TRUST AND CONTROL MANIFESTATIONS IN EMPLOYEE-DRIVEN INNOVATIONS

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Purpose: The goal is to deepen understanding of trust and control in employee-driven innovations (EDI) and is met by empirical research basing on key informants' narration.

Design/methodology/approach: Nineteen interviews with key informants were conducted between March and June 2021 in three companies from different sectors (telecommunication, pharmaceutical and financial).

Findings: This publication contributes to the existing literature on EDI and trust-control in multiple ways. First, it reveals lack of direct reference to trust in employees' discourse on EDI. Second, it highlights manifestations of trust and control along with fit into Das and Teng (2001) framework. Third, it reveals differences among researched companies in terms of breakdown of trust and control types, which poses further questions about factors impacting these differences. Fourth, it shows that *social control* manifestations are not recognized.

Research limitations/implications: Research limitation stems from the method, which does not allow to make generalizations. Manifestations of *social control* in Das and Teng (2001) model were not recognized in the research, which opens a future research avenue. Future research could investigate *impersonal trust* in the context of EDI.

Practical implications: The research proves important role of *general managerial support*, identified in the literature on innovations and trust.

Originality/value: The article proposes categorization of trust and control manifestations and fit into types of trust and control in Das and Teng (2001) model, which originally presents relations between trust, control and risk types in collaboration between alliance partners.

Keywords: trust, control, employee-driven innovation, bottom-up innovation, manifestations.

Category of the paper: Research paper.

1. Introduction

Part of the general debate on trust and control as governance modes is focused on organizational functioning in terms of risk exposure with reference to Das and Teng (2001) framework. Their model of trust and control types configurations contributes to better understanding of risk governance in organizations.

Innovation is perceived as risky area in organization, as – according J.A. Schumpeter – it constitutes: *(...) novelty that creates economical value*[i]. Proper valuation of economical value of a novel solution is problematic, especially in case of *radical innovations*: *(...) where either the technologies or markets are unfamiliar* (Tidd, Bessant, 2020, p. 346). Therefore innovation – depending on their scale and level of newness – exposes organization towards certain risk. Employee-driven innovation (referred to as EDI), because of broad employee participation and strong link to learning processes in everyday job (Høyrup, 2012), may raise frequency of risky behaviours or outcomes in the organization.

Taking into account fields of innovation and risk, a question of meaning and role of trust or/and control in managing innovations may be posed. Unfortunately, in the recent years, trust and control debate rarely touched the field of innovations and in the literature review only several publications were found (Gebert et al., 2003; Cox, Mowatt, 2004; Gebert et al., 2004; Lindermann et al., 2009; Delbufalo, 2017; Glińska-Neweś et al., 2017; Oliveira et al., 2020; Lou et al., 2022). EDI field proposes great research potential, as only single EDI researchers explored trust or control, but they treated each phenomenon separately and explored it from managerial perspective, i.e.:

- role of trust in promoting EDI by management (Hansen et al., 2017),
- control by management in the EDI process (Li, 2016; Flocco et al., 2022).

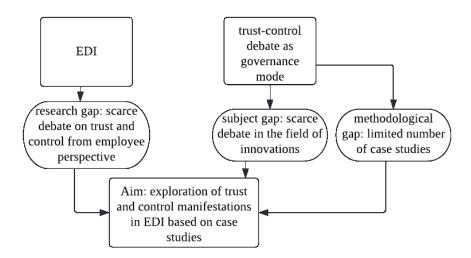Figure 1 presents research gap model including the area of EDI and trust-control debate.

Figure 1. Research gap model identified on the basis of literature review on EDI and trust-control relation.

This article contributes to filling the gap of understanding subtle issues of trust and control in EDI by exploring their empirical manifestations. It introduces a new field in the ongoing trust-control debate with reference to case studies, which are underrepresented in the trust-control debate.

Combination of EDI and trust and control issues from employee perspective poses the following research questions:

RQ1: How do participants express trust and/or control in the context of EDI in an indirect way?

RQ2: Which areas of EDI do trust or control refer to?

RQ3: Do and which manifestations fit into Das and Teng (2001) conceptual framework?

In order to find answers to these research questions, qualitative methods were used, as they enable researchers to get more insight into real issues behind the abstract phenomena. Direct interviews were conducted in three organizations with key informants.

This paper is structured as follows: the conceptual framework is divided into 4 parts: (1) trust and control in the organizational debate, (2) relations between trust and innovation, (3) relations between control and innovation and (4) relations of trust and control in the context of EDI. The methods part presents research tool development, data sampling and analysis. In the results part trust and control manifestations are categorised along with proposal of fit into Das and Teng (2001) framework. The discussion part summarizes research contribution along with future research directions and research limitations.

2. Conceptual framework

2.1. Trust and control in the general organizational debate

Any relationship within organization requires minimum level of trust (Langfield-Smith, Smith, 2003; Costa, Bijlsma-Frankema, 2007). Trust is about having confidence (Gebert et al., 2003), positive expectations (Das, Teng, 2001) or beliefs towards partner's goodwill and reliability (Das, Teng, 1998; Bijlsma-Frankema, Costa, 2005; Yang et al., 2011). The broadly accepted definition of trust exposes vulnerability to which parties have to be willing (Gebert et al., 2004, Malhotra, Lumineau, 2011; Kostis, Näsholm, 2020). On the other hand, trust is also treated as a form of governance in organization which enables i.e. coordination and interactions (Langfield-Smith, Smith, 2003; Costa, Bijlsma-Frankema, 2007; Yang et al., 2011, Cao, Lumineau, 2015). Trust plays diverse roles in organization: reduces risk of opportunistic behaviours (Langfield-Smith, Smith, 2003; Kostis, Näsholm, 2020), enables cooperation (Das, Teng, 1998) and information exchange (Bijlsma-Frankema, Costa, 2005). Although different trust typologies exist, two main types of trust are most often mentioned in the literature (Das, Teng, 2001; Langfield-Smith, Smith, 2003; Costa, Bijlsma-Frankema, 2007; Malhotra, Lumineau, 2011): (1) competence trust (trust in other party's capabilities to perform as agreed) and (2) goodwill trust (trust in other party's intentions concerning common interests).

Control in organizations can be defined as a process which enables organizational goals achievement thanks to regulated behavior of its members (Das, Teng, 1998, 2001; Costa, Bijlsma-Frankema, 2007). Two modes of control can be found in the literature: (1) formal control – i.e. contracts, procedures, monitoring, control systems and (2) informal – i.e. social norms, values, organizational culture (Costa, Bijlsma-Frankema, 2007). Figure 2 shows division into specific modes of control.
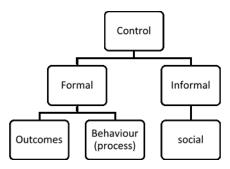

Figure 2. Modes of control, based on: "Trust, control, and risk in strategic alliances: An integrated framework" by Das, T. K., and Teng, B.S. (2001).

The interplay between trust and control has been studied as a mechanism enabling better governance of relations. According to Das and Teng (2001), when the perceived level of risk between partners is too high, trust and control – in different combinations - serve as governance mechanisms to reduce the perceived risk. Trust and control express differences as well as similarities, so they contribute to better management in organization. Both trust and control can strengthen confidence (Das, Teng, 1998); they require alignment of expectations and interaction (Bijlsma-Frankema, Costa, 2005) and control can exist only when a certain level of trust is ensured (Costa, Bijlsma-Frankema, 2007). Depending on the research area, three perspectives of trust-control relations can be identified (Das, Teng, 1998, 2001; Langfield-Smith, Smith, 2003; Bijlsma-Frankema, Costa, 2005; Costa, Bijlsma-Frankema, 2007; Malhotra, Lumineau, 2011; Yang et al., 2011; Cao, Lumineau, 2015): (1) both substitute, (2) both complement or (3) both co-exist (independently or simultaneously). Although vast number of research has been devoted to trust and control as general constructs, some scholars have focused on competence and goodwill trust (Das, Teng, 2001; Malhotra, Lumineau, 2011). When control is considered, research is focused on formal control, especially - contractual mode (for review of research on contractual mode see Cao, Lumineau, 2015).

2.2.   Trust-innovation relation

In the literature on innovations, trust has been explored to great extent in context of cooperation between organizations, i.e.: SMEs (Lindermann et al., 2009; Oliveira et al., 2020) or supplier-manufacturer (Cox, Mowatt, 2004; Delbufalo, 2017; Lou et al., 2022). According to Cox and Mowatt (2004), mainstream research on transacting relationships in innovations networks is in favour of trust as a prerequisite of such cooperation, but their own is in opposition

to this view. Exploration of consumer-driven innovation in the UK food industry showed that transparent information systems between logistic contractors and retailer impact the negotiation process similarly to trust – therefore trust is not required at the beginning of the relationship, as it is induced in the process of negotiations. In their research of open innovations in SMEs cooperation in the Web 2.0-based environment, Lindermann et al. (2009) confirmed trust as one of three prerequisites for willingness of employees' participation. Oliveira et al. (2020, p. 895) referred to *trust capital* as *the trust embedded in a company's internal and external relations* (Inkinen et al., 2017, p. 1165) and provided support for the hypothesis that trust capital is key element of innovations and influences them directly in the case of SMEs including internal employees and external partners. Delbufalo (2017) proved that supplier's trust impacts on manufacturer's innovation capability only in an indirect way, via two mediating components: (1) effective knowledge sharing and (2) asset specificity (specific investments in i.e. site, human resources or physical components). Lou et al. (2022) delved deeper into the subject of supplier selection for New Product Development (NPD) and made recommendations for governance mechanisms leading to radical and incremental innovations. They emphasized role of goodwill trust in radical innovations' creation, but only to a certain extent. Over excessive level of goodwill trust could lead to NPD incremental innovations; in case of incremental innovations, trust would be accompanying stronger output and behavior control.

Exploring literature on trust in intraorganizational environment, Glińska-Neweś et al. (2017) highlighted that high levels of trust enable more creativity and innovation. Although their model of *positive relationships at work (PRW)* – proposed as prerequisite to organizational innovations - did not directly refer to trust, is was built on components crucial to innovation by employees regardless of their position [ii]: positive interpersonal relations, open internal communication and informal meetings. Exchange of information is appointed as a trust-building mechanism (Lidermann et al., 2009) and trust enables effective communication (Prichard et al., 2014). Krot and Lewicka (2020) mentioned that *impersonal trust* [iii] (institutional trust) may be a prerequisite of other types of trust in organization and addressed the gap of dimensions of impersonal trust their relations to dimensions of innovative culture. Concerning the role of trust in relation to innovations, it is worth to mention that Gebert et al. (2003, p. 45) showed an unobvious side of trust - as more empowerment and entrepreneurship are promoted to drive organizational innovativeness, trust provides balance to possible *dysfunctional innovation-related initiatives*.

2.3. Control-innovation relation

Research on control and innovations was conducted on various levels and in diversified areas. Cox and Mowatt (2004) focused on the control exerted by the means of information systems which gather consumers' data and enable retailers for coordination of innovation process focused on New Product Development, with the inclusion of supply chain. Kostis et al. (2018) were interested in the relation between civic culture and innovations in the economical

context (measurement of rate of growth of GDP). Their research revealed significant effect of control on innovations (along with work ethics and honesty), but this research was designed on national, not organizational level.

Gebert et al. (2003, p. 42; 2004, p. 100) considered innovativeness in the following way *(...) at the aggregate level of organization, as a function of the innovation related initiatives of employees implemented per unit of time in the organization. The implementation rate is, amongst other things, a function of the situation control of employees*. In this context specific type of control is discussed – *situation control* – that mirrors employees' beliefs about probability of a situation to change. Gebert et al. (2003, 2004) stated that *situation control* and innovativeness take a shape of an U inverted curve, and at the inflection point of the curve more situation control turns into slowdown in innovativeness. Unfortunately, the inflection point is not known before the situation occurs, so afterwards actions have to be taken to manage undesirable situations. Gebert et al. (2004) indicate to trust as one of components of counterweight measures (along with orientation and consensus).

In their research on control governance and supplier selection to develop innovations, Lou et al. (2022) distinguished two types of control: (1) ex ante control, in form of two modes of supplier selection (efficiency-oriented and innovation-oriented) and (2) ex post control: outcome, behavior and trust. They concluded that, depending on the configurations of control, organization may achieve either radical or incremental innovations. Findings indicate that in case of innovation-oriented supplier selection and trust promotion of radical innovations is raised, whereas efficiency-oriented selection and control result in incremental innovations (see Figure 3).
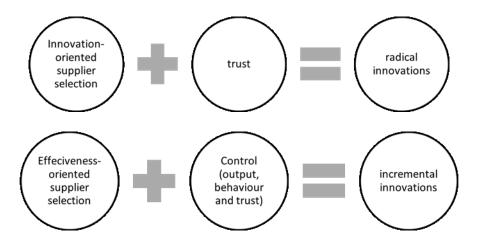

Figure 3. Configurations of supplier selection mode (ex ante control) and ex post control and expected outcomes, based on: Lou, Z., and Ye, A., and Mao, J., and Zhang, C. (2022). Supplier selection, control mechanisms, and firm innovation: Configuration analysis based on fsQCA.

2.4. Trust and control in the context of EDI

Innovation is a process of change in organization and as any change, it is based on interactions; good interorganizational collaboration supports innovations (Hentonnen et al., 2020). During the time of change, when organizational members have not embraced new routines yet, trust acts as organizing principle (Prichard et al., 2014).

Managers play a special role as reference point for employees and managers' trust in general is crucial in organizational reality. Ahmad et al. (2022) indicated that higher trust from managers in their salespeople moderates relation between salesforce control systems and *service-sales ambidexterity* - sales and service activities aimed at achieving goals, often outside the routinized ways. Huang et al. (2021) confirmed that *trust in superiors* is one of variables which – together with *procedural justice* and *self-efficacy* – contribute to budget participation capabilities which directly impact product innovation performance. In Krot and Lewicka (2020) relationship model between impersonal trust and innovation culture, managerial support has been related to both dimensions of impersonal trust: feeling of security and organizational assurance.

Own research on EDI (Padzik-Wołos, 2020) has highlighted support on the managerial level of organization as one of the key aspects supporting innovations in companies. It can be hypothesized that in the employee-subordinate relation in the vulnerable area of innovations trust is particularly appreciated. Other piece of own research based on individual interviews with key informants (in due course, not completed yet), gives more insight into this field - for EDI to function properly, not only managerial mindset, but also set of processes and organized activities are needed. The whole innovation process is based on certain "checkpoints", where analyses are required (i.e. feasibility, viability, return on investment) – in this way, control mechanisms are implemented at managerial level. On the other hand, employees execute their own form of control, addressing demands for constant feedback on their initiatives to their superiors. This assumptions on co-existence of trust and control in the EDI process are in line with findings from Prichard et al. (2014) research of technical innovation in call centers in healthcare, which additionally has shown that some trust-building mechanisms serve as means of ensuring managerial control.

As for relations between the three concepts: trust, control and innovation, they may not be directly linked. Zahedi et al. (2022) proved indirect effect of trust – via knowledge sharing - on organizational innovation and impact of perceived behavioral control on demand-based knowledge sharing which is directly related to organizational innovation.

3. Methods

Findings in this paper have been identified on the basis of own research on EDI conducted between March and June 2021 in three organizations in form of semi-structured interviews with key informants.

3.1. Development of the research tool

According to the Cambridge Dictionary, *manifestation* is *a sign of something existing or happening*[iv]. In the iceberg model of organizational culture, manifestations are *artifacts* and *behaviours* – they are *(…) signs of cultural reality, but not the structural devices for this reality* (Sackmann, 1991, p. 297). Behaviours are visible manifestations, but they are conditioned by other factors, as i.e. tacit beliefs; discovering those invisible factors creates important part of organizational culture research (Sackmann, 1991). As Sackmann (1991) points out, manifestations may differ across organizations – although they look similar, they may have different meaning and role in a given organization.

Taking the above considerations into account along with the purpose of own research, which is to better understand issues of trust and control in the EDI process, research tool in a form of semi-structured interview was developed on the basis of literature review[v].

The interview did not contain questions referring directly to trust or control. Its primary goal was to seek answer to main research questions: (1) how do EDI transform into organizational routines and (2) what factors hinder or support this transformation. Questions were formulated in more general way, with reference to supportive or hindering elements in the EDI implementation process. Broader scope of questions created possibilities to obtain more insights into manifestations of trust and control. Resignation from questions referring directly to *trust* and *control* allowed to minimise possible interviewees' biases regarding both terms and to show their manifestations from employee perspective.

3.2. The sampling and data collection

The purposeful selection of companies assumed that two criteria have to be met simultaneously: (1) continuously practiced EDI as understood by Høyrup (2012) and (2) implementation of EDI into organizational routines. Companies were found on LinkedIn on the basis of keyword search ("innovations") in companies' posts or in employees' job descriptions. Companies were recruited via personal LinkedIn or e-mail contact, by sending: (1) personalized invitation to contact and – in case of acceptance - (2) cover letter and summarized description of the project. Overall, 19 interviews have been carried out in three companies representing different sectors: telecommunication, finance and pharmacy - every company belonging to the segment of big companies, employing over 2000 employees.

Before the interview each participant received one-page reminder with definition of EDI and organizational routine (OR) and request to think about 2-3 examples of EDI which became OR. Due to remote work in 2021, interviews were conducted via communication platforms: Teams, Zoom or Skype – according to each company's technical and safety policies. Interviews lasted from 45 minutes to 1,5 hour (single case), 60 minutes on average.

The unit of analysis was single EDI example which turned into organizational routine. Participants were key informants, as they *(...) are able to provide more information and a deeper insight into what is going on around them* (Marshall, 1996, p. 92). Key informants were appointed by companies, as advised by the researcher, from different levels of involvement in EDI processes, including: idea initiators, initiative leaders, innovation coordinators, EDI programs administrators and users (those, who have not initiated innovations, but used them after implementation, as organizational routines). Interviewees came from diversified departments in the companies, respectively to company profile.

Interviews were audio recorded in two ways: (1) on voice recorder and (2) on communication platform, if possible (mainly Zoom and Teams). Audio recordings were transcribed, anonymized and analyzed in MAXQDA.

3.3. Data analysis

The analysis process is shown on Figure 4 and described below. In the first step, interview transcripts were coded in an open way, on the basis on expressions used by interviewees. In the second phase, all the fragments were extracted with direct link to *control* phenomenon (including control synonyms, like: monitoring, validation, verification a.s.o – see Table 1) and issues suggesting indirect relation to control. Direct control mechanisms have been well described in the literature (Das, Teng, 1998; Bijlsma-Frankema, Costa, 2005), therefore the focus on uncovering manifestations not expressed directly as *control* (RQ1: How do participants express trust or control in an indirect way?). After this selection, the content was analysed with reference to RQ 2: Which areas of EDI do trust or control refer to? As a result, categorization of control appeared. Similar proceeding – fragments extraction and categorization – were conducted with reference to trust. In the final stage, the categories for control and trust were fitted into Das and Teng (2001) framework.
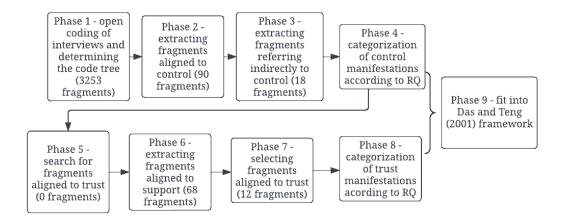
Figure 4. Analysis process.

Own analysis based on quotations from interviews, as in a case study they *(…) represent one way of presenting the data from open-ended interviews. The quoted phrases and sentences help present the participants' perspectives and thinking* (Yin, 2011, pp. 62-63). According to Corden and Sainsbury (2006, p. 11): *Reporting findings usually depends on textual representation of excerpts from transcripts of the conversation or narrative account alongside the researcher's own interpretation and commentary on those excerpts*. As scientific aim of the research is to deepen understanding of trust and control issues in the context of EDI, *Verbatim quotations could, it was believed, offer readers greater depth of understanding* (Corden, Sainsbury, 2006, p. 13). As proposed by Eldh et al., (2020), quotations were treated in own research as explanation of own analytical process, with reference to scientific goal. Long (2018) used this approach in his analysis aimed to describe how managers apply control and demonstrate trust in order to motivate subordinate cooperation. Finding appropriate links was key activity in analysis process *Interview texts were examined in Phase 3 to identify systematic links between activities to determine how managers integrate their efforts to promote control and trust. Links were identified and recorded when managers described how they attempted to build trust while they were also focused on applying a particular form of control and vice-versa* (Long, 2018, p. 73).

Table 1 shows breakdown of fragments with subcodes in the documents with and without the code. Some excerpts contained general remarks on control whereas others described specific mechanisms of control. Those mechanisms are in line with findings of literature review on control in organizations. *Audit, monitoring* or *reporting* are frequently mentioned, but *validation* may be less common - it appeared as specific condition of the pharmaceutical company. After content analysis excerpts have been coded with subcodes linked to specific mechanisms of control or as *control mechanisms not referred to directly as control*.

Table 1.

Breakdown of fragments coded with subcodes related to main code "control"

Subcodes of the *control* code	Classification rules	Percentage	Percentage (valids)
control mechanisms not referred to directly as control	the term *control* not mentioned directly	32,14	69,23
monitoring/reporting	either *monitoring* or *report(ing)* appeared	14,29	30,77
audit	the exact phrase appeared	10,71	23,08
control by employees[vi]	the term *control* was not mentioned directly	7,14	15,38
validation	the exact phrase appeared	3,57	7,69
Training	the exact phrase appeared	3,57	7,69
quality	the exact phrase appeared	3,57	7,69
document(s) with code(s)		46,43	100,00
document(s) without code(s)		53,57	-
documents analysed		100,00	-

Source: own analysis in MAXQDA.

4. Results

4.1. Control manifestations in the context of EDI

Table 2 provides fragments of interviews coded as *control mechanisms not referred to directly as control*. In the course of content analysis, four questions were posed: (1) what was the main activity expressed by the interviewer (2) which control mechanisms did interviewer refer to (3) how could this control mechanism be categorized and (4) which types of control in Das and Teng (2001) framework would this category fit to? All the coded fragments were analysed according to this scheme and Table 2 presents results of this analysis.

Table 2.

Analysis results based on quotations with fit to Das and Teng (2001) framework

Fragment	Key activity	Control mechanism	Proposed category of control	Fit to control in Das and Teng (2001)
Interviewee20 (Int20): So it's not like you just don't watch over it either. *Researcher (R)- Yhm,* *Int20- Here, too, you are asked if this is really what the implementation was about, or if this is what we expected.*	watch	verification of operation	Effects' control	output control
	ask about the effects	feedback	Effects' control	
Int20- (...) there is this care to make it better for us. *R - Yhm.* *Int20 - And that we, however, implement those plans that are and are simply satisfied with what we have to do, and not do it, so to speak with, I do not know ... by coercion.*	execute plans	verification of execution with plans	data control	output control

Cont. table 2.

	operate not in your own way	service standards of operation	behavior control	behavior control
Int29- no one here can operate in their own way, but we have work tools. *R- Yhm, yes.* *Int29 - Which we have to draw from and use and it's great that the company shows us the paths here and we train on it and keep updating our knowledge.*	use work tools	standards of operation	behavior control	
Int29 - I am also a supporter that when someone tells me: "Because I did it", I say: "Then show that you did it"	show/prove personally	personal verification	behavior control	behavior control
Int28 - First of all, to shorten client's conversation, where we also look at these indicators strongly from business perspective.	look on business indicators	verification of execution with plans	data control	output control
Int23 - I've heard some have a meeting every morning where the manager gives out tasks to be done. *R - Such a severance pay.*	give away tasks to be done personally	manager's position (hierarchy)	control related to power	output control
Int23 - Yes, I mean this is how I perceive it that, again, this strong hierarchy is visible here, that the manager, the director must see the employee, that he is working. *R - Yes.* *Int23 - That he is at hand, that you can drop into his room and assign him a new task.*	see the employee working personally assign tasks	manager's position (hierarchy)	control related to power	behavior control
Int11- we appoint the business owner ... well, of course, it doesn't happen automatically, it requires a bit of guardianship	appoint a business owner	position of the person entitled	control related to power	behavior control
Int11 - you have to keep an eye on the business owner, so that he/she replies	watch	verification of operation	Behavior control	behavior control
Int5 - We also have to, and I usually prepare own internal instructions for my subordinate team, for employees. *R - Yes?* *Int5 - And they all have to be trained in this, a list has to be signed, it is very important for us, so that exists. For every machine, for every installation that is currently working in the drug department.* *R - Yhm.* *Int5 - And we have to keep an eye on this, because it is checked there during audits.*	sign a list after training watch	personal commitment verification of operation	self-control of behavior Behavior control	behavior control
Int4 - Because our research always follows, our product is tested in comparison to the reference product. *R - Yes.* *Int4 - A market product (...).*	compare with market product	verification with the market	Effects' control	output control
Int3 - as we set up our schedule, it was also closely watched	watch	verification of performance on time	Effects' control	output control
Int 1 - other plants in our group, whether [entity A] or [entity B] or [entity C] are able to view stocks in my magazine - dedicated ones, those that we have agreed that they can see, because I can define it even for one specific element. So, when they need it, they call me "[Int1 name] - send it, because we need it"	have an overview at the stock level	verification of stock level	Data control	output control

Cont. table 2.

Int1 - I manage this time, so I already have over 3500 elements introduced, there are still some 1500 to be introduced and I have everything done	**manage time**	**position of the person entitled**	**control related to power**	**behavior control**
Int22 - we are then able to do more tasks, we are also able to serve the customer faster. So it works to the advantage, only for us, because then we are also able to do more tasks. (...) And for this we are held accountable, exactly.	manage more tasks	tasks' accounting	Effects' control	Output control
Int22 - all the submitted ideas must also comply with procedures, with arrangements that applied in the company, right? (...) Well, we cannot implement an idea that, for example, was inconsistent with the procedure (...) So it is checked on the basis of procedures.	Compliance with procedures	Job standards	behavior control	behavior control
Int22 - Yes, we have daily ones [goals – Author's remark] that need to be done. Thanks to the fact that we focus on these things in order to improve them, facilitate service, we are able to do more of these things, and then the goal is greater. The daily ones that we carry out.	manage more tasks	tasks' accounting	Effects' control	Output control
Int25 – (...) if we did not have general culture of meetings to have status of results, of current affairs…	Status meetings	update of current situation	Effects' control	Output control

Source: own analysis of interviews in MAXQDA.

Figure 5 shows aggregated categories of control manifestations not referred directly as *control*. *Verification* is the dominating type, referred to: activities, plans, time schedule, market or stock. The category *position* embraces mechanisms stemming from hierarchy (in case of superiors) or tasks performed by an interviewee in the EDI process. *Standards* of job are mentioned in telecommunication company as methods of customer service and in financial company – as reference points for improvement ideas. *Task accounting* appears in financial company, in the context of regular team meetings and servicing customers in a faster way.
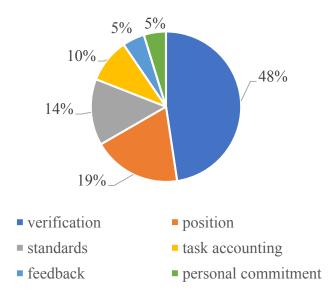

Figure 5. Breakdown of categories of control, source: own on the basis of interview analysis in MaxQDA.

Breakdown of manifestations identified in Das and Teng (2001) matrix is presented as Figure 6. The beforementioned issue of researching differences between those combinations and their dependence on variables, such as company or departmental specific, could be raised here.
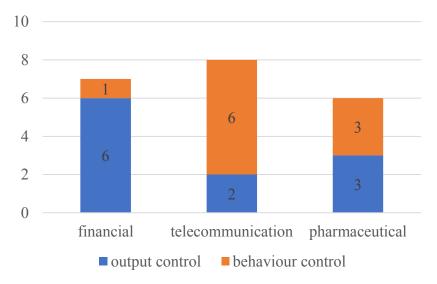

Figure 6. Breakdown of types of control categorized to fit Das and Teng (2001) framework, source: own on the basis of interview analysis in MaxQDA

Concluding Table 2 and Figure 6, one should notice lack of *social control* – informal rules, norms or organizational culture - present in Das and Teng (2001) framework. This type of control has not been identified in own research.

4.2. Trust manifestations in the context of EDI

The research instrument did not contain a direct question about trust, but a general one on elements which supported implementation of EDI. More detailed issues were tackled in this question, referring to support on organizational and interpersonal level. After analysis of the code tree in MAXQDA and search for keyword *trust* (*zaufanie* in original Polish transcriptions), trust elements were found in fragments coded with the general code "support" – with reference to support factors for EDI in analysed organizations.

In the next step, content analysis was done with following the scheme: (1) identification of supporting elements/activities expressed by the interviewer (2) reference to supported areas in organization (3) fit into Das and Teng (2001) framework of *competence* and *goodwill trust*. Every fragment was analysed following this logic and Table 3 presents results of this analysis.

Table 3.

Results of analysis of trust manifestations with fit to Das and Teng (2001) framework

Fragment	Supporting elements/activities	Supported areas/activities	Fit to type of trust (Das&Teng, 2001)
Int18: *If there is no support from senior managers, management and this space for work on improvements, apart from the standard goals that we have, then it will not be possible either, because after working hours no one will implement ideas for improvement. (…) it must be cooperation, but I think mostly the space and support from above, right? So we can do it and we have space for it.*	general managerial support	space and time for working on improvements	goodwill trust
Int28: *certainly involvement of various areas and willingness to cooperate, right? Because cooperation is key element here. If this is a good idea and everyone sees the business case, it is easier to implement it, because there is willingness to get involved, willingness to implement it. And it kind of helps. Of course, also, as if, budget and resource support. Well that is all that helps.*	engagement of different fields and willingness to cooperate	cooperation	goodwill trust
Int27: *In this process I would probably say that the organization should give some free rein, right? (...) To give the necessary resources to implement such a project or such an innovation, and then give a free hand and only check from time to time, right? Motivate by checking whether you are going in the right direction, whether you are achieving any effects, and not only spending money and meeting each other, and not achieve anything in the time horizon that you have assumed…*	resources and some freedom	overall control and motivation along with some freedom	competence trust
Int26: *We worked with people, these experts from different areas, to work out these principles. How will we act, so that it is the most efficient and that we do not have to go to the top or go somewhere for approvals, so that we can make decisions at operational level.*	experts in the organization	better efficiency in the decision-making process	competence trust
Int26: *We just got permission to make decisions at lower level for these initiatives, we got permission, "Get it on your level," right?(...) If something comes out, something more expensive there, then contact us or something, so that we also have control over it. But try to control it among yourselves.*	allowance for decisions at lower levels (organizational level)	better efficiency in the decision-making process	competence trust
Organizationally, it's very good, right? Actually, I entered this environment where it was already working and well organized. The financing was appropriate, the management's attitude was right - yes, the management - yes, the boss is often this program as well - he ran his separate spin-off, it additionally motivated and there was acceptance that, especially at the beginning, more time was spent on getting to know area.	board support	motivation of employees	competence trust/goodwill trust
Int6: *I know that where I am today and what I know I owe to my company and my superiors.* *- Because they just ... allowed me to devote some part of my work time to this, on such research, building my competences, and financing.* *- Sometimes I was not able to arrange this financing myself, so they came with me.*	general managerial support	space and conditions for research work and competence development	competence trust

Cont. table 3.

Int4: *it was like a breakthrough, because the supervisor had to say "ok then, I won't do anything if it doesn't work out.* *R - Yhm, so it must have been a bit like-* *- System consent (...) allowing, making an initiative involving many people, involving some time, with the prospect of failure.*	manager	allowance for failures	goodwill trust
Int4: *(...) this internal environment, you could say it was favorable for me, both in terms of decision-making, financial etc.*	internal environment	decision making	competence trust
Int3: *Certainly the support of managers, directors, yes, i.e. managers.* *R - Yhm.* *- Certainly such a good climate around this case, yes.*	general managerial support	better climate	goodwill trust
Int22: *We have such good contact between the leaders and colleagues that we are not afraid, for example, to submit an idea, and someone will think "what are you talking about?" and everything. There is no negative overtone and there is also support from the leaders*	good contact among co-workers and leaders	leveraging number of initiatives	goodwill trust

Source: own analysis in MAXQDA.

Majority of supporting elements or activities is connected with general managerial support in terms of better efficiency and output of the innovation process. This is manifested in: (1) access to resources, (2) allowance for making decisions at lower levels of organizational structure or (3) time allocation to work on improvements. Another category is linked with organizational culture, demonstrated in allowance for failures in innovation process or – as one Interviewee 3 put it *a good climate around the case*.

Although this research's results cannot be generalized, additional overview was carried out with point of interest on breakdown of trust types in each company. Every trust manifestation was counted, as every interviewee could mention various trust manifestations. As illustrated on Figure 7, every company had different combination of *goodwill trust* and *competence trust*. The interesting issue to research would be dependence of these combinations on certain variables – i.e. market, company or departmental specific.
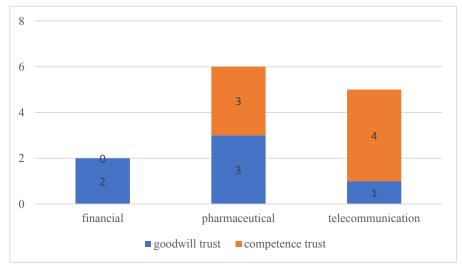

Figure 7. Breakdown of manifestations of trust categorized in Das and Teng (2001) framework with reference to company type, source: own on the basis of interview analysis in MaxQDA.

5. Discussion

The article's goal was to deepen understanding of subtle issues of trust and control in EDI context. The goal has been met by empirical research basing on content analysis of key informants' narration. This method allowed to get more insights on trust and control, when they were not spoken of directly, which was possible due to partly free conversation flow.

The research contributes to the area of EDI and trust and control in four ways.

First, it shows that trust as a concept may not be expressed directly, therefore the need for more attention towards trust manifestations within organization. This direct absence of trust as a concept in relation to innovations is in line with findings of Glińska-Neweś et al. (2017). Their model of Positive Relationship at Work (PRW) as a prerequisite of organizational innovations embraces manifestations of trust, like open communication or informal meetings[vii]. Content analysis shows asymmetry in addressing trust and control issues in the sense that interviewees do not refer directly to trust, but mostly to control.

Second, the article proposes categorization of trust and control manifestations and fit into types of trust and control in Das and Teng (2001) model, which originally presents relations between trust, control and risk types in collaboration between alliance partners. Although EDI is an intraorganizational phenomenon, it exposes participants to high risk, therefore the proposed link to this model.

Third, the breakdown of trust and control types in researched companies shows differences among them. This poses questions whether and how those differences could be explained. Future research could investigate those differences on bigger scale, with the use of quantitative methods. On the one hand, specific sector could be taken into account, on the other hand – more companies from the proposed three sectors could be researched.

Fourth, manifestations of *social control* in Das and Teng (2001) model have not been recognized in the research, which opens a promising future research avenue.

Moreover, the research proves important role of *general managerial support*, which has been identified in the literature on innovations and trust (Huang et al., 2021; Ahmad et al., 2022). Future research could investigate Krot and Lewicka (2020) term of *impersonal trust* in the context of EDI to find out which elements of impersonal trust are identified by organizational members.

The study is bounded by its limitations. First limitation stems from the method itself, which does not allow to make generalizations on the basis of interviews – especially in terms of comparisons between companies as for their combinations of control and trust type. Lack of reference to specific types of trust and control – as proposed by Das and Teng (2001) – might be considered as study restriction. This article bases on analysis of interviews with employees and does not include other types of materials, like intraorganizational documents or information available publicly.

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References

1. Ahmad, B., Liu, D., Akhtar, N., Siddiqi, U.I. (2022). Does service-sales ambidexterity matter in business-to-business service recovery? A perspective through salesforce control system. *Industrial Marketing Management*, *102*, 351-363, https://doi.org/10.1016/j.indmarman.2022.02.007.

2. Bijlsma-Frankema, K., Costa, A.C. (2005). Understanding the trust-control nexus. *International Sociology*, *20(3),* pp. 259-282, https://doi.org/10.1177/0268580905055477.

3. Cao, Z., Lumineau, F. (2015). Revisiting the interplay between contractual and relational governance: A qualitative and meta-analytic investigation. *Journal of operations management*, *33*, pp. 15-42, https://doi.org/10.1016/j.jom.2014.09.009.

4. Corden, A., Sainsbury, R. (2006). *Using verbatim quotations in reporting qualitative social research: researchers' views*. York: University of York, pp. 11-14.

5. Costa, A.C., Bijlsma-Frankema, K. (2007). Trust and control interrelations: New perspectives on the trust—control nexus. *Group & Organization Management*, *32(4),* pp. 392-406, https://doi.org/10.1177/1059601106293871.

6. Cox, H., Mowatt, S. (2004). Consumer-driven innovation networks and e-business management systems. *Qualitative market research: An international journal. Vol. 7, No. 1*, pp. 9-19. https://doi.org/10.1108/13522750410512840.

7. Das, T.K., Teng, B.S. (1998). Between trust and control: Developing confidence in partner cooperation in alliances. *Academy of management review*, *23*(3), pp. 491-512, https://doi.org/10.5465/amr.1998.926623.

8. Das, T.K., Teng, B.S. (2001). Trust, control, and risk in strategic alliances: An integrated framework. *Organization studies*, *22*(2), pp. 251-283, https://doi.org/10.1177/0170840601222004.

9. Delbufalo, E. (2017). The effects of suppliers' trust on manufacturers' innovation capability: an analysis of direct versus indirect relationships. *Production Planning & Control*, *28*(*14*), pp. 1165-1176, https://doi.org/10.1080/09537287.2017.1350766.

10. Eldh, A.C., Årestedt, L., Berterö, C. (2020). Quotations in qualitative studies: Reflections on constituents, custom, and purpose. *International Journal of Qualitative Methods*, *19,* 1609406920969268.

11. Flocco, N., Canterino, F., Cagliano, R. (2022). To control or not to control: How to organize employee-driven innovation. *Creativity and Innovation Management, Vol. 31, Iss. 3,* pp. 396-409*, https://doi.org/10.1111/caim.12500.

12. Gebert, D., Boerner, S., Lanwehr, R. (2003). The risks of autonomy: Empirical evidence for the necessity of a balance management in promoting organizational innovativeness. *Creativity and innovation management*, *12*(1), pp. 41-49, https://doi.org/10.1111/1467-8691.00267.

13. Gebert, D., Boerner, S., Lanwehr, R. (2004). The more situation control, the more innovation?–Putting the linearity thesis to the test. *International Journal of Entrepreneurship and Innovation Management*, *4*(1), pp. 98-114, https://dx.doi.org/10.1504/IJEIM.2004.004503.

14. Glinska-Neweś, A., Sudolska, A., Karwacki, A., Gorka, J. (2017). Innovations among people. How positive relationships at work can trigger innovation creation. *E+ M Ekonomie a Management*, *20*(3), pp. 84-101, doi: 10.15240/tul/001/2017-3-006.

15. Hansen, K., Amundsen, O., Aasen, T.M.B., Gressgård, L.J. (2017). *Management practices for promoting employee-driven innovation.* Workplace Innovation. Cham: Springer, pp. 321-338.

16. Horton, J., Macve, R., Struyven, G. (2004). *Qualitative research: experiences in using semi-structured interviews.* The real life guide to accounting research. Elsevier, pp. 339-357. https://doi.org/10.1016/B978-008043972-3/50022-0.

17. Hospers, G.J. (2005). Joseph Schumpeter and his legacy in innovation studies. *Know Techn. Pol., 18*, pp**.** 20-37, https://doi.org/10.1007/s12130-005-1003-1.

18. Høyrup, S. (2010). Employee-driven innovation and workplace learning: basic concepts, approaches and themes. *Transfer: European Review of Labour and Research*, *16*(2), pp. 143-154, doi: 10.1177/1024258910364102.

19. Huang, M.J., Cheng, K.C., Chung, S.H., Wang, H.M., Wang, K.H. (2021). Budget Participation Capacity Configuration (BPCC), Budgeting Participation Requirement and Product Innovation Performance. *Sustainability*, *13*(10), 5614, https://doi.org/10.3390/su13105614.

20. Kostis, A., Näsholm, M.H. (2020). Towards a research agenda on how, when and why trust and distrust matter to coopetition. *Journal of Trust Research*, *10*(1), pp. 66-90, https://doi.org/10.1080/21515581.2019.1692664

21. Langfield-Smith, K., Smith, D. (2003). Management control systems and trust in outsourcing relationships. *Management accounting research*, *14*(3), pp. 281-307, https://doi.org/10.1016/S1044-5005(03)00046-5.

22. Li, X. (2016). *Management control and employee-driven innovation* (Doctoral dissertation), https://dash.harvard.edu/bitstream/handle/1/32744406/LI-DISSERTATION-2016.pdf?sequence=1&isAllowed=y, 6.09.2022.

23. Lindermann, N., Valcárcel, S., Schaarschmidt, M., Kortzfleisch, H.V. (2009). *SME 2.0: Roadmap towards Web 2.0-based open innovation in SME-networks–A case study based research framework.* Information systems–Creativity and innovation in small and medium-sized enterprises. Berlin-Heidelberg: Springer, pp. 28-41. https://doi.org/10.1007/978-3-642-02388-0_3.

24. Long, C.P. (2018). To control and build trust: How managers use organizational controls and trust-building activities to motivate subordinate cooperation. *Accounting, Organizations and Society, 70*, pp. 69-91.

25. Lou, Z., Ye, A., Mao, J., Zhang, C. (2022). Supplier selection, control mechanisms, and firm innovation: Configuration analysis based on fsQCA. *Journal of Business Research, 139*, pp. 81-89, https://doi.org/10.1016/j.jbusres.2021.09.045.

26. Malhotra, D., Lumineau, F. (2011). Trust and collaboration in the aftermath of conflict: The effects of contract structure. *Academy of management Journal, 54*(5), pp. 981-998, https://doi.org/10.5465/amj.2009.0683.

27. Marshall, M.N. (1996). The key informant technique. *Family practice, 13*, pp. 92-97, Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.554.5499&rep=rep1&type=pdf, 30.06.2022.

28. OECD (2018). Oslo Manual 2018: Guidelines for Collecting, Reporting and Using Data on Innovation, The Measurement of Scientific, Technological and Innovation Activities. *Handbook of Innovation Indicators and Measurement.* Retrieved from https://www.oecd.org/science/oslo-manual-2018-9789264304604-en.htm, 30.06.2022.

29. Oliveira, M., Curado, C., Balle, A.R., Kianto, A. (2020). Knowledge sharing, intellectual capital and organizational results in SMES: are they related? *Journal of Intellectual Capital, Vol. 21, No. 6*, pp. 893-911. https://doi.org/10.1108/JIC-04-2019-0077.

30. Padzik-Wołos, A. (2020). Innowacja pracownicza–rozważania o współczesnym kontekście. *Zeszyty Naukowe Politechniki Poznańskiej. Organizacja i Zarządzanie, Vol. 82,* pp. 243-260, doi: 10.21008/j.0239-9415.2020.082.15.

31. Prichard, J., Turnbull, J., Halford, S., Pope, C. (2014). Trusting technical change in call centres. *Work, employment and society, 28*(5), pp. 808-824, https://doi.org/10.1177/0950017013510763.

32. Sackmann, S.A. (1991). Uncovering culture in organizations. *The Journal of applied behavioral science, 27(3),* 295-317.

33. Tidd, J., Bessant, J.R. (2020). *Managing innovation: integrating technological, market and organizational change.* John Wiley & Sons. Retrieved from https://www.academia.edu/download/37285072/0470093269.pdf, 30.06.2022.

34. Yang, Z., Zhou, C., Jiang, L. (2011). When do formal control and trust matter? A context-based analysis of the effects on marketing channel relationships in China. *Industrial Marketing Management, 40*(1), pp. 86-96, https://doi.org/10.1016/j.indmarman.2010.09.013.

35. Yin, R.K. (2011). *Applications of case study research*. Sage.

36. Zahedi, M., Akhavan, P., Naghdi Khanachah, S. (2022). Evaluation of knowledge sharing and its role in organisational innovation using structural equation modelling: a case study of Civil Aviation Organisation. *Technology Analysis & Strategic Management*, pp. 1-15, https://doi.org/10.1080/09537325.2022.2051475.

Footnotes

[i] As the original Schumpeter's publication from 1934 was impossible to obtain, I referred to Høyrup (2010). For detailed information on Schumpeter's approach towards innovations, see Hospers (2005).

[ii] This perspective is in line with the EDI concept, where innovation initiators and implementors do not have to be appointed by organization as innovation creators.

[iii] For scope of this term and its dimensions, see Krot and Lewicka (2020).

[iv] MANIFESTATION | meaning, definition in Cambridge English Dictionary.

[v] According to Horton et al. (2004, p. 340), semi-structured interviews are helpful: *(…) in order to allow the interviewees a degree of freedom to explain their thoughts and to highlight areas of particular interest and expertise that they felt they had, as well as to enable certain responses to be questioned in greater depth, and in particular to bring out and resolve apparent contradictions.*

[vi] This subcode differs from others, as it suggests opposite direction of control – the "bottom-up" (exerted by employees towards their superiors), not "top-down". Because of this differentiation it is not subject of further analysis in this article.

[vii] The role of meetings as support factors in the innovation process has been visible in own empirical research on EDI – especially in case of the financial company.