context. Finally, we provide three propositions for future research.

## 1 | Introduction

In the light of digital transformation, big data is defined as the collection of large amounts of data that cannot be analyzed with ordinary computer power (Davenport 2014; Ardito et al. 2019; Cappa et al. 2022). Typically, this involves aggregating data from several sources and across multiple entities, resulting in a large amount of unstructured data (Havens et al. 2012). For nearly two decades, big data has fundamentally transformed industries, enabling the collection and analysis of data to leverage it for innovation (Urbinati et al. 2020). In recent years, the ongoing development toward platformization has increasingly resulted in big data being stored and shared by central platforms that manage access and serve as data hubs. For instance,

in the business-to-consumer (B2C) context, social media platforms have benefited from consumers' willingness to share their personal data and have developed into powerful data-driven businesses.

However, hesitancy to share data exists in the business-to-business (B2B) context, particularly among small- and medium-sized enterprises (SMEs) (Abbas et al. 2024). In comparison to large organizations, SMEs often lack data skills (Scaria et al. 2018) and bargaining power to negotiate beneficial data-sharing agreements (Touboul et al. 2014), leading them to refuse to share data on B2B platforms (Abbas et al. 2024). Moreover, the decision-making processes in SMEs are focused on the CEO, who often holds the central authority, especially on critical

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decisions regarding the utilization of information technology (Fassin et al. 2011; Lashitew 2023). Consequently, the characteristics of the CEO are essential influencing factors for participation in data sharing of SMEs and a significant hurdle in fully realizing the potential of big data within the business ecosystem (Huber et al. 2020). This introduces a discrepancy: while CEOs as individuals do not differ significantly from others in their data-sharing behavior on B2C platforms, often sharing their personal data without hesitation, they exhibit markedly different behaviors in their professional capacity. When acting on behalf of their companies, these CEOs are more reserved and cautious when it comes to platform participation and data sharing. This discrepancy between personal and professional actions presents a unique challenge in promoting data sharing and open data practices in the SME sector (Ahn 2017).

One explanation for this disparity in behavior may be the silo mentality. This mentality suggests that departments within a company are reluctant to share information and create internal barriers to data flow. While typically observed within organizations, the silo mentality may also apply to inter-organizational collaborations and partnerships (Cahenzli 2020; Cilliers and Greyvenstein 2012). In this sense, CEOs act as gatekeepers for open data and data sharing, thereby inhibiting the emergence of collaborative big data and the resulting innovation potential. Usually, SMEs only participate in platforms if forced to do so by an original equipment manufacturer or an important customer/supplier and rarely of their own free will.

Against this backdrop, the following question arises:

*RQ. With regard to the silo mentality, why are SME CEOs willing to share their personal data but not their corporate data on digital platforms?*

To answer this question, we conducted 42 in-depth semi-structured interviews with CEOs of German SMEs to understand their data-sharing behavior in personal and business contexts. Following grounded theory, we developed a comprehensive understanding of when and why companies are reluctant to share their data based on four influencing factors. We contribute to the literature of big data that silo mentality is prevalent in an inter-organizational context and argue that overcoming it plays a crucial role in unlocking the full potential of big data in B2B. Our study demonstrates that SME CEOs should consider openness to data sharing as an economic advantage for their SMEs and implement active measures to capitalize on the ongoing digital transformation.

## 2 | Theoretical Background

### 2.1 | The Silo Mentality Psychological Phenomenon

Originating in psychology, the silo mentality describes conscious and unconscious structures in the minds of individuals or groups that lead to a lack of communication and shared goals with others (Hotărăn 2009; Cahenzli 2020). These psychological attitudes of compartmentalization, segregation, and differentiation lead to an “us versus them” mindset and

create major anxiety when crossing these borders (Cilliers and Greyvenstein 2012; Cahenzli 2020). Specifically, individuals inside a silo separate themselves from those outside by being fearful or suspicious (Diamond et al. 2004). Individuals with a highly developed silo mentality turn away from a systematic and rational way of thinking and construct their own projections of reality (Burge 1993; Blackman 2004). Individual or group beliefs hinder communication and collaboration (Caseiro and Menses 2019).

### 2.2 | Intra-Organizational and Inter-Organizational Silo Mentalities

The silo mentality theory has been used in past management and organizational behavior research to explain the boundaries between intra-organizational groups (e.g., Neebe 1987; Hotărăn 2009; Molek et al. 2023). Theoretically, there are two ways in which silo thinking between departments arises from company structure (Diamond and Allcorn 2009; Cilliers and Greyvenstein 2012). Vertical structure refers to the hierarchical power distance between management and employees, which is reflected in the power and authority required to make decisions (Hirschhorn 1997; Greenberg and Baron 2003). Horizontal structure refers to the functional distance between specialized departments such as production or finance (Cilliers and Greyvenstein 2012; Mohapeloa 2017; Cahenzli 2020). Regardless of how the silo mentality arises in intra-organizational groups, the motives are identical. Disconnection, isolation, misunderstanding, lack of trust, respect, collegiality, or powerlessness (Greenberg and Baron 2003; Cilliers and Greyvenstein 2012; Dudau et al. 2016; Coutts 2017) are characteristics that tend to result in opposing groups prioritizing their own goals over those of the organization (Cahenzli 2020). This has serious implications for businesses, not only in terms of information and knowledge flow, but also duplicated processes, conflict, frustrated employees, wasted resources, and departmental competition (Bannister 2001; Ross et al. 2006; Mohapeloa 2017; Cahenzli 2020). Overall, a company's efficiency and key performance decline, and opportunities are missed (e.g., innovations) (Vatanpour et al. 2013; Tett 2016; Mohapeloa 2017). Researchers recommend that companies overcome the silo mentality by encouraging managers to emphasize the current value of teamwork (Horth and Vehar 2012; Molek et al. 2023). However, the silo mentality is not limited to intra-organizational domains, but also applies to inter-organizational areas due to new technological developments (e.g., Cilliers and Greyvenstein 2012). For example, companies are connected to suppliers and consumers through industrial platforms. Siloed organizations lead to dysfunctional business cooperation and negative relationships with customers and key partners (Mohapeloa 2017). In the supply chain, this manifests itself as an increase in the “bullwhip” effect (Hotărăn 2009). Despite the prevalence of the silo mentality theory in organizational research, there is little literature that applies this concept to inter-organizational relationships.

### 2.3 | SME CEOs as Gatekeepers for Data Sharing

The traditional management approach of top-down decision-making and the strong autonomy prevalent in SMEs are likely

to reinforce inter-organizational silo thinking (Anthes 2019; Colovic 2022). In SMEs, CEOs are indisputable in decision-making. Thus, through their personal and close connections with the company, they create a silo in which information neither enters nor leaves. Therefore, it is not surprising that SME CEOs do not share resources, including data, across organizations (Diamond and Allcorn 2009; Mohapeloa 2017). Essentially, CEOs are gatekeepers for industrial data sharing, as they decide which data are transferred from one silo to the next. This behavior conflicts with the concept of open data, which refers to data shared freely by organizations or governments under open licenses, allowing others to utilize it without expecting a direct compensation or obligations in return (Huber et al. 2020; Jones and Tonetti 2020; Temiz et al. 2022). SME CEOs appear skeptical about open data, although research has shown that it strengthens relationships and promotes innovation (da Silva 2023).

Motivating CEOs to share data is a major challenge when they generate value from their business model's available data (Stefansson 2002). In SMEs, the decision to share data with other companies depends significantly on individual attitudes (e.g., Colovic 2022). Data sharing between companies has been possible for a long time, and there is no visible barrier for CEOs (Kydd and Jones 1989; Mohapeloa 2017). In a data-driven business world, it is strategically relevant for SMEs to break down their silo mentality and share data with companies from the supply chain, unrelated companies, or competitors (Dooley et al. 2016; Cahenzli 2020; Müller et al. 2020).

### 3 | Methodology

#### 3.1 | Research Setting and Participants

To understand the factors influencing personal and corporate data sharing, we conducted 42 interviews with CEOs of German SMEs between September 2022 and May 2023. Germany is an industrial economy highly dependent on its SMEs as suppliers with a high share in value added and innovativeness. In particular, industrial SMEs play a vital role that is stronger than in most other economies (Müller et al. 2018). The 42 interviews allowed for the formulation of specific statements owing to the relatively limited sample size. Guidelines on the ideal sample size for qualitative research remain ambiguous (Marshall et al. 2013). In accordance with the sample size of previous research, the study concluded upon reaching saturation, at which point further interviews did not yield significant insights that would contribute to the research question (e.g., Huber et al. 2020). The variety of statements derived from our sample provides valuable insights into openness to data sharing across different industry sectors in Germany and provides an efficient approach to generate insightful data to investigate this strategic issue (Eisenhardt and Graebner 2007). To gain insight into this novel phenomenon, we analyzed the data using an exploratory approach to grounded theory (Glaser and Strauss 1967; Locke 2001; Urbinati et al. 2020). The aim of this approach is to identify meaningful patterns from interviews; in this case, the factors influencing data sharing (Glaser and Strauss 1967). In contrast to other qualitative analysis methods, grounded theory derives trends that cannot be quantified by counting statements. The statements obtained from the interviews were evaluated through multiple

rounds of discussion, and codes were assigned by experienced researchers. This offered an opportunity to align theory and practice (Locke 2001). Table 1 provides a comprehensive overview of the interviewee profiles. Further details are provided in the Table A1.

To adhere to a structured sample-selection process, we deliberately selected individuals in leadership positions in SMEs as interviewees for three reasons. First, they simultaneously controlled their personal and corporate data. Second, they can make corporate decisions without committee approval. Third, they are interested in the well-being of the company or own the data themselves (Müller and Spitz-Oener 2006; Wang and Wang 2020). We conducted all 42 in-depth interviews with CEOs and successors (71%) or top managers (29%) of SMEs. In contrast to CEOs, top managers are responsible for specific departments, such as finance and marketing. However, they are also responsible for determining the use of platforms within their companies. We balanced our sample along the dimensions of gender, age group, and industry tenure to represent the reality as accurately as possible. Additionally, we focused on SMEs with fewer than 250 employees and an annual turnover of less than €50 million (European Commission 2003). To exclude unwanted influences, all 42 SMEs originated in Germany. This facilitated the comparison of results by minimizing cultural and digitalization differences. All the companies had a similar level of digitalization. To understand attitudes toward data sharing

TABLE 1 | Comprehensive overview of interviewee profiles.

	Quantity	Percent
Gender		
Female	<i>n</i> = 10	24
Male	<i>n</i> = 32	76
Management position		
CEO/successor	<i>n</i> = 30	71
Top management position	<i>n</i> = 12	29
Industry sector		
Electrical engineering and electronics	<i>n</i> = 10	24
Mechanical engineering	<i>n</i> = 8	19
Building industry	<i>n</i> = 6	14
Metal industry	<i>n</i> = 4	10
Consumer goods	<i>n</i> = 3	7
Automotive	<i>n</i> = 2	5
Consultancy	<i>n</i> = 2	5
Packaging	<i>n</i> = 2	5
Service	<i>n</i> = 2	5
Chemical engineering	<i>n</i> = 1	2
Medical technology	<i>n</i> = 1	2
Textile industry	<i>n</i> = 1	2

across industries, we selected experts from different industries, including electrical engineering and electronics (24%), mechanical engineering (20%), building industry (14%), metal industry (10%), and consumer goods (7%). The “Others” category combined additional sectors that each account for < 5% of the interviewee partners (automotive = 5%; consultancy = 5%; packaging = 5%; service = 5%; chemical engineering = 2%; medical technology = 2%; textile industry = 2%). However, all companies were familiar with the use of platforms for procurement and transaction activities.

### 3.2 | Data Collection

The SMEs were identified, and their contact details were obtained through personal contacts and German company databases such as Bayern international. Before initiating contact, we ensured that participants met the SME criteria. We contacted 635 potential interviewees via mail or telephone. These represent a random sample of German manufacturing SMEs based on CEO contact information available to us. 42 SME CEOs agreed to the interviews. No compensation was received for participating in the study. After the commitment of the interviewees, we explained the general objectives and procedures without providing details about the individual questions. We developed semi-structured interview guidelines (see Table A2) using an iterative approach to identify CEOs' patterns of platform use (e.g., Laudien and Daxböck 2017). During the interviews, we provided an atmosphere for discussion to specify questions if necessary. While conducting the interviews, we alternated between question blocks 1 and 2 to validate our interview results and ensure nuanced data collection with the questionnaire. The interviewees were free to refer to previous answers over the course of the interview (Yin 2009). To ensure mutual agreement, we recorded and subsequently anonymized the interviews (Gioia et al. 2013). In total, the transcripts comprised over 410 pages for analysis with over 21 h of audio.

To enrich the results and gain a deeper understanding of industrial data sharing, we enriched our interviews with external data by analyzing websites and press reports on data sharing in SMEs (see Table A3). We aggregated our data by considering external data in several discussion rounds using the grounded theory method (e.g., Eismann et al. 2022).

### 3.3 | Data Analysis

Following the grounded theory approach, we conducted a three-stage analysis between May 2023 and August 2023 (Glaser and Strauss 1967; Locke 2001). In the first step, one researcher identified the similarities and differences between the interview data and external data, such as websites and annual reports. Based on this qualitative analysis, the researcher suggested an initial set of first-order inductive codes (Gioia et al. 2013). Starting with 1553 interview quotations, the researcher developed 61 paraphrased statements as first-order codes. We arrived at 61 paraphrased statements by merging identical statements from the interviews. However, these were much more detailed and, in

some cases, sector-specific. We were looking for a cross-industry trend; therefore, a higher level was required. In the subsequent analysis, the entire research team refined the first-order code over several iterations (Glaser and Strauss 1967).

In the second step, the four authors were separated into two teams to form independent second-order categories. To this end, we merged the related concepts into first-order codes. The first comparison of the second-order categories between teams revealed discrepancies. To create mutual understanding, researchers swapped teams one at a time. In the second comparison, the newly refined categories exhibited a high level of agreement. To determine the inter-coder reliability, we used Krippendorff's Alpha (Marzi et al. 2024). In contrast to other methods, this procedure was particularly suitable for our approach because our sample size was rather small ( $n > 100$ ) (Zapf et al. 2016). Krippendorff's alpha indicates that a satisfactory level of agreement is achieved with an inter-coder reliability above 80%; 100% describes complete agreement (Marzi et al. 2024). Based on an inter-coder reliability of 80.8%, the four authors jointly settled on theoretically relevant 10s-order categories in a joint discussion (Locke 2001). Table A4 presents the inter-coder reliability measurement matrix.

In the final 1-day workshop, we synthesized similar second-order categories into broader third-order themes. In addition to these four authors, two experienced senior researchers, who acted as moderators, participated in the workshops. While the four authors brought different perspectives on data sharing (e.g., blockchain-based platforms) the senior researchers' strong methodological backgrounds provided guidance for developing a framework (O'Connor et al. 2003; Liu et al. 2023). After several iterations of the analysis process, the workshop resulted in four overarching third-order themes with an inter-coder reliability of 91%, according to Krippendorff's alpha (see Table A5) (Marzi et al. 2024). The analytical framework is summarized in Table A6.

## 4 | Findings

The findings showed that SME CEOs take platforms in their private environments for granted. In particular, they use established platforms for communication (Instagram), entertainment (Netflix), shopping and food (Lieferando), and finance (Trade Republic) (e.g., Experts 30, 27, and 20). In contrast to private use, few SME CEOs stated that their companies actively use platforms. If they interact through platforms at the company level, they use supply chain platforms such as SupplyOn or Ariba (e.g., Experts 39, 33, and 16). Nevertheless, CEOs can imagine that platforms will become strategically relevant to future business models because of increasing customer demand (Expert 7). However, the findings suggested that SME CEOs are less willing to share data via platforms in a corporate context than in a private context. We identified four factors that influenced this behavior: (1) *Data characteristics*, (2) *Relationship via platforms*, (3) *Competition*, and (4) *Individual motivation*. Table 2 shows the potential barriers to data sharing in both the B2C and B2B contexts, based on third-order themes and second-order categories.

**TABLE 2** | Summarized results.

Influencing factors		B2C	B2B
1. Data characteristics	(1.1) Openness to data sharing	±Individually different between open and skeptical	–Typically skeptical
	(1.2) Data criticality	–Social data, financial data	–Social data, financial data, customer and supplier data, know-how data
	(1.3) Data security awareness	±IT infrastructure ±Data misuse	–IT infrastructure—Data misuse
2. Relationship via platforms	(2.1) Voluntary and forced	+Typically voluntary	–Typically forced by large companies in the supply chain
	(2.2) Personal and impersonal	±Following many people, but not close relationships	–Established personal long-term relationships
3. Competition	(3.1) Standardization and specialization	+High standardization of products +Small number of platforms	–Very specialized products for a few customers—High number of platforms
	(3.2) Transparency	±Very high comparability with simultaneous loss of data	+As a buyer, good comparability—As supplier, risk of a price war—Platform providers as future competitors
4. Individual motivation	(4.1) Information and marketing	+Information without active effort (e.g., education, inspiration, networking)	+Simplified searching new suppliers +Visibility among established and new customers
	(4.2) Time	±Time-consuming and time-efficient	–High maintenance
	(4.3) Other benefits	+Ease of use	–Low impact on the turnover

Note: +, corresponds to potentials for data sharing; –, corresponds to barriers for data sharing.

## 4.1 | Data Characteristics

CEOs have different types of personal and corporate data at their discretion. Three data characteristics emerged as particularly important for CEOs: openness to data sharing, data criticality, and data security awareness.

### 4.1.1 | Openness to Data Sharing

Some CEOs are cautious about sharing private sector data. For example, one interviewee stated that they regularly deleted their browser history, including all passwords, and carefully considered all cookie settings (Expert 39). Other CEOs stated that it is a no-go for them to privately enter more data than necessary on a platform (Expert 41). In contrast, other CEOs are less skeptical about data sharing and are open to sharing all personal data (e.g., Expert 12). Nevertheless, one CEO recognized that they take risks in sharing personal data but is less hesitant to do so in the corporate context (Expert 7). In the corporate context, CEOs feel responsible for both their employees and themselves.

There are 100 people behind the company; so, if a competitor takes information or a customer, 100 people have a problem.

(Expert 39)

In contrast, others stated that the company participates in public life; therefore, some data are already freely available (Expert 6). However, SMEs also try to protect sensitive and detailed data (e.g., social and financial data) (Expert 17).

### 4.1.2 | Data Criticality

Privately, CEOs are very skeptical about sharing social data and therefore avoid sharing intimate data, such as personal interests, family relationships, or health information, via platforms (Experts 1 and 4). In contrast, they consider more general or publicly available data, such as professional history, to be less sensitive (Expert 35). CEOs also view social data as highly problematic in the corporate context. Companies keep data that is closely related to employees' secret, such as salaries, pay slips, and health insurance data (Experts 15 and 4). Thus, SMEs try to prevent the misuse of individual employees' identities. Simultaneously, they try to protect themselves by hiding employees from potential recruitment attempts (Experts 14 and 9).

Additionally, the CEOs rated their financial data as critical. They avoid disclosing financial data, if possible, especially in large, anonymous groups (Expert 8). In addition, disclosing current financial data in a corporate context is not seen as an option by CEOs. This includes prices to avoid competition with other companies (Experts 16, 1, and 9). Conversely, CEOs are willing to disclose past financial data (e.g., balance sheets) (Expert 31).

Similarly, CEOs are critical of both customer and supplier data. SMEs do not communicate either type of data externally for fear of losing the supplier or customer (Experts 13 and 8). In addition, they are aware of the political significance of this data and, therefore, do not communicate any external information.

Just before the Ukraine story, we had a client from Russia who wanted to know a lot along these lines, i.e., whether there were any political entanglements among the owner; it was very much about this compliance issue.

(Expert 5)

Additionally, CEOs view know-how data as highly critical. SMEs are particularly concerned about the disclosure of data related to their own research and development or production plans (Expert 30).

Of course, things that relate to our know-how. Some of this is internal software. That means the know-how is in the source code.

(Expert 15)

#### 4.1.3 | Data Security Awareness

In both private and business environments, CEOs are concerned about the security of their data and IT infrastructure (Experts 9 and 18). Nevertheless, they seemed more concerned with IT infrastructure because of the increasing complexity of the business environment (Expert 7). One consideration of SMEs is not to outsource sensitive data (e.g., salaries) to external servers or to establish a direct virtual private network connection with the most important suppliers (Expert 15). However, one CEO reported that hackers had attacked local infrastructure in the past and, therefore, preferred cloud solutions (Expert 20). The following statement indicates that such hacker attacks on SMEs are common:

We have already been told twice by the Office for the Protection of the Constitution that these Chinese hackers are very interested in our communications.

(Expert 35)

For some CEOs, data misuse in the private sphere is only a minor criterion in their decision to share data (Expert 4). Some CEOs are aware that platform providers can create user or movement profiles based on the shared data (e.g., Google) (Experts 27, 36, and 10). However, this does not prevent them from sharing their data (Expert 14). Other CEOs were more wary, with one CEO saying that they did not know what happened to their data after sharing (Expert 1). Providers can sell data to third parties, which in extreme cases can even lead to identity theft through the misuse of names or addresses (Experts 1, 9, 24, and 35). However, in a corporate context, the potential misuse of data plays a significant role. CEOs fear that not only company information but also product ideas can be used against them (Experts 2 and 7). This could lead to

product counterfeiting or misuse of brand names (Expert 35). Consequently, SMEs are reluctant to trust platform providers and become overly dependent on them (Expert 8).

## 4.2 | Relationship via Platforms

The CEOs interviewed had different relationships with the platforms, both privately and in the corporate context. Typical relationship types include voluntary and forced, personal and impersonal.

### 4.2.1 | Voluntary and Forced

In the private sphere, CEOs are free to participate in platforms and disclose their data (Experts 4 and 17). Participants sometimes felt the need to provide personal data. For example, online shopping via online platforms is often difficult to achieve without providing bank details. They even have to provide some data privately (e.g., email addresses) to gain access to accounts or software. However, in these cases, the risks were rarely weighed (Expert 7). In the corporate environment, SMEs very often feel compelled to share their data via platforms.

I think we only use platforms when it is really mandatory.

(Expert 21)

Especially in the supply chain, almost all large customers force SMEs to participate in their platforms (e.g., SupplyOn, Meplato, and Ariba) (Experts 10, 14, 32, and 41). SME participation is necessary to receive high-value orders from customers (Experts 12 and 31). Concurrently, customers demand highly sensitive data from SMEs (e.g., financial data) to make internal comparisons between suppliers more transparent (Experts 9 and 5). Participation is also advantageous for SMEs. Customers often train their staff to operate platforms accordingly, which increases their interest in long-term partnerships because of additional investments (Expert 12). Simultaneously, SMEs are explicitly obliged not to participate in platforms. For example, confidentiality agreements exist between SMEs and their customers regarding product-specific data that they are not allowed to pass on to third parties (Experts 39 and 35). In addition, internationally operating SMEs try to avoid legal consequences due to different data regulations (e.g., Europe and the US) by not sharing any data or sharing as little data as possible (Expert 2).

### 4.2.2 | Personal and Impersonal

In the private sphere, CEOs appreciate social platforms, which allow them to be in contact with many people in different places simultaneously (Experts 13 and 24). Although some people are far apart in terms of work or family, CEOs have the opportunity to communicate with these people or follow them (Expert 17). Nevertheless, the interviewees believed that close ties were not created through contact via platforms alone (e.g., LinkedIn).

The platforms make me feel that I have already done the maximum by networking with others. There is nothing better than talking to people, meeting people, going to events, going to workshops, going to seminars.

(Expert 5)

In the corporate context, CEOs find this type of collaboration impersonal (Expert 16). Having worked with business partners for many years, CEOs preferred to rely on personal contact rather than platforms (Experts 1 and 8). They see this as an opportunity not only to exchange offers in a familiar conversation but also to discuss requests and negotiate prices individually (Experts 3 and 5). As they have the necessary contacts in their respective industries and do not serve an anonymous market, attempts to implement platforms have failed (Experts 6 and 4). Therefore, CEOs are interested in attending international trade fairs to meet relevant people in their business (Experts 2 and 6). In contrast to platforms, they expect loyal business relationships through personal contact.

Loyalty is not a big issue on platforms, and you always have to take that into account.

(Expert 2)

### 4.3 | Competition

Data sharing depends on current and future competition. CEOs distinguish between two categories: standardization and specialization, and transparency.

#### 4.3.1 | Standardization and Specialization

In private, respondents see the variety of products offered in one central place as a major advantage of using platforms, as products on B2C platforms are mostly comparable in their basic characteristics and differ mainly in quality and price (Experts 12 and 16). Brick and mortar shops do not offer comparable ranges (Expert 12). However, in the corporate context, products are often highly specialized, and no straightforward comparison is possible (Expert 5). Individual products are sometimes configured in collaboration with the customers (Expert 6). Platforms are not yet in a position to reflect on these advisory efforts and different SME standards in detail (Expert 1). As a result, CEOs use only a few platforms privately and can store their data on these platforms as a standard (e.g., delivery address) (Expert 32). This is not the case with platforms in a business context, where SMEs must access many different platforms that are structured completely differently depending on the customer (Experts 12 and 15). This creates an additional administrative burden for SMEs (Experts 7 and 15). One CEO summarized this with the following statement:

Some employees have 20/30/40 accesses to different platforms [...]. So these are always isolated solutions.

(Expert 14)

#### 4.3.2 | Transparency

Privately, SME CEOs perceive both advantages and disadvantages in the additional transparency provided by platforms. Many mentioned the ability to use platforms to compare the prices and volumes of different suppliers (Expert 16). However, they also noted that they became slightly more transparent each time they participated on the platforms (Experts 21 and 17). For example, they leave data about their purchasing behavior on transactional platforms or personal information, such as pictures or locations, on social media platforms, all of which can then be linked (Expert 37). In the corporate context, CEOs behave similarly in terms of platform transparency. When purchasing materials or products, they find additional comparability between suppliers beneficial (Experts 23 and 33). Sometimes, they personally contact the manufacturer to build a long-term relationship and save on the platform provider's margin (Expert 16). However, if they bid on a platform, they often want to avoid additional transparency at all costs (Experts 12 and 10). Therefore, they deliberately do not quote prices for their products on their platforms to maintain price sovereignty and negotiate general terms and conditions individually with the platform provider (Expert 16). SMEs want to avoid a price war with competitors; they fear that platform providers will identify products that are in high demand and then offer them at a lower price (e.g., Amazon Basics) (Experts 16, 10, and 35). In principle, SMEs want to make their data available on platforms only if other companies make the first moves.

If everyone would at least name their machines, then I would be willing to name mine.

(Expert 39)

### 4.4 | Individual Motivation

CEOs' reasons for sharing their data via platforms, both privately and in a corporate context, are diverse and fall into three categories: information and marketing, time, and other benefits.

#### 4.4.1 | Information and Marketing

In the private sphere, the ability to obtain information without active efforts is a key motivator for CEOs (Expert 22). They consciously trade their data for personalized advertising experiences, tailored offers, and better search results (Experts 9 and 27). CEOs use information to educate themselves, be inspired, or expand their networks (Experts 3, 4, and 8). Gathering information is also a motivation for participating in platforms in a corporate context. For example, one CEO stated that the aim of an SME's purchasing department is not to buy products at the lowest possible price, but to find new suppliers who offer the necessary volumes on different platforms (Expert 5). SMEs also use platforms for marketing (Experts 17 and 20). Their aim is not only to raise awareness among potential B2B customers but also among consumers who do not yet know the SME (Experts 25 and 28). To achieve this, SMEs use social media platforms regularly.

We also use Instagram and Facebook to promote our products.

(Expert 21)

#### 4.4.2 | Time

Privately, CEOs find that platforms can be very time-consuming, yet can also save time (Experts 8 and 28). Particularly, when they navigate platforms without a specific goal in mind, they are annoyed afterwards that they have wasted time (Expert 13). In some cases, they find it time-consuming to obtain more detailed information about a product (e.g., sustainability, customs, and origin) when shopping via platforms (Expert 11). However, when CEOs have a clear goal in using a platform (e.g., buying a specific product), they find the platform very time-efficient (Expert 35). They are willing to trade their personal data for convenience (Expert 28). However, CEOs find platforms in a corporate context to be very high maintenance (Expert 5). Because SMEs must regularly maintain several customer platforms, each of which operates slightly differently, they must dedicate staff to this task (Expert 33).

You have 50 portals to service if everyone is doing their own thing. Each one works a little differently and that takes more and more time.

(Expert 32)

To address this problem, CEOs view internationally recognized platforms as possible solutions by saving coordination efforts to keep all employees up to date (Experts 35 and 40).

#### 4.4.3 | Other Benefits

CEOs often use platforms privately because of their ease of use (Experts 6 and 7). This has led to easy data sharing and barrier-free communication (Expert 1). In the corporate sector, CEOs do not see any added value for SMEs when using platforms (Experts 15, 21, 23, and 39).

We have left SupplyOn because it is not worth it for us.

(Expert 11)

## 5 | Discussion

This study explored why SME CEOs are reluctant to share their data on industrial platforms. Particularly, the generation of large datasets in industrial companies necessitates opening internal company boundaries for data sharing. In contrast, private consumers seem less reluctant to use platforms and share personal information. To compare company and consumer motivations for data sharing, we interviewed 42 SME CEOs. SME CEOs access both personal and corporate data and function as gatekeepers to data sharing. Our findings showed that *data characteristics*, *relationships via platforms*, *competition*, and *individual motivation* influence the decision to share data.

We identified barriers among the four factors that prevent data sharing across industrial platforms in a corporate context. This section provides practical and theoretical implications and proposes three propositions for future research to overcome these barriers and promote industrial data sharing.

### 5.1 | Practical Implications

CEOs of SMEs are often reluctant to use platforms and function as gatekeepers to data sharing. These findings suggest that SME CEOs do not want to share sensitive data such as their financial data via industrial platforms. To overcome this, the security mechanisms of industrial platforms must be strengthened. By employing additional technologies, such as blockchain or artificial intelligence, industrial platforms can be protected against unauthorized use by third parties (Werbach 2018; Andoni et al. 2019; Papadopoulos et al. 2022). Companies can develop and implement their own security mechanisms, such as Siemens' SiGREEN, or involve external companies that specialize in data encryption on platforms, such as GoPlus Security. Additionally, it is important to build more trust in these digital technologies among CEOs by clarifying the platforms' infrastructure and their use. SME CEOs often lack an understanding of the existing IT infrastructure in their companies. For example, it is unclear whether it is preferable to store data locally or on the cloud. However, defining open data for businesses and opening up data transfers remain essential. The provision of IT workshops accompanied by the requisite skills training enables CEOs to gain an understanding of the underlying infrastructure and develop greater confidence in this technology. Monetary incentives are also useful (Voigt et al. 2003; Nicolaou and McKnight 2006). CEOs may be persuaded to use platforms through special offerings. Additionally, SME CEOs fear sharing data with unknown third parties. They are concerned that company information or product ideas will be misused by other companies and that they will suffer consequential financial or reputational damage. Building on previous personal contact, industrial platforms represent an alternative that can result in long-term partnerships (Song et al. 2016; Susanty et al. 2018). For instance, when engaging with the SupplyOn platform, SMEs are more likely to enter into a long-term contract with Bosch and are given preference in awarding contracts.

### 5.2 | Theoretical Implications

These findings indicate that the silo mentality is present at the inter-organizational level (e.g., Cilliers and Greyvenstein 2012). All four factors influencing SMEs on data sharing align with silo mentality theory. First, data characteristics describe the types of data that are excluded from the silo entirely or only permitted in restrictive terms. Performance data are more likely to be shared by CEOs than sensitive sales or personnel data. Second, the likelihood of data sharing depends on the nature of the relationship via this platform (Müller et al. 2020). When companies are forced to share data, the CEOs are more likely to act restrictively. By extending the silo to encompass multiple companies, such as those along the supply chain, data can be exchanged between companies

within a protected digital environment (Song et al. 2024; Haukipuro et al. 2024). However, this is contingent on trust. Third, the reluctance to share data can be attributed to the fear of competition outside the silo (Huber et al. 2020). It is possible that other companies may misuse the data and launch cheaper products in the market. Fourth, CEOs are gatekeepers. Depending on their individual motivations, they are more open to sharing data on platforms and are more willing to break through their silos (Mohapelo 2017; Colovic 2022).

Additionally, the findings show that sharing data in a corporate environment raises concerns. For example, new concerns are emerging for sensitive data such as customer and supplier data. In the worst-case scenario, the advantages of privately using platforms, such as saving time, can be reversed for SMEs (additional time expenditure). Surprisingly, SMEs not only digitally isolate themselves from other companies but are also skeptical about independent platform providers. SMEs fear that sharing data via platforms may create new competitors in the long term. Overall, the findings largely confirm self-imposed psychological barriers to the silo mentality theory (e.g., Mohapelo 2017). However, the details of certain barriers are uncharted in the literature. Thus, our findings contribute to the existing theoretical framework by introducing new factors, such as transparency. The current literature develops methods to overcome silos and facilitate data sharing. Consequently, all organizations involved in data sharing must emphasize the importance of collaboration. One way to accomplish this is to communicate the specific objectives (e.g., Molek et al. 2023).

## 6 | Future Research Agenda

Our findings indicate that SME CEOs are ambivalent regarding their relationships with B2C and B2B platforms. Overall, CEOs prefer sharing data on B2C platforms. In contrast to industrial platforms, consumers on B2C platforms do not rely on platform operators (Expert 8). Consequently, B2C platforms typically require less pressure to participate and share data (Experts 5 and 34). In contrast, operators of B2B platforms, such as powerful customers or suppliers, initiate this pressure to participate (Chen et al. 2019; Li et al. 2023). Particularly, when under pressure, CEOs are skeptical about data sharing (Expert 35). Independent platform operators, such as the European Union, exert less pressure on SMEs to participate in their industrial platforms and act as trustworthy intermediaries with no vested interests. In addition, SME CEOs must establish long-term relationships through industrial platforms (Song et al. 2016; Susanty et al. 2018). The development of strong relationships through personal contact is a key factor determining the success of negotiations (Falkenreck and Wagner 2017). If the relationship with a platform operator is voluntary, unforced negotiations are likely to be successful (Expert 2). This leads us to the following for further empirical research:

**Proposition 1.** *When SMEs voluntarily participate in industrial platforms (versus forced participation), they are more open to data sharing.*

Further, our findings suggest that keeping data within SME's boundaries is a success factor for CEOs, as it prevents data

misuse and imitation by platform operators. Imitation is a big challenge for SMEs because they operate in niches and produce specific goods (Eden et al. 1997; Mosey 2005). By being open to their data on industrial platforms, SME CEOs fear creating unwanted transparency about their products or price details (Experts 28 and 30). If platform operators use these data to imitate their specific products, SMEs lose competitive advantage (Johnson et al. 2017). Thus, SMEs are highly dependent on these platforms (Expert 8). Some SMEs choose to protect themselves with non-disclosure agreements, whereas others do not use platforms at all (Experts 12 and 23). The degree of independence should be considered to prevent the loss of critical competition data (e.g., Baur 2013). This determines the level of independence between platform operators and SMEs. Companies may be more willing to share data if they are confident that doing so will not create further competition (high degree of independence). Based on this, we propose the following for further empirical research:

**Proposition 2.** *For SME CEOs, platform providers' degree of independence increases their willingness to share data on industrial platforms.*

Finally, we find that individual motivation regarding receiving benefits and avoiding challenges influences CEOs' willingness to share company data. CEOs recognized the advantages of industrial platforms, for example as an additional marketing tool (Experts 17 and 20). However, they are uncertain about other possible benefits (e.g., monetary benefits) (Expert 11). Additionally, SME CEOs cannot clearly identify the extent of possible challenges that come with these benefits. In particular, they see long-term requirements of platforms as a risk for their company, as they have to deploy additional staff (Expert 5). Overall, the interviews revealed that SME CEOs cannot clearly predict both the benefits and challenges for their companies (Chatterjee et al. 2023). Therefore, they tended to focus on avoiding those challenges for their companies rather than gaining benefits of participation in industrial platforms (Dow and Da Costa Werlang 1992; Nicolaou and McKnight 2006). Thus, we propose the following for further empirical research:

**Proposition 3.** *SME CEOs are unable to calculate either the benefits or challenges of industrial data sharing.*

## 7 | Conclusion & Limitations

This study examined the role of the CEO as a gatekeeper to data sharing on digital platforms and compared openness to data sharing in private and company environments. This study adopted a grounded theory approach, based on 42 expert interviews and discussion rounds conducted within a research team. The findings revealed four influencing factors: *data characteristics, relationships via platforms, competition, and individual motivation*. This article describes these factors and their influences and provides theoretical and practical implications.

The limitations of this study arise from the limited sample of German SMEs. When compared on a global scale, German SMEs demonstrate a relatively low level of digitalization. Most

of these companies engage in manufacturing and employ only a limited range of innovative digital technologies. The results could be validated by incorporating data from other countries; a cross-national comparison would yield more complete data.

Additionally, this study placed significant emphasis on the role of the CEO as the primary gatekeeper of data. However, other factors, such as organizational structure, were not considered. Furthermore, the qualitative approach can be refined through a quantitative study. The reasons for the observed behavior can be evaluated and correlated through quantitative analysis. A decision-making trial and evaluation laboratory method can be employed to identify the correlations and factors that influence the decision-making processes.

We add to the extant research that sharing company data remains crucial for companies, though it is not a self-evident approach. SMEs must take active measures to avoid falling behind in digital transformation.

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## Conflicts of Interest

The authors declare no conflicts of interest.

## Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

## References

- Abbas, A. E., T. van Velzen, H. Ofe, G. van de Kaa, A. Zuiderwijk, and M. de Reuver. 2024. "Beyond Control Over Data: Conceptualizing Data Sovereignty From a Social Contract Perspective." *Electronic Markets* 34, no. 1: 20. <https://doi.org/10.1007/s12525-024-00695-2>.
- Ahn, J. M., T. Minshall, and L. Mortara. 2017. "Understanding the Human Side of Openness: The Fit Between Open Innovation Modes and CEO Characteristics." *R&D Management* 47, no. 5: 727–740. <https://doi.org/10.1111/radm.12264>.
- Andoni, M., V. Robu, D. Flynn, et al. 2019. "Blockchain Technology in the Energy Sector: A Systematic Review of Challenges and Opportunities." *Renewable and Sustainable Energy Reviews* 100: 143–174. <https://doi.org/10.1016/j.rser.2018.10.014>.
- Anthes, C. 2019. *Institutional Roadblocks to Human Rights Mainstreaming in the FAO: A Tale of Silo Culture in the United Nations System*. Springer VS.
- Ardito, L., V. Scuotto, M. Del Giudice, and A. M. Petruzzelli. 2019. "A Bibliometric Analysis of Research on Big Data Analytics for Business and Management." *Management Decision* 57, no. 8: 1993–2009. <https://doi.org/10.1108/MD-07-2018-0754>.
- Bannister, F. 2001. "Dismantling the Silos: Extracting New Value From IT Investments in Public Administration." *Information Systems Journal* 11, no. 1: 65–84. <https://doi.org/10.1046/j.1365-2575.2001.00094.x>.
- Baur, D. G. 2013. "The Structure and Degree of Dependence: A Quantile Regression Approach." *Journal of Banking & Finance* 37, no. 3: 786–798. <https://doi.org/10.1016/j.jbankfin.2012.10.015>.
- Blackman, J. S. 2004. *101 Defenses: How the Mind Shields Itself*. Brunner-Routledge.
- Burge, F. J. 1993. *Silo Commanders and the Enterprise-Wide Vision*. Electronic Business Buyer.
- Cahenzli, M. 2020. "Carrot or Stick: Overcoming Silos in Enterprise Architectures." In *Proceedings der 15. Internationalen Tagung Wirtschaftsinformatik 2020*. GITO Verlag. [https://doi.org/10.30844/wi\\_2020\\_m3-cahenzli](https://doi.org/10.30844/wi_2020_m3-cahenzli).
- Cappa, F., S. Franco, and F. Rosso. 2022. "Citizens and Cities: Leveraging Citizen Science and Big Data for Sustainable Urban Development." *Business Strategy and the Environment* 31, no. 2: 648–667. <https://doi.org/10.1002/bse.2942>.
- Caseiro, J., and R. Menses. 2019. *Is Silo Mentality Relevant in Healthcare? The Healthcare Professional's View*. STRATEGICA International Conference.
- Chatterjee, S., R. Chaudhuri, D. Vrontis, and R. Mahto. 2023. "Bright and Dark Sides of Adopting a Platform-Based Sharing Economy Business Model." *R&D Management* 54: 1145–1165. <https://doi.org/10.1111/radm.12650>.
- Chen, C., T. Gu, Y. Cai, and Y. Yang. 2019. "Impact of Supply Chain Information Sharing on Performance of Fashion Enterprises." *Journal of Enterprise Information Management* 32, no. 6: 913–935. <https://doi.org/10.1108/JEIM-04-2019-0104>.
- Cilliers, F., and H. Greyvenstein. 2012. "The Impact of Silo Mentality on Team Identity: An Organisational Case Study." *SA Journal of Industrial Psychology* 38, no. 2. <https://doi.org/10.4102/sajip.v38i2.993>.
- Colovic, A. 2022. "Leadership and Business Model Innovation in Late Internationalizing SMEs." *Long Range Planning* 55, no. 1: 102083. <https://doi.org/10.1016/j.lrp.2021.102083>.
- Coutts, M. 2017. *Stepping Away From the Silos: Strategic Collaboration in Digitisation*. Chandos Publishing.
- Davenport, T. H. 2014. *Big Data @ Work*. Vahlen.
- Diamond, M., S. Allcorn, and H. Stein. 2004. "The Surface of Organizational Boundaries: A View From Psychoanalytic Object Relations Theory." *Human Relations* 57, no. 1: 31–53. <https://doi.org/10.1177/0018726704042713>.
- Diamond, M. A., and S. Allcorn. 2009. "Silo Mentality." In *Private Selves in Public Organizations*, edited by M. A. Diamond and S. Allcorn, 49–72. Palgrave Macmillan.
- Dooley, L., B. Kenny, and M. Cronin. 2016. "Interorganizational Innovation Across Geographic and Cognitive Boundaries: Does Firm Size Matter?" *R&D Management* 46, no. S1: 227–243. <https://doi.org/10.1111/radm.12134>.
- Dow, J., and S. R. Da Costa Werlang. 1992. "Uncertainty Aversion, Risk Aversion, and the Optimal Choice of Portfolio." *Econometrica* 60, no. 1: 197–204. <https://doi.org/10.2307/2951685>.
- Dudau, A., D. Fischbacher-Smith, and L. McAllister. 2016. "The Unsung Heroes of Welfare Collaboration: Complexities Around Individuals' Contribution to Effective Inter-Agency Working in LSCBs." *Public Management Review* 18, no. 10: 1536–1558. <https://doi.org/10.1080/14719037.2016.1148190>.
- Eden, L., E. Levitas, and R. J. Martinez. 1997. "The Production, Transfer and Spillover of Technology: Comparing Large and Small Multinationals as Technology Producers." *Small Business Economics* 9, no. 1: 53–66. <https://doi.org/10.1023/A:1007955832161>.
- Eisenhardt, K. M., and M. E. Graebner. 2007. "Theory Building From Cases: Opportunities and Challenges." *Academy of Management Journal* 50, no. 1: 25–32. <https://doi.org/10.5465/amj.2007.24160888>.
- Eismann, T. T., O. Pakos, M. Rücker, M. Meinel, L. Maier, and K.-I. Voigt. 2022. "Understanding the Mechanisms of Activity-Based Workspaces:

- A Case Study." *Environment and Behavior* 54, no. 1: 170–210. <https://doi.org/10.1177/00139165211008240>.
- European Commission. 2003. "Comission Recommendation Concerning the Definition of Micro, Small and Medium-Sized Enterprises." *Official Journal of the European Union* 124: 36–42.
- European Commission, Directorate-General for Communications Networks, Content and Technology, E. Scaria, A. Berghmans, M. Pont, and S. Leconte. 2018. "Study on Data Sharing Between Companies in Europe: Final Report." Publications Office. <https://doi.org/10.2759/354943>.
- Falkenreck, C., and R. Wagner. 2017. "The Internet of Things – Chance and Challenge in Industrial Business Relationships." *Industrial Marketing Management* 66: 181–195. <https://doi.org/10.1016/j.indmarm.2017.08.007>.
- Fassin, Y., A. van Rossem, and M. Buelens. 2011. "Small-Business Owner-Managers' Perceptions of Business Ethics and CSR-Related Concepts." *Journal of Business Ethics* 98, no. 3: 425–453. <https://doi.org/10.1007/s10551-010-0586-y>.
- Gioia, D. A., K. G. Corley, and A. L. Hamilton. 2013. "Seeking Qualitative Rigor in Inductive Research." *Organizational Research Methods* 16, no. 1: 15–31. <https://doi.org/10.1177/1094428112452151>.
- Glaser, B. G., and A. L. Strauss. 1967. "The Discovery of Grounded Theory." In *Strategies for Qualitative Research*. Aldine.
- Greenberg, J., and R. A. Baron. 2003. *Behavior in Organizations: Understanding and Managing the Human Side of Work*. 8th ed. Prentice-Hall.
- Haukipuro, L., S. Väinämö, V. Virta, and M. Perälä-Heape. 2024. "Key Aspects of Establishing Research, Knowledge, and Innovation-Based Hubs as Part of the Local Innovation Ecosystem." *R&D Management* 54, no. 2: 283–299. <https://doi.org/10.1111/radm.12584>.
- Havens, T. C., J. C. Bezdek, C. Leckie, L. O. Hall, and M. Palaniswami. 2012. "Fuzzy c-Means Algorithms for Very Large Data." *IEEE Transactions on Fuzzy Systems* 20, no. 6: 1130–1146. <https://doi.org/10.1109/TFUZZ.2012.2201485>.
- Hirschhorn, L. 1997. *Reworking Authority: Leading and Following in a Post-Modern Organization*. MIT Press.
- Horth, D., and J. Vehar. 2012. "Becoming a Leader Who Fosters Innovation." Centre of Creative Leadership.
- Hotărân, I. 2009. "Silo Effect vs. Supply Chain Effect." *Revista de Management Comparat Internațional* 10, no. S1: 216–221.
- Huber, F., T. Wainwright, and F. Rentocchini. 2020. "Open Data for Open Innovation: Managing Absorptive Capacity in SMEs." *R&D Management* 50, no. 1: 31–46. <https://doi.org/10.1111/radm.12347>.
- Johnson, J. S., S. B. Friend, and H. S. Lee. 2017. "Big Data Facilitation, Utilization, and Monetization: Exploring the 3Vs in a New Product Development Process." *Journal of Product Innovation Management* 34, no. 5: 640–658. <https://doi.org/10.1111/jpim.12397>.
- Jones, C. I., and C. Tonetti. 2020. "Nonrivalry and the Economics of Data." *American Economic Review* 110, no. 9: 2819–2858. <https://doi.org/10.1257/aer.20191330>.
- Kydd, C. T., and L. H. Jones. 1989. "Corporate Productivity and Shared Information Technology." *Information & Management* 17, no. 5: 277–282. [https://doi.org/10.1016/0378-7206\(89\)90031-1](https://doi.org/10.1016/0378-7206(89)90031-1).
- Lashitew, A. A. 2023. "When Businesses Go Digital: The Role of CEO Attributes in Technology Adoption and Utilization During the COVID-19 Pandemic." *Technological Forecasting and Social Change* 189: 122324. <https://doi.org/10.1016/j.techfore.2023.122324>.
- Laudien, S. M., and B. Daxböck. 2017. "Business Model Innovation Processes of Average Market Players: A Qualitative-Empirical Analysis." *R&D Management* 47, no. 3: 420–430. <https://doi.org/10.1111/radm.12208>.
- Li, H., Z. Yang, C. Jin, and J. Wang. 2023. "How an Industrial Internet Platform Empowers the Digital Transformation of SMEs: Theoretical Mechanism and Business Model." *Journal of Knowledge Management* 27, no. 1: 105–120. <https://doi.org/10.1108/JKM-09-2022-0757>.
- Liu, Z., M. Ozer, and K. Zhou. 2023. "The Role of Status Diversity in the Innovative Performance of R&D Teams." *R&D Management* 47, no. 2: 311–329. <https://doi.org/10.1111/radm.12643>.
- Locke, K. D. 2001. *Grounded Theory in Management Research*. Sage.
- Marshall, B., P. Cardon, A. Poddar, and R. Fontenot. 2013. "Does Sample Size Matter in Qualitative Research? A Review of Qualitative Interviews in Is Research." *Journal of Computer Information Systems* 54, no. 1: 11–22. <https://doi.org/10.1080/08874417.2013.11645667>.
- Marzi, G., M. Balzano, and D. Marchiori. 2024. "K-Alpha Calculator–Krippendorff's Alpha Calculator: A User-Friendly Tool for Computing Krippendorff's Alpha Inter-Rater Reliability Coefficient." *MethodsX* 12: 102545. <https://doi.org/10.1016/j.mex.2023.102545>.
- Mohapelo, T. 2017. "Effects of Silo Mentality on Corporate ITC's Business Model." *Proceedings of the International Conference on Business Excellence* 11, no. 1: 1009–1019. <https://doi.org/10.1515/picbe-2017-0105>.
- Molek, N., J. E. de Jager, and M. Pucely. 2023. "Hero Culture and Silo Mentality: A Systematic Literature Review." *Journal of Universal Excellence* 12, no. 1. <https://doi.org/10.37886/ruo.2023.001>.
- Mosey, S. 2005. "Understanding New-To-Market Product Development in SMEs." *International Journal of Operations & Production Management* 25, no. 2: 114–130. <https://doi.org/10.1108/01443570510576994>.
- Müller, E., and A. Spitz-Oener. 2006. "Managerial Ownership and Company Performance in German Small and Medium-Sized Private Enterprises." *German Economic Review* 7, no. 2: 233–247. <https://doi.org/10.1111/j.1468-0475.2006.00154.x>.
- Müller, J. M., O. Buliga, and K.-I. Voigt. 2018. "Fortune Favors the Prepared: How SMEs Approach Business Model Innovations in Industry 4.0." *Technological Forecasting and Social Change* 132: 2–17. <https://doi.org/10.1016/j.techfore.2017.12.019>.
- Müller, J. M., J. W. Veile, and K.-I. Voigt. 2020. "Prerequisites and Incentives for Digital Information Sharing in Industry 4.0 – An International Comparison Across Data Types." *Computers & Industrial Engineering* 148: 106733. <https://doi.org/10.1016/j.cie.2020.106733>.
- Neebe, A. W. 1987. "An Improved, Multiplier Adjustment Procedure for the Segregated Storage Problem." *Journal of the Operational Research Society* 38, no. 9: 815–825. <https://doi.org/10.1057/jors.1987.135>.
- Nicolaou, A. I., and D. H. McKnight. 2006. "Perceived Information Quality in Data Exchanges: Effects on Risk, Trust, and Intention to Use." *Information Systems Research* 17, no. 4: 332–351. <https://doi.org/10.1287/isre.1060.0103>.
- O'Connor, G. C., M. P. Rice, L. Peters, and R. W. Veryzer. 2003. "Managing Interdisciplinary, Longitudinal Research Teams: Extending Grounded Theory-Building Methodologies." *Organization Science* 14, no. 4: 353–373. <https://doi.org/10.1287/orsc.14.4.353.17485>.
- Papadopoulos, T., U. Sivarajah, K. Spanaki, S. Despoudi, and A. Gunasekaran. 2022. "Editorial: Artificial Intelligence (AI) and Data Sharing in Manufacturing, Production and Operations Management Research." *International Journal of Production Research* 60, no. 14: 4361–4364. <https://doi.org/10.1080/00207543.2021.2010979>.
- Ross, J., P. Weill, and D. Robertson. 2006. *Enterprise Architecture as Strategy: Creating a Foundation for Business Execution*. Harvard Business Review Press.
- da Silva, M. A. P. M. 2023. "Cobb–Douglas R&D Production Function, Appropriability and Opportunity: Effects on R&D, Technological Progress and Knowledge Sharing." *Economics of Innovation and New Technology* 32, no. 7: 1069–1086. <https://doi.org/10.1080/10438599.2022.2072307>.

- Song, H., Y. Cao, Y. Zhang, and Y. Dai. 2024. "Research on the Big Data Information Sharing in Closed-Loop Supply Chain With Triple-Channel Recycling." *RAIRO* 58, no. 1: 681–712. <https://doi.org/10.1051/ro/2023186>.
- Song, H., K. Yu, A. Ganguly, and R. Turson. 2016. "Supply Chain Network, Information Sharing and SME Credit Quality." *Industrial Management & Data Systems* 116, no. 4: 740–758. <https://doi.org/10.1108/IMDS-09-2015-0375>.
- Stefansson, G. 2002. "Business-To-Business Data Sharing: A Source for Integration of Supply Chains." *International Journal of Production Economics* 75, no. 1–2: 135–146. [https://doi.org/10.1016/S0925-5273\(01\)00187-6](https://doi.org/10.1016/S0925-5273(01)00187-6).
- Susanty, A., N. M. Sirait, and A. Bakhtiar. 2018. "The Relationship Between Information Sharing, Informal Contracts and Trust on Performance of Supply Chain Management in the SMEs of Batik." *Measuring Business Excellence* 22, no. 3: 292–314. <https://doi.org/10.1108/MBE-05-2017-0019>.
- Temiz, S., M. Holgersson, J. Björkdahl, and M. W. Wallin. 2022. "Open Data: Lost Opportunity or Unrealized Potential?" *Technovation* 114: 102535. <https://doi.org/10.1016/j.technovation.2022.102535>.
- Tett, G. 2016. *The Silo Effect: The Peril of Expertise and the Promise of Breaking Down Barriers*. Simon & Schuster.
- Touboulic, A., D. Chicksand, and H. Walker. 2014. "Managing Imbalanced Supply Chain Relationships for Sustainability: A Power Perspective." *Decision Sciences* 45, no. 4: 577–619. <https://doi.org/10.1111/dec.12087>.
- Urbinati, A., D. Chiaroni, V. Chiesa, and F. Frattini. 2020. "The Role of Digital Technologies in Open Innovation Processes: An Exploratory Multiple Case Study Analysis." *R&D Management* 50, no. 1: 136–160. <https://doi.org/10.1111/radm.12313>.
- Vatanpour, H., A. Khorramnia, and N. Forutan. 2013. "Silo Effect a Prominence Factor to Decrease Efficiency of Pharmaceutical Industry." *Iranian Journal of Pharmaceutical Research* 12: 207–216.
- Voigt, K.-I., S. Landwehr, and A. Zech. 2003. *Elektronische Marktplätze*. Physica-Verlag.
- Wang, S., and H. Wang. 2020. "Big Data for Small and Medium-Sized Enterprises (SME): A Knowledge Management Model." *Journal of Knowledge Management* 24, no. 4: 881–897. <https://doi.org/10.1108/JKM-02-2020-0081>.
- Werbach, K. 2018. "Trust, but Verify: Why the Blockchain Needs the Law." *Berkeley Technology Law Journal* 33, no. 2: 487–550. <https://doi.org/10.15779/Z38H41JM9N>.
- Yin, R. K. 2009. *Case Study Research: Design and Methods*. 4th ed. Sage.
- Zapf, A., S. Castell, L. Morawietz, and A. Karch. 2016. "Measuring Inter-Rater Reliability for Nominal Data - Which Coefficients and Confidence Intervals Are Appropriate?" *BMC Medical Research Methodology* 16: 93. <https://doi.org/10.1186/s12874-016-0200-9>.

### Supporting Information

Additional supporting information can be found online in the Supporting Information section.