

Making numbers meaningful: Inter-organisational accounting practices for energy efficiency in small Danish fish restaurants

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Abstract

Purpose—This paper studies how institutional logics affect the implementation of energy consumption information into organisational control practices in small businesses.

Design/methodology/approach—Following a qualitative methodology, we employ a case study of three restaurants. We use semi-structured interviews with organisational members and relevant network partners as well as observations and different document sources.

Findings—Currently, we find that the restaurants make their additional information meaningful through three sets of practices: by going through the data on their own; through help from consultants; and by understanding the numbers through network engagement and collaboration. In doing so, it seems that they use different logics (business and community) to engage with the numbers.

Originality/value—The paper contributes to the literature by providing case study evidence how small business adopt environmental accounting systems. It demonstrates the importance of networks.

Keywords— environmental management accounting; hybridisation; institutional logics; small businesses; social and environmental accounting;

Article classification—Research paper.

1 Introduction

In today's business environment, firms must be both profitable and green (Figge and Hahn, 2012) – or do they? The two strategic concerns of financial and environmental sustainability represent different institutional logics (Thornton and Ocasio, 1999) and thereby different taken-for-granted beliefs, values and templates for legitimising action (Ahrens and Ferry, 2022; Ter Bogt and van Helden, 2011; Lounsbury *et al.*, 2021). Diverging goals, as profitability and sustainability, can be managed through management controls (Sundin *et al.*, 2010). A general assumption is that environmental and/or social goals should be integrated with the more traditional financial objectives of a firm through management control system design (Gond *et al.*, 2012; Beusch *et al.*, 2022). Integration implies the hybridisation (Miller *et al.*, 2008; Gebreiter and Hidayah, 2019; Pache and Santos, 2013) between business and sustainability logics (Ferdous *et al.*, 2019; Järvenpää and Lämsiluoto, 2016; Mahmood and Uddin, 2021), wherein accounting and control can help mediate between logics and sustain such a hybrid even if the logics have conflicting values (Leotta and Ruggeri, 2022). Accounting and control can thereby help create and itself attain different meanings through the different logics.

In studying of sustainability controls and organisational practice, many social and environmental accounting (SEA) studies investigate the design and integration of social and environmental controls to meet external accountability demands (see Mahmood and Uddin, 2021; Wijethilake *et al.*, 2017; Maas *et al.*, 2016). Internally, the design and implementation of such controls range from something ceremonial to something that substantially affects sustainability performance (Bouten and Hozée, 2021; Sundin *et al.*, 2010). Some find that sustainability controls can remain decoupled from other organisational objectives and accounting systems (e.g. Frostenson and Johnstone, 2023; Järvenpää and Lämsiluoto, 2016; Riccaboni and Leone, 2010), indicating a failed internal hybridisation. The impetus for organisational management control change in these studies, whether ceremonial or substantial, depends on external pressure. However, do all organisations face such pressures, and what happens if an organisation does not?

Small and medium enterprises (SMEs)¹ arguably face less direct external pressure to implement environmental sustainability accounting and control systems. In the current context of the European Union, non-listed SMEs are not legally mandated to disclose and report on their environmental performance (see The EU Taxonomy Regulation for Sustainable Activities [Regulation EU 2020/852]). However, 'going green' is a particularly important issue for SMEs given their grand-scale pollution effects (Kearins *et al.*, 2010). Without external pressures, the reasons why many SMEs move towards becoming more environmental often comes from 'within', motivated by the values of owner-managers, and/or indirectly as part of a wider supply chain (Johnstone and Hallberg, 2020).

¹ SMEs are defined as those businesses with fewer than 250 employees and/or a turnover of less than ≤€50m (European Union Commission, 2003/361/EC, 2003).

Even though SMEs and their sustainable transition is important, the sustainability control literature generally focuses on larger companies and is scant with studies on how smaller businesses account and control for sustainability (Gibassier and Alcouffe, 2018; Pelz, 2019; Johnstone, 2020). Understanding control in SMEs is important because SMEs differ from larger companies in terms of their size but also, e.g. structure, resources (Stubblefield Loucks *et al.*, 2010) and approaches to management control. While some suggest that controls are more flexible and less formal in SMEs (Kruis *et al.*, 2016), others suggest that SMEs often mimic the tighter, more formal controls of larger firms (Groen *et al.*, 2012). For achieving hybridisation between financial and sustainability logics to manage competing strategic concerns, this may have diverging implication. On the one hand, sustainability could become more easily hybridised into and part of organisation practice; on the other, it may be met with resistance due to the prevailing embedded financial logics and traditional management controls by owner-managers not themselves interested in environmental sustainability.

Given the limited understanding regarding the extent of sustainability hybridisation for the SME context, this paper explores the hybridisation of business and environmental sustainability logics in small businesses by asking:

- *How does the voluntary implementation of environmental control measures affect organisational practice?*
- *How do the environmental controls become meaningful and influence existing practices?*

To explore such questions related to the notion of the hybridisation of environmental and financial controls in SMEs, we use institutional logics (Thornton and Ocasio, 1999) as our method theory. It has seen an increasing use to understand management accounting and control practices (see Gerdin, 2020). Particularly, we follow Arroyo (2012) and Järvenpää and Lämsiluoto (2016) in studying how sustainability control measures are used organisational decision-making and practices. In doing so, we seek to follow the decision-makers through both intra and inter-organisational decision-making processes. We adopt a multiple case study of three small Scandinavian fish restaurants, participating in the EU-financed GREENBIZZ-project. The restaurants all had energy consumption measuring devices installed that provide information on energy consumption in real time. We investigate the restaurants over time to see if and how the two logics become hybridised.

Although the GREENBIZZ project and our data collection are ongoing, we have so far found interesting results. The restaurants' generally pressures towards environmental sustainability are mainly legal and financial rather than for the broader environmental good. While some personal motivations on part of the owner-managers could be seen as part of a sustainability logic, this logic is mainly determined by finances. Relating to the project, we find that the restaurants engage with the numbers in three different ways. First, owner-managers interpret the numbers from an intra-organisational perspective, seeing where machines are costly in terms of the energy used and the knock-on effect energy bills. In this, we see the sustainability logic as subsumed under the financial logic. Second, the owner-managers come to understand

some numbers through the guidance of the GREENBIZZ project. These ‘consultant-like’ services come from a sustainability logic perspective, but in order to have the largest impact, try to frame sustainability by speaking to the financial logic. Third and perhaps most interestingly, the restaurants share their intra-organisational energy performance data with their immediate competitors to understand both the meaning of the numbers themselves and possible avenues for action. In this, we find the utilisation of a third logic, a community logic (see York *et al.*, 2018). Each of the three ways of making numbers meaningful allow integration with other accounting numbers and practices as well as for a hybridised logic to come into play, thereby allowing different approaches to legitimising actions as towards both financial and sustainable ends. The end result of the project would seem to be somewhat of a hybrid logic: mainly a modified financial logic (as in, e.g. Järvenpää and Lämsiluoto, 2016) while also including the environmental logic indirectly through the community logic.

As the research is ongoing, we do not yet have firm contributions to the literature. With the current motivation of our study, we expect that the paper’s contributions to the literature will be at least twofold. First, we contribute by studying an organisation that has no legally mandated environmental reporting pressures to investigate how and why this organisation implements environmental accounting. Secondly, we hope to add to the literature by studying the hybridisation between financial and sustainability logics through accounting numbers, and, in doing so, finding how community logic can help in achieving better environmental performance for the SME context. Similar to prior SME research, this would suggest that SMEs make use of their immediate networks to better internalise questions pertaining to sustainability through not economies of scale, as previously suggested (e.g. Halila, 2007), but through knowledge dissemination of accounting numbers and related practices that directly improve financial and environmental performance through making changes to the SMEs’ energy infrastructures.

In the following section, we present our theoretical framework of institutional logics and hybridisation. In later rewrites, we want to further link this to the current knowledge on management accounting and control in SMEs. This is followed by our methodology and findings sections. Especially the latter is as of now perfunctory: it is meant to give some insights into the case setting through the different episodes or ‘sagas’. The section will be reworked, possibly rethemed as work on the paper continues. We plan to have findings and analysis developed in one section with three subsections as ‘themes’ depending on the three different approaches to making numbers meaningful presented in the findings above. We lastly offer a concluding discussion of our findings considering the literature and theoretical framing with further implications for research and practice.

2 Theoretical framework

2.1 Institutional logics and SEA

The concept of an institutional logic has multiple, overlapping definitions. Thornton and Ocasio (1999, p. 804) define an institutional logic as *'the socially constructed, historical pattern of material practices, assumptions, values, beliefs and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their reality'*. A logic consists of taken-for-granted beliefs (Lounsbury *et al.*, 2021) and a set of values (Ahrens and Ferry, 2022) to make sense of the world. Logics thereby allow for understanding means-ends relationships (Thornton and Ocasio, 2008), as well as structure actors' attention (Järvenpää and Lämsiluoto, 2016) and provide templates for interpretations, ideas and actions (ter Bogt and van Helden, 2011).

In any organisational situation, multiple institutional logics are possible. This is feasible through a mix of internal and external institutions which actors can draw on (ter Bogt and Scapens, 2014). In social and environmental accounting (SEA) studies, the focus is typically on a business or commercial logic *and* a sustainability logic (e.g. Ferdous *et al.*, 2019; Järvenpää and Lämsiluoto, 2016; Mahmood and Uddin, 2021). While the business logic represents a short-term focus on competitive pressures and understands good performance in financial terms (e.g. Kallio *et al.*, 2021), the sustainability logic represents a long-term focus on (particularly) social and environmental aspects, e.g., on environmental success by minimising the environmental impact of the firm (e.g. as in Ferdous *et al.*, 2019). The logics thereby differ in terms of what the worthwhile means-ends relationships are as well as in their structuring of attention towards mainly profitability or environmental goals, thus providing different paths for action.

To make sense of concrete situations, the literature often uses logics as ideal types. This allows for a theoretical understanding of differences between logics (Kallio *et al.*, 2021), but also introduces the danger of reification (Lounsbury *et al.*, 2021). Ideal types are useful to understand why certain logics specific attributes connected with them, e.g. technologies as symbols such as financial procedures as ROI or non-financial performance measurement on environmental performance. However, institutionalisation is an ongoing process (Modell, 2003), and institutional logics as historical patterns can and do change over time (Lounsbury *et al.*, 2021).

Organisational actors' available logics are produced and reproduced in their enactment into organisational practice. Individuals' identities and interests embed themselves within the organisation's prevailing institutional logic (Ezzamel *et al.*, 2012). In turn, these embedded logics influence organisational participants' reactions to different situations and technologies (Lagström and Österberg, 2020), allowing for different enactments. As Cerbone and Maroun (2019) suggest, difference in instantiations of logics between organisations may help explain differences in practices related to certain accounting technologies. Different instantiations of logics can result in the hybridisation between logics.

2.2 Hybrids and organisational practice

A hybrid is the blending of ‘two or more elements normally found separately’ (Miller *et al.*, 2008, p. 943). The concept of hybridity can be extended to many phenomena, e.g. the hybridisation of sustainable strategy with the main strategic orientation of an organisation (Bouten and Hoozee, 2022), but is often concerned with institutional logics (Grossi *et al.*, 2017, p. 380). The hybridisation of logics is emergent (Begkos and Antonopoulou, 2022) and happens as part of a specific organisational and historical context (Lusiani *et al.*, 2021). Enacted hybrids can themselves come to be institutionalised over time (Miller *et al.*, 2008, p. 944), thereby changing embedded assumptions and becoming new instantiations of logics (e.g., Lounsbury *et al.*, 2021). In this process, accounting and control practices can be symbols of a particular logic, but they can both enable and sustain multiple logics, creating compromises between them (Leotta and Ruggeri, 2022).

Hybridisation is not a simple process. Pache and Santos (2013, p. 13) argue that the hybridisation of logics starts when ‘*an exposure to competing logics challenges the taken-for-granted character of compliance and forces individuals to exercise some degree of agency when complying with a given logic rather than with an alternative one*’. In this sense, hybridisation at an individual level can happen when an incumbent logic becomes challenged by a new one, e.g. when an embedded business logic becomes contested by sustainability logic. Pache and Santos (2013) offer a framework for understanding hybridisation as follows: 1) *ignorance* (the absence of reaction because of a lack of awareness of a new logic); 2) *compliance* (the full adoption of a new logic, either voluntarily or through unconscious imitation), 3) *defiance* (explicit rejection of a new logic); 4) *compartmentalisation* (enacting but separating different logics, e.g. as decoupling), and 5) *combination* (the attempt to blend logics even if potentially incompatible). Each response depends on an individual’s familiarity with logics, where the actor, if knowable, chooses how to respond between options provided by the logics. The logics function, in a sense, as templates.

The framework Pache and Santos (2013) present is rational; i.e. the organisational actor facing distinct logics choose between them. The literature on accounting also generally finds such choices of importance. Managers, in particular, are found to be important for how hybrids are enacted and logics are prioritised (Begkos and Antonopoulou, 2022; Carlsson-Wall *et al.*, 2016; Thomasson and Kristoferson, 2020). Prioritisation is affected by the force behind the intruding logic. As Brignall and Modell (2000, p. 300) suggest, as the coercive pressures faced by an organisation become more powerful, ‘ceremonial implementations’, or ignorance and defiance, become less likely as substantial implementation, or some compliance, becomes a ‘necessary evil’.

Even if the framework presumes rationality, actual practice seems less so. Gebreiter and Hidayah (2019, p. 728) find that the responses to competing logics often ‘improvised, coincidental and inconsistent’. In terms of business and sustainability logics, this is

demonstrated in Järvenpää and Lämsiluoto (2016) as follows. In terms of institutional hybrids, the authors find that their case company first incorporated environmental controls into practice, embracing the sustainability logic through hybridising environmental concerns into their existing control systems. Later, the process ended with ignorance as environmental issues came to be understood solely in terms of a financial business logic. The hybridisation process ended with a new instantiation of a business logic including understanding environmental issues in terms of financial sustainability as cost minimisation; i.e. the business case for environmental sustainability. Similar results with economic concerns being clearly most influential is often seen (Ferdous *et al.*, 2019, p. 985).

2.3 Theoretical framing in the case

What happens when two institutional logics blend is not necessarily knowable a priori, and reactions will change over time. Furthermore, managers appear to play an important role in this process. In the case of business and sustainability logics, without external pressure for sustainability, how and whether a hybrid emerges is not certain. What this means for our study is that over time, the environmental logic pertaining to the benefits of energy efficient devices may well become embedded within the expected embedded business logic of the case SMEs based on economic survival, as in Järvenpää and Lämsiluoto (2016), rather than some more environmentally fruitful compliance or combination. Additionally, it also suggests that the owner-managers of our case SMEs are pertinent for ensuring the hybridisation of logics.

It is with this theoretical framework that we aim investigate how SMEs control for environmental sustainability as well as how these controls become meaningful and influence existing practices. In adopting an institutional logic perspective, we assume that not only the hybridisation of the business and environmental sustainability logics is necessary, but we also assume that the owner-managers of these small businesses are necessary in this hybridisation process (i.e. by mediating and moderating it). Figure 1 offers an illustration of the (potential) connections between the logics (illustrated by the dashed lines) and the role of the SME owner-managers in this hybridisation process. We will return to and elaborate on this preliminary analytical model through our case findings that aim to explore how the voluntary implementation of environmental control measures affects organisational practice and how the introduction of such controls become meaningful and thus, influence intra-organisational practices.

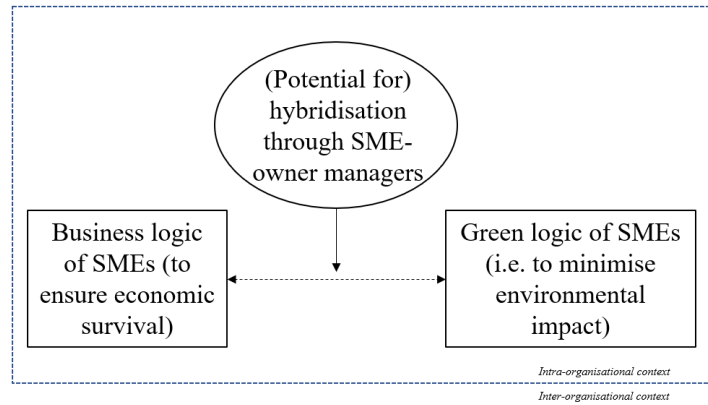


Figure 1. Interaction of logics for our empirical context

3 Method

3.1 Case approach and background

In this paper, we utilise a multiple, longitudinal case study design. This is considered appropriate to explore the hybridisation of business and environmental sustainability (i.e. in this case ‘green’) logics in small businesses over time by offering some empirical examples from distinct cases that can help develop our current knowledge (cf. Eisenhardt and Graebner, 2007; Miles et al., 2014). The small businesses here satisfy the EU definition of having between 10 and 49 employees [European Union Commission, 2003/361/EC, 2003]).

The cases for this study include three small seasonal fish restaurants that neighbour each other along a popular Scandinavian coastline. For this research, they are given the following pseudonyms: the Fried Flounder, the Sea Lion and the Harbour Bistro. All restaurants share very similar characteristics. During the months of operation, the restaurants employ between 20 and 30 staff. During off season, the core staff of a few employees, composed of the owner/managers and their families, remain. The restaurants share similar conditions partly because of their similar locations and because of the locations’ historical significance. Because of the latter, the restaurants are very restricted in their potential for making infrastructural changes, and per restrictive agreements with the municipality are obliged to sell primarily fish dishes. All kitchens are housed indoors with seating (for approximately 120 guests at any one time per restaurant) outdoors, making revenue highly contingent on weather conditions. The restaurants share centralised toileting facilities run by the local municipalities along the dock.

As previously suggested in the introduction, all restaurants participate in a European funded project on environmental efficiency (GREENBIZZ). The project primarily provides them with information on their energy usage in real time. Since 2022, measurement devices have been installed on all machines within the restaurants that use energy. The devices feed information into a software program known as the ‘dashboard’ through which the participating restaurants and project leaders can obtain accounting information regarding energy performance to

establish where and how energy is being used at any one time. This information is presented in graphs/tables and linked to particular appliances that have been linked to the smart meters. The project adds an environmental performance measurement capacity not previously enjoyed before by the participants. The capacity means that what was previously an indirect overhead cost pool could be traced to individual machines and, in principle, practices. Additionally, the project managers gave some guidance to participants free of charge on this performance information. The project presented participants with different possibilities but did not demand that actual changes were made. This, consequently, left any decision-making based on the performance data up to the respective businesses' owners.

Preceding the project, the owners collaborated in different ways, e.g. as part of other projects. As part of the project, they held collective rather than individual meetings between the restaurants and project managers. This meant that while the three restaurants were competitors during business hours, they were collaborators in sharing energy information behind closed doors, seeking to make accounting decisions that could make both energy and financial savings for all.

3.2 Research method

Table 1 below outlines our data. The primary research method constitutes semi-structured interviews with organisation members in the restaurants and project. Secondary data is participant observations in the planning stage of project meetings and the implementation stage of reconciliation meetings. Year 0 represents the time when the project was being planned and designed by the interdisciplinary research team and project managers involved. Year 1 is the year immediately after the installation of the energy measurement devices (i.e. summer 2022 opening of restaurants until spring, 2023), i.e. when the dashboard became available. Finally, Year 2 is summer-winter 2023. This means that the years do not strictly correspond to calendar years, rather addressing the planning and implementation phases of the project to focus on how information from the dashboard is used over time and throughout the network. The interviews are to be operationalised in a series of rounds in Year 1 and 2. Through following the restaurants over the years, we will be able to see if and how the logics become hybridised.

Planning phase of project (<i>< summer 2022</i>)	<i>Year 0</i>			
	Observation of ten project meetings (1-2 hours each), including researchers from three different Scandinavian universities and practitioners installing the energy software and hardware			
	Total Year 0 = 15 hours			
Implementation phase of project (<i>summer 2022 – winter 2023</i>)	Year 1 Round 1	Year 1 Round 2* (planned)	Year 2 Round 1	Year 2 Round 2

Restaurant 1, The Fried Flounder	Semi-structured interview with owner on site (45 minutes)	Semi-structured interview with the owner online* (planned)		
	Informal conversation with owner on site (30 minutes)	Semi-structured interview with between one to three seasonal employees* (planned)		
	Semi structured interview with seasonal manager ² online (100 minutes)			
Restaurant 2, The Harbour Bistro	Semi-structured interview with owner-manager by phone (60 minutes)	Semi-structured interview with the owner-manager online* (planned)		
	Phone conversation with owner-manager (80 minutes)	Semi-structured interview with between one to three seasonal employees* (planned)		
Restaurant 3, The Sea Lion	Interview with owner-manager on site (55 minutes)	Semi-structured interview with the owner online* (planned)		
	Guided tour of the restaurant (20 minutes)	Semi-structured interview with between one to three seasonal employees* (planned)		
Other data	Year 1		Year 2	
	Observations during site visit, autumn 2022 (half day)			
	Interview with Project Research Assistant (80 minutes)			
	Total Year 1 = 12 hours so far (ongoing)		Total Year 2 = X hours	

Table 1. Empirical data

During Year 1, we conducted the first round of interviews with the owner and managers immediately after the busy summer season of 2022. Our interview guide consisted of questions relating to the context of the project, sustainability perspectives, business aims and processes, and the use of information from the dashboard for making decisions within and between the businesses. Particularly, the owner-managers of the three restaurants were encouraged to share their experiences and opinions on using the dashboard. Through this, an overall picture

² During the off-season (i.e. winter months of October to April), the manager is a full time student.

regarding how the information was used within the restaurants after Year 1 was obtained. From this, similar questions were presented to the project manager.

Upon reflection, the decision was made to make a second round of interviews (both individually and then later a group interview with the owner-managers of the three restaurants *[planned]**). The interview were investigate changes over time. Over the winter, the owner-managers had more time to reflect on the information from the dashboard (both in environmental and financial performance terms) during their down period and could had meet with one another to discuss strategies to adopt for season 2023. During the first round of interviews (i.e. immediately after the summer 2022 season), the owner-managers indicated that they had not yet had the time to reflect upon and make sense of the accounting information. Questions for the second round of interviews during Year 1 were thus orientated around the initial themes that arose from the first round of interviews, for example, regarding in what ways decision-making and (environmental) process efficiencies were improved through collaboration with each other as well as general reflections on the information provided by the dashboard and its functionality. Of particular interest was an elaboration on if/how accounting information is shared between those directly involved in the project as well as the other two restaurants that exist along the water front but were not directly part of the GREENBIZZ project.

During Year 2, **COMPLETE WHEN DONE.**

The interviews were conducted in the interviewees native language, recorded and then transcribed by one of the researchers, before being translated into English. When there were discrepancies between the native and translated versions of the transcripts, particularly in relation to colloquialisms, these were addressed through conversations between the researchers. Meanwhile, notes were taken during the informal meetings on site and the various participant observations. Note that one researcher has been involved in observing the project from the start (i.e. the planning stage) and conducted most of the interviews. It was deemed important that the second researcher maintained a certain distance from the project to provide a more objective, rounded analysis with reduced bias, serving as a sounding board by bringing in new perspectives (Merriam and Tisdell, 2015). That being said, both researchers were involved in designing the interview guides throughout the project's duration.

3.3 Analytical procedure

The analytical procedure regarded both authors meeting together on various occasions to discuss the findings from the interview transcripts and notes made from the informal meetings and participant observations. This was conducted in two stages.

The findings were first analysed after Year 1 (i.e. after the first summer season when the restaurants were open) of having the dashboard implemented. This was repeated again after the second year (i.e. the second summer season). During these 'years', the researchers also redesigned the interview questions to be asked in the next rounds through going between empirics and analysis, meaning that the questions became more theory informed as the project

progressed (cf. Hall and Messner, 2018). The theoretical lens chosen, institutional logic, focuses the researchers' attention on decision makers' templates for making sense of issues and solutions (Järvenpää and Lämsiluoto, 2016), which emerged as important throughout the interviews. That one researcher was mainly responsible for conducting the interviews and another for designing and analysing them in conjunction with the first served to reduce bias.

Through speaking to key people in these restaurants and especially those involved in the reconciliation or bench-marking meetings with the project manager, accounting decisions based on performance measurement information from the dashboard became clear. This gave rise to a longitudinal presentation of the findings relating to the pre-dashboard planning phase, followed by the two first years of the dashboard implementation.

Particularly, the findings relating to dashboard implementation were orientated around anecdotes that allow the reader to better understand the thought process behind accounting decisions (and the institutional logics) for the involved small businesses and the very interaction between those involved. What is interesting through this research design is the ability to not only triangulate information by speaking to each of the three involved fish restaurants. More, we could obtain the 'full story' by putting together separate pieces of information from the perspective of each restaurant. The small anecdotes told by each owner-manager offered unique illustrations for the researchers in terms of how accounting information is used and shared between the participants. For example, after Year 1, various themes became evident (e.g. improved decision-making, improved efficiencies and improved collaborations) through different stories which helped inform the structure of the findings section, as well as also allowed for a separate community logic to emerge. Meanwhile, after Year 2, other themes additionally emerged, such as **DEVELOP AS WE GO!** Comparing and contrasting these themes allowed the researchers to gain a better understanding of how accounting information from the dashboard is received, used and shared within the inter-organisational network. **COMPLETE WHEN DONE AND WHEN WE DECIDE RESEARCH AIM/QUESTIONS.**

4 Findings

4.1 Case context

While the case background already provides information on the project for implementing the smart meters and associated dashboard, it is also important to overview the location of each of the involved restaurants vis-à-vis one another.

The location of the restaurants in historical buildings along the waterfront is considered by the owners to be 'the best in Denmark'. This ideal location is nevertheless juxtaposed against the tight regulatory conditions. The restaurants are limited in their product mix, where municipal requirements demand fish-themed offering, and they cannot make changes to insulation and toileting facilities, among others:

We can't even put a screw in the wall without seeking permission in all sorts of strange places. [...] I couldn't build a toilet [within the restaurant building]. It required me to move the stairs a bit, and then I was refused. So even though I could save x-number of thousands of litres of water in the guest toilet every year by making a urinal instead of a toilet, and I could do an economy flush... We were not allowed to do that (Owner, The Sea Lion).

The limited space in the restaurants also mean that they solely have outdoor seating. This creates some boundaries for the functioning of the restaurants. First, it entails that the weather is important to business. All restaurants try to affect this by using heat lamps, allowing for customers to be able to eat during colder weather either at night or during 'bad days.'

Second, the restaurants cannot serve customers during colder weather. The restaurants therefore are closed during the winter months. Outside of the lack of cashflow, closing down could affect the depreciation of equipment: 'things [machines, equipment] don't like to stand still. The salt water that is in the air, and [the restaurants] are not very well insulated. The winter takes its toll on things' (Owner, The Sea Lion). Solely having outdoor seating could thus present issues and additional costs to the restaurants.

However, closing down for the season had some upsides. As demand is heavily dependent on tourists, the restaurants would not have many customers in winter. Additionally, each restaurant solely needs a skeletal core staff of just a few employees. At the peak of summer (mid-July), the seasonal staff base is between 20-30. During this period, the restaurants are making 'three dishes of food per minute for eight hours straight' (Owner, The Sea Lion).

Given their similarities in terms of product, operations and location, the restaurants have fairly similar approaches to decision-making, performance measurement and attitudes towards environmental efficiency. When reflecting on their participation in the GREENBIZZ project, the owners generally have similar reasonings, noting that it 'would do no harm' and might 'save money', e.g. by finding out if an appliance was a 'power guzzler'. They recognise that guzzling energy is a business condition of:

Our biggest sustainability challenge is clearly our energy consumption. After all, it's enormous, both in natural gas and in electricity. [...] But I don't see how we can do better. [...] I have four giant deep fryers... the biggest ones I can get, kilowatt-wise. That's because they need to be able to keep up. It's no use if people have to wait for their food. They need to get it: that's it! [...] I could buy four smaller deep fryers, and again I'm talking kwh-wise. Then guests had wait for the food because we couldn't keep up. And then we'd lose revenue. (Owner, The Sea Lion)

All noted the importance of 'customer turnover' (Manager, the Fried Flounder): during peak seasons, the limiting factor was the available seating; not customer demand.

Traditionally, the restaurant met information on sustainable products from their suppliers. As an owner noted, '*Sustainable solutions often come from your suppliers... they say, "there's this new product!"*' [...] *You rely on their advice in choosing the right solution*' (Owner, The Harbour Bistro). The restaurants met some governmental requirements, e.g. to sorting waste more elaboratively, but mainly legal pressures concerned food safety. The sentiment of 'survival' and doing what is mandated by Danish law "doing what they have to do" is noted by

all restaurants (e.g. minimal compliance in relation to sorting waste and infrastructural limits on the historical buildings).

In terms of sustainability, customers were not perceived to care. As a manager explained, *'some customers are mad that they aren't allowed to smoke anymore – not that we aren't green enough. That's not these people'* (manager, the Fried Flounder). Similarly, the restaurants all could have some sustainability markings on their menu, choosing not to because *'it wouldn't make a difference'* (owner, the Sea Lion).

Still, the owners considered some environmentally friendly organisational changes prior to the project- One owner considered installing solar panels. They all explicitly recognised the unsustainable character of the 'fishing industry' even if of significant cultural and social sustainability importance to the region as employer.

However, there had been a general lack of attention to energy efficient processes, appliances and systems in all three of the restaurants. The historical approach for decision making was not based on accounting information per se, but rather the negative feelings associated with an item: *'When it starts to give me a headache, I sell it'* (Owner, The Harbour Bistro). Negative feelings for some appliance could be negated through different organisational practice, e.g. a problematic fridge (mentioned again later). Notably, there appears to be no real formalised system for goal setting and performance measurement beyond traditional financial accounting and economic performance goals. One owner noted how,

Goals are not something you work with in everyday life: it's the job you take on. [...] I don't have to have sub-goals and all these things. Because my sub-goals, what are they governed by? They are governed by my financing, or by my cash. If I don't have the money for new coolers or freezers, we won't get them. (Owner, The Fried Flounder)

The main goals regard "having good staff, running the best restaurant and being able to make enough money to live over the winter season" (Owner, The Harbour Bistro). If, additionally, they can make some savings from information dashboard information, that is only considered to be something good.

4.2 Year 1 of dashboard implementation

The implementation of the dashboard was completed before the beginning of the fish restaurants' summer season of 2022. Immediately after, the three restaurants seemed to acknowledge that the information from the dashboard could help to make localised changes to save money. It could indicate that the dashboard could allow for the owners becoming familiar with an environmental sustainability logic, but together with what was presented in the case context, this indicated an embedded business logic.

The owners did not note energy efficiency as a strategic aim. This is illustrated through the following anecdotes. Given that the summer period is so busy, 'lack of time' was noted by the owners for not making decisions related to 'fuel guzzlers' in real time (i.e. over the summer

months as and when the energy was being used). The owner of The Harbour Bistro was not even aware of the dashboard existing on an app:

During summer, I don't have time for anything. I didn't even know I could go to an app – I probably didn't get that. [...] I don't have the [mental] energy or desire to familiarise myself with anything else [during summer]. It's only now [off season] that I'm starting to get an overview of it. Just doing the VAT to 1/9? That was where the pressure's at! [...] I just got a printout from all three outlets where I could see what we... in paper form [...] how the consumption is different in the three restaurants. I haven't done anything myself. It was just something they gave me.

This meant that information from the dashboard (either on the app or on paper printout) was used retrospectively to make changes off-season in the planning for the next season. Another owner noted:

When you're in the middle of the high season, introducing new things is difficult – no matter what they are. This is the kind of thing that can only happen in winter, almost. ... I think it's fine, becoming more sustainable and all these things. But you shouldn't force anyone to do something in the middle of a high season. (Owner, The Harbour Bistro)

Sustainability and profitability did not compete at all: 'survival' during this period was key. How the dashboard's information was shared and used to make decisions immediately after Year 1 implementation both within and between the restaurants is illustrated through the following anecdotes. These decisions result in operational changes regarding energy efficiency in preparation for the Year 2 season.

4.2.1 Improved decision making for optimisation: The fridge-freezer sagas

The restaurant owners are the primary decision-makers within each restaurant. All three owners seemed to have some story linked to the unsustainable energy consumption of their fridges or freezers. These are essential for business but seem to be a common source of energy consumption that could be better operationalised.

One of the fridges in The Fried Flounder consumed a lot of energy. More, it had its own operating procedure that had developed over the span of its 22-year-old life. As the manager noted, *'I don't know how many times I've said: "Remember to close the fridge!" It couldn't be closed properly. Or if people closed it too hard, it opened again!'* (Manager, The Fried Flounder). If not closed properly, the fridge would open overnight, potentially spoiling the food inside. The fridge thus required a set of practices and managerial attention to actually work. Additionally, the manager explained: *'Now I talked to the supplier when he was here [installing a new fridge]. 22 years ago, a stronger engine was cheaper than insulation. Today, that's the other way around'* (Manager, The Fried Flounder). The fridge was thus also expensive outside of potentially spoiled food.

However, the fridge was not changed until the owner saw the information from the dashboard. As the owner recounted: *'If I was told: 'your fridge uses give times as much power as his fridge*

because it's old! Well, then I get a new fridge. It's be worth investing in it.' (Owner, the Fried Flounder). The owner also noted how

it was so old that it had a hard time keeping cold, and the evaporator froze... Ice got into the evaporator, and we had to have a man stand to heat it. There was far too much work in it. Then, you are also afraid that things will suddenly go wrong – that the temperature will be too high. (Owner, the Fried Flounder).

However, it was only when the numbers came that he made the change. He reflected on this, noting how, *'maybe you think more about when you get those numbers in black and white'* (Owner, the Fried Flounder). This would seem to indicate that the practice largely had become taken-for-granted. Only through the new numbers, the additional accounting information, did the thinking become challenged. The new fridge was then aimed at lowering cost; the less intense resource use was a spin-off benefit.

The numbers also meant that the restaurants changed some practices. As the owner from before noted, he realised upon looking through the numbers that: *'You have to get better at thinking about things and turning off the appliances you can in the off-season'* (Owner, The Fried Flounder). This related especially to fridge and freezer space. A manager noted how the owner, *'For the first time in the restaurant's history, he has turned it [a freezer] off! [...]'* (Manager, The Fried Flounder). Another owner noted how: *'We have two big cold rooms [...] [which] is a luxury but not a necessity. So, as soon as the high season is over, it will be shut down'* (Owner, The Sea Lion). The owner explained how, *'we all remember to turn off the lights. We were taught that. But the thing about saying: no, do we need two refrigerators? Can we settle for one? So, it makes you think differently than you would otherwise have done'* (Owner, The Sea Lion). Although affecting energy consumption positively, these changes were typically rationalised in financial terms, indicating the business logic.

However, some practices differed. All interviewees told that they because of the project were more watchful of keeping fridges or freezers open for as short a time as possible. The manager noted: *'not to say that the world's biggest win is whether a bad cooler is left open or closed five minutes over the course of days... but it's something'* (Manager, The Fried Flounder). This change did not make financial sense as an investment; rather, it seemed to focus on waste reduction as an end itself. It thereby, to some degree, indicated the presence of a sustainability logic.

4.2.2 Improved process efficiencies: The 'fish balls' story

Sharing energy information between each other led to an important lesson for all how food products are prepared and why energy was being used. One owner recounted:

We saw each other's numbers. So that's interesting too. [The owner of The Sea Lion], he had some ovens that used a lot of electricity. He couldn't understand why because he didn't use them. But then I said: 'Yes you do, because your mother, she thaws the meatballs in them'. 'Oh, yes, that's right.' [How I knew this? It's because] I'm always here in the morning... as is his mother. I can see what's going on. [...] She thaws them in the oven. That requires energy. You can also put them in your fridge: then they give off energy. (Owner, the Fried Flounder)

Without sharing these numbers and the help of The Fried Flounder, the owner of The Sea Lion would not have been able to make sense of why energy was being consumed at this ‘down’ time without customers. More, it could allow for a new thawing procedure. It got the owner of The Fried Flounder to reflect on his own cooking processes:

before, we used to do it like The Sea Lion. We made meatballs and froze them and stored them. We don’t anymore. We make them for the day. Or two, maximum three days ahead. [...] They aren’t frozen and they don’t need thawing. [...] I know we’re saving on the energy of it. When we made and froze 30 kilograms at a time, we had to get it into a quick freezer, freezing them as fast as possible. I don’t know how much, but it consumes a lot of power, right? [...] And then when thawing them. We had to thaw them in the oven. That is why I know that the way we are doing it now is saving energy. [...] It’s just the procedures that need to be changed. (Owner, The Fried Flounder)

4.2.3 (Potential for) Improved controls through collaboration? The heat lamp paradox

Danish summers can be unpredictable. As all seating is outdoors, weather is instrumental for the restaurants’ performance: bad weather means fewer potential customers. The use of heat lamps is ‘expensive’ but serves two functions: 1) to ensure customers are kept warm when consuming food and drinks; and 2) to ‘welcome’ customers in dark and dreary days.

The use of heat lamps, however, is problematic for energy consumption and, paradoxically, for financial performance. In comparison to the effects of fridge-freezers and the freezing-thawing processes connected fishball preparations, the outdoor heat lamps seemed clear ‘energy guzzler’ to each of the individual participating restaurants dashboard’s implementation. As one owner noted,

Of course, we don’t turn them [the heat lamps] on for fun. If the neighbor turns them on, the guests go there. You could say: ‘okay, it may cost me 100 crowns to turn it on now, but if you sell for 1500 crowns, that doesn’t matter, right? That’s the way you have to think. ... When they [the restaurants] are open, there’s war, right? You have to know what your neighbor is doing. If the neighbors put out blankets, then we put out blankets, right. And vice versa. If I had to have the heat lamps on from morning to evening, then I am happy to do it – if the neighbors do it too. (Owner, The Harbour Bistro)

The use of the lamps in a sense presented the owners with a prisoners’ dilemma: to consume less resource by not turning the lamps on at a cost to potential revenue. What now becomes of interest, is the use of the information regarding the heat lamps’ energy consumption: it allowed for considering future alternatives.

When all the restaurants met, they discussed this issue. This led an owner considering the (potential) importance of collaboration between competitors to attract custom, beyond the locational factors that affect passing trade:

We have to... Collaborate, I was about to say. As colleagues – when the doors are closed. [...] It’s more a matter of saying: we don’t turn them on until after 6 o’clock, right? But you can’t. After all, we should not run each other’s businesses. (Owner, The Harbour Bistro)

Although ‘just not turning the heat lamps on’ was a possibility, the prisoners’ dilemma meant that it was unworkable. It nonetheless allowed for other ways of thinking. Regarding the

‘welcoming’ functionality of the heat lamps, the owner of The Harbour Bistro has thought about installing lights:

‘When it’s warm enough, we could avoid using these heat lamps as lighting. We don’t have any light outside. Neither do the others. And then could you put up some light in some cheap way on those July evenings, right?’ (Owner, The Harbour Bistro)

This represented the potential for new technical solution. Another owner similarly reflected on possibly improving the functionality of the heat lamps themselves:

We have actually started to investigate whether you could get some heat chargers where you could turn down a little, so they use less power. [...] Such a night where it’s a little cold, but still too warm to be able to turn on the heat lights. (Owner, the Sea Lion)

The potential collaborations through the community logic thus had a firm boundary: The restaurants directly competed for customers, and different practices, even if entailing collectively consuming less energy and thus lower cost, could not reasonably be implemented at a cost to revenue. The heat lamp-dilemma had no solution through the community logic then dominated by a business logic. A solution, effectively, was only potential through technical means.

4.2.4 Resistance when comparing information

The example of the heat lamps indicates potential for collaboration between the businesses. While the heat lamps illustrate the tension between energy consumption and costing money, alongside bringing in business in the form of welcomed and warmed customers, the most ‘efficient’ appliances are not always considered to be ‘the best’. Other factors come into play in the decision-making process:

I have a cooker hood that uses a lot of electricity. But that’s because it’s much more efficient than their [the other two restaurants’] cooker hood[s]. It’s more powerful. Now, then, I know what that. And I don’t think I’ll do anything about it. Because I think it is more important that what it sucks out of the air doesn’t go into my lungs. That’s also a good investment. (Owner, The Harbour Bistro)

While clearly consuming more energy in comparison to her neighbours, the extractor hood is paradoxically not always considered the best option for the owner in The Harbour Bistro in terms of health:

It also makes a lot more noise, mine. And I can feel that after a season I am half deaf! When I’ve gone through the winter, I can hear it all over again. [...] Because I stand there by hood all summer. (Owner, The Harbour Bistro)

As such, decision making while sometimes tied to accounting information from the dashboard in terms of making cost savings through energy improvements, it is not always motivated by the profit motive. That is, this ‘fancier’ extractor hood costs more but there is a perceived value by the owner of The Harbour Bistro that is it more efficient in terms of removing harmful air filled with fats, smoke and cooking residues.

4.2.5 General perceptions of the dashboard at the end of Year 1

The network explored in this paper is seemingly unique. Competitors share their accounting information as part of a collaborative project to understand how energy is used based on the implementation of a dashboard. This tells managers where, when and how energy is being consumed in real time. At the end of Year 1, the numbers from the dashboard seem to have a comparative function *between* the participating restaurants. This was important:

I get something out of – personally – when we compare whether I’m better at it than he is. So. But... So, then “Why am I better there?” Or “why are you better there?” Because if we compare ourselves with a restaurant located [in another location]. That makes no sense. Here, it makes sense. (Owner, The Fried Flounder)

If my neighbours hadn’t been involved in this project, I don’t think I would have gotten as much out of it. I do not think so. (Owner, The Sea Lion)

That is, without knowing more about the immediate competitors’ consumption, the businesses were unable to make informed decisions about their own:

Well, the neighbour’s extractor hood consumes a lot of electricity. Mine consumes a lot of power. But that one – it uses three times [as much]! Then you think about what an extractor hood is, and when the grill is on, it has to run! After all, you can’t just say that now we turn off hoods because now we have to save their power well! (laughs) So there, there is no alternative!! Such hood, it should run. But then you can go in and then look at it: Well, how often do you actually clean it, for example. It’s only where we’ve been able to compare with my colleagues [the two other fish restaurants] that I think it’s really interesting it... When I stand out a little and have a higher power level I ask, ‘why’? Why do I spend more power on this? And then of course I go in and I dive into it [the reasons why] (Owner, The Sea Lion).

Additionally, the information from the dashboard serves a comparative function *within* the restaurants:

What's been most exciting for me has been to sit to compare. To look at my numbers: I use that on heat lamps and I use that on dishwashers, and then I say: Well, Because I haven't looked into something like this before. I haven't cared about something like that; I haven't made budgets for how much can I spend on electricity. Because I use what is necessary! [But, the information from the dashboard] becomes a warning: “Hey, someone forgets to turn it off! Why does it have to be left on at night?” And maybe you can wait half an hour to turn on the fryer one in the morning, because you don't have to turn it on right when you come through the door at 9 o'clock; you might want to wait until 10:30 because we don't open the kitchen until 11 o'clock. And things like that... seeing when power is consumed and when it increases. (Owner, The Harbour Bistro)

4.3 Year 2 of dashboard implementation

4.4 Overall reflections by the restaurants of using the dashboard

5 Analysis

Note! The analysis has not been developed and is based on brief notes here in order for you to see our analysis behind the empirics already presented after Year 1.

Listening to the stories from those involved in running the small fish restaurants, it becomes clear that the implementation of the dashboard has affected how decisions are made within and between the three involved restaurants. Various interviewees put forward anecdotes that give us a picture of how decisions were made before the implementation of the energy dashboard. These anecdotes can be interpreted against the project's intention to **COMPLETE**. These are framed from an institutional logics perspective that will be discussed in the following.

- Environmental efficiency was not the main goal driving the business models of these three small fish restaurants, even if they agreed to participate in the project. Rather the initial motivation to participate was driven by the presumption that it might increase profits. Revenue, to a large extent, was externally given; cost could be lowered.
- Business logic hybridising with green/environmental/a restricted sustainability logic: adds value in its own right and in addition to financial value in terms of cost savings. As in earlier literature, business logic's economic concerns dominate.

The example of the fishballs story as well as the general perceptions of the dashboard for sharing information between participating restaurants shows a third logic at play, a community logic (see York *et al.*, 2018). **FURTHER ELABORATION OF WHAT SUCH A LOGIC ENTAILS; the collaboration preceding the project also to be investigated further.**

- During the meetings, the discussions on the information from the individual restaurants' dashboards became meaningful in new ways. The numbers became so in comparisons: who performed 'better' and 'worse' – and why? They also became meaningful through their overall collaborative rapport: Drawing on personal knowledge of operations between owners to interpret information previously unintelligible to those that, in a sense, produced the numbers themselves. Such a logic then, as in York *et al.* (2018), enabled more sustainable practices. The logic allowed for a tighter compliance with sustainability logic, and thereby a stronger hybridisation with the embedded business logic. It ran counter to a business logic in the sense that competitors effectively helped each other rather than competing. The influence of the community logic, however, had its boundaries.

When the green logic becomes institutionalised → becomes a way of sustaining new practices and part of taken-for-granted assumptions on how to run a business? The new numbers becoming meaningful through three means: 'on their own', through 'consultant-like work of project managers', and lastly, and most interestingly, 'through networks', thereby introducing a third logic, i.e. community. Great to get new numbers

to represent sustainability way of viewing things and business way of viewing things but more than that, how it actually makes them environmental is dependent on the community logic.

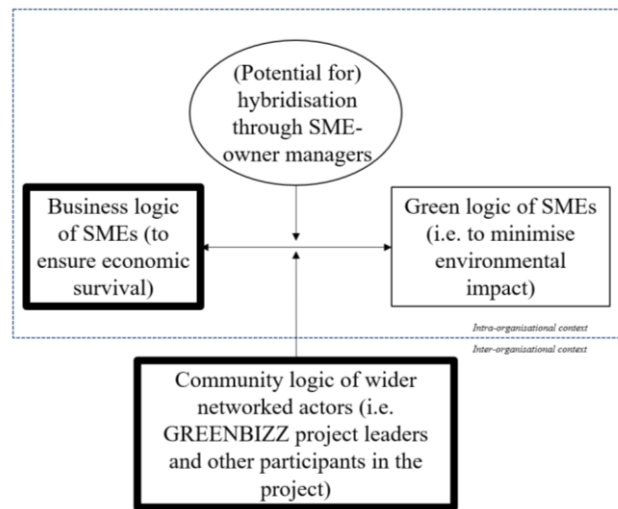


Figure 2. Interaction of logics after year one (weight of the logic indicates its importance)

Similarities/differences in terms of how they used the information from the dashboard?

- Weather, heat lamps = prisoners' dilemma
- Inter-organisational accounting practices = Competitive and collaborative (coopetition) inter-organisational accounting → Inter-organisational accounting and accounting in networks (horizontal accounting between SME competitors)
- What makes them change practice? When the numbers become meaningful through the three means
 - How 'deep' does it go? How far do they take the numbers? → investments as 'easy'; practices as harder. E.g. implications to product mix?
- Very collaborative but difficult to enforce agreements as informal. Questions for later:
 - How 'strong' is the community logic?
 - Can others be 'let in'? (New owners, the two other, non-participating restaurants)
 - How far does the network go? (e.g. suppliers, potential new other competitors?)
 - Knowledge prior to our project yet to be investigated:
 - The Fried Flounder's motivation: "to promote Skagen as a city that cares about the environment" à "They want to be green, but the business case must be economically profitable. They don't want a solution where they are not guaranteed to get green energy."
 - Changes to supplier deliveries: one place together with other (competing) restaurants

- Product mix: from 40 to 15 dishes? More vegetarian dishes?

6 Conclusion

Possible contributions:

- Institutional logics providing a distinct perspective on environmental management systems: integration literature with an end goal of integrated goals >< hybrids as unstable if including incompatible values (→ Ahrens and Ferry 2022)
- Community logic and network learning through (bounded) cooperation between competitors: competitors by day; collaborators by night
- “Accounting at the margins” (Miller 1998?) = new accounting numbers and their implementation

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