

Marketplace platforms as drivers of agency in addressing societal challenges

Magdalena Pfaffl^{1*}

¹ Luleå tekniska universitet, Laboratorievägen 14, 971 87 Luleå, Sweden

Abstract

The challenges faced by inland villages illustrate the techno-social relationship by which information systems can be means of agency in addressing societal challenges. This paper follows the progression and effects of a relocation project using a marketplace platform over the sixteen-year period from its induction to the present day through a longitudinal process study. By analysing the narrative with the help of the push-pull-mooring framework, as well as structure and agency theory, actor-based barriers to adoption can be identified. Our research highlights the importance of considering mooring factors to optimise adoption of information systems. It was further found that the co-evolving of technological and social systems led to the marketplace platform becoming a driver of agency. The findings expand the understanding of data literacy and agency in social-technology interaction, especially regarding exploring how information systems and technology can be used to address societal challenges. This study further contributes to the emerging concept of rural living labs (RLL).

Keywords

Push-pull-mooring, agency, marketplace platforms, data literacy, socio-technical interaction, actor-based barriers, RLL

1. Introduction

In 2008 a small village in Sweden's Ångermanland province faced what was perceived by its inhabitants as an existential threat: The potential closure of its elementary school. This was the trigger for a major relocation project that is still ongoing as of the writing of this paper, in the summer of 2024.

This paper describes a longitudinal process study of the village's relocation project, in the following called the RRP. At the centre of the RRP lay the creative usage of a marketplace platform as a marketing tool. While against the marketplace platform's rules this activism enabled the village to reach out to potential new residents. The RRP was perceived as an overarching success by the members of the core relocation group, the general village population, as well as municipality officials. What is more, the activism triggered by the RRP has led to a general increase in village agency and activism and thereby has lasting effects even a decade after the active phase of the project.

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* Corresponding author.

✉ magdalena.pfaffl@associated.ltu.se (M. Pfaffl)

ORCID [0000-0002-8246-9907](https://orcid.org/0000-0002-8246-9907) (M. Pfaffl)



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Data was gathered over the span of ten out of the sixteen years between the induction of the process and the present day, with the bulk of interviews taking place in 2015, as well as secondary source analysis spanning the whole period and repeat interviews in 2022, 2023 and 2024.

This paper contributes to the emerging literature on the potential of platforms as drivers of addressing societal challenges. It uses the push-pull-mooring framework in combination with structure and agency theory to uncover factors that are conducive for analytical-critical thinking and the skills related the bottom-up use of existing information systems and technology (Gangneux, 2021) that are facilitators of capacity in use of technology in communities (White and Foale, 2023). This paper further adds to Habibipour et al. (2021)'s emerging concept of Rural Living Labs (RRL) by attempting to answer Habibipour et al.'s call for an increased understanding of how RRLs can be models. Therein this paper also builds onto the author's own prior scholarship of remote villages as places of utopics and living laboratories (Hetherington, 1997; Pfaffl, 2019; Raven, 2015).

Beath et al. (2013) describe the focus in the field of information systems (IS) lies on the interplay between technology and organization, while Benbasat and Zmud (2003) see its focus on operational practices that can be used for directing information technology (IT) artefact usage and evolution. To achieve this means, Sarker et al. (2013) point out the inherently interdisciplinary nature of the IS subject. In utilizing a case study from applied geography as an example for the interaction between the social and the technical, this study falls within the socio-technical tradition of Scandinavian IS research (Bjørn-Andersen and Clemmensen, 2017). It is a type II study according to Sarker et al. (2013).

1.1. Knowledge gap

In the field of IS agency is mostly discussed in the context of the conflict of agency between technology and human (Gangneux, 2021; Kennedy et al., 2015; Rose et al., 2005; White and Foale, 2023). While there is an emergent discussion of agency as an act of resistance (Gangneux, 2021), little focus has been put on exploring how IS can induce or support agency. Digitalization in rural and remote areas is increasingly studied (Cowie et al., 2020; Habibipour et al., 2021), however predominantly so with a focus on digital infrastructure and the threat of being "left behind" (Cowie et al., 2020). This paper seeks to introduce another aspect into the discourse.

In specific, this paper will explore the RRP as an act of agency by the relocation group that was only possible due to the use of marketplace platforms. In particular:

1. How can marketplace platforms enable agency to address societal challenges?
2. What are the consequences, short and long-term, of using marketplace platforms as an enabler of agency to address societal challenges?

2. Literature review

2.1. Moving from one state to the other: Push-pull-mooring and structure and agency theory

The push-pull-mooring (PPM) framework has its roots in migration theory, it was conceived to explain the migration of people from one place to another. According to PPM the decision to migrate is based on a combination of attractive (pull) factors in the target location, as well as repellent (push) factors in the source location (Boyle et al., 1998). Mooring factors were introduced into the theory to describe other factors that pose obstacles to migration even where the combination of pull- and push factors would make migration favourable (Hsieh et al., 2012).

Like PPM, structure and agency theory can be used to understand decision-making in the context of IS. In structure and agency theory the focus is put on the power dynamics between operand and operant parts of a network (Lusch and Nambisan, 2015).

Structure, in this context, is what is pre-defined and provided by both internal and external forces, or in other words: Structure consists of schemes and resources (Sewell, 1992), or in Lusch and Nambisan (2015)'s understanding of operand resources. Bakewell (2010) notes that structure is often misunderstood as a constricting factor to the exploitation of agency while in their observation it is also a vital framework and prerequisite for it.

Agency, on the other hand, describes actors taking charge and shaping their own environment, i.e. operant resources (Lusch and Nambisan, 2015). In remote villages, individuals' agency, i.e. the actions taken by individuals or small groups can have a significantly stronger influence on the village than they do in larger settlement types (Carson and Carson, 2014; Pfaffl, 2019). However, while agency provides remote villages with opportunities it also introduces risk. For instance, not only can a limited number of agents negatively influence a village, but in a situation where the number of agents is small, a temporary or permanent shortfall of only one agent can pose a problem for the community (Carson and Carson, 2014; Skerratt and Steiner, 2013)

Agency is a complex phenomenon that is dependent on structure to support it, thus the possibilities of agency in a system that lacks structural support or even has counter-active structure is limited. A lack of understanding of this dependence on structure for effective use of agency can lead to what has been described as 'neo-liberal victim blaming' (Connor, 2011).

2.2. The application of push-pull-mooring and structure-and-agency on the socio-technical aspects of IS

PPM has in the last decades increasingly been used to explain migratory beyond the migration of population (Chi et al., 2021). Within the field of information systems, the framework is used to explain for example the migration behaviour of users from one platform to another (Hsieh et al., 2012) or from non-digital to digital solutions (Handarkho and Harjoseputro, 2020).

Within IS structure and agency theory is utilized in structuration, as well as actor-network-theory (ANT) (Rose et al., 2005). Both describe the relationship between human and technology. While structuration theory sees agency as a purely human phenomenon, shaped by the

structure human agency has created in the first place, ANT analyses technology as actors. Rose et al. (2005) note that while both approaches have contributed to understanding IS, their competing views on agency leave a research gap. Lusch and Nambisan (2015), while not explicitly referring to structure and agency theory are using a similar concept when describing the interplay of operand (resources to be acted upon) and operant (resources that act upon others) resources.

More recently, agency in the context of IS has been discussed in the context of resistance and individual's rights within society. Gangneux (2021) discusses agency in the context of young people's use of messaging platforms and advocates for an extension of the digital literacy concept to include critical structural and critical analysis and the actual "bottom-up and actual uses of technologies" (Gangneux, 2021, p. 462). A further interesting concept in the context of human-IS interaction is that of the capability approach as the "agency of making meaningful choices" (White and Foale, 2023, p. 1069).

Avelino et al. (2016) analyse actor-based power structures in transition processes and in specific related to their socio-technical aspects. They note how "social processes co-evolve with technical, infrastructure and ecological systems" (Avelino et al., 2016, p. 558). Avelino (ibid.) further points out how researchers such as Swilling et al. (2016) increasingly question the "David and Goliath" dichotomy between the regime and civil society and instead invite to a re-definition of "regime" in the sense of micro-politics.

2.3. Rural and remote villages as understood through the capabilities approach and as Rural Living Labs

Research on agency in rural and remote villages understood through the capabilities approach (White and Foale, 2023) is still in its infancy. Traditionally seen as perpetually in decline (Cloke, 1985, 1977; Pfaffl, 2019) and defined by their dependence on the centre (Carson and Carson, 2014) more recent scholarship is starting to question this paradigm.

Pfaffl (2019) as well as Habibipour et al. (2021) for example observe how villages develop their own solutions to cope with services not centrally provided. Pfaffl (2019) further shows the capacity of remote villages to be heterotopias (see even Vidler et al., 2014) and how this capacity in turn leads to acts of utopics (Hetherington, 1997; Raven, 2015), that is striving towards utopia, as an expression of agency and capability (White and Foale, 2023).

3. Research Method

3.1. Data gathering

To understand the RRP from a systems perspective the methodology of a longitudinal field study in the form of a process study following the Langley (1999) framework was chosen.

The village studied in this paper was initially one case included in the larger 'Heterotopia' multi-case study (Pfaffl, 2019). For this study, remote villages were chosen as an extreme case

due to extreme cases' capacity of more vividly demonstrating phenomena (Flyvbjerg, 2006; Yin, 2003). Case sites were chosen following a multi-factor case selection following a polar types (Eisenhardt, 2021) sampling strategy. The polar types strategy controlled for other potential explanations for phenomenon encountered than the observed phenomena being a function of the site's remote position. The chosen approach is thus in line with Eisenhardt (1989) who notes that random selection is neither necessary nor preferable when theorizing from case study research, but that instead a targeted selection can be preferable.

For this article only one of the cases is analysed, as a standalone observation, instead of using it as a data point in a multi-case study (Yin, 2003). To do so, the data gathered in 2015 for the original study was expanded on in order to follow the relocation group over a ten-year period from 2014 to 2024.

The main type of data gathered for this study consists of semi-structured interviews.

In May 2015 the village was visited for several weeks and a total of 15 interviews with residents were performed, focusing on key persons within the villages' civic society to understand the drivers behind innovative projects in the village, of which the relocation project was the most prominent but not the only one. Out of the fifteen original interviewees ten mentioned the RRP. An additional interviewee the municipality was interviewed about the RRP in 2024.

During 2015-2022 the village's progress was followed via social media, in specific via the village's Facebook group and later the RRP's own Facebook group, as well as Facebook posts made by key stakeholders on their personal Facebook profiles. Facebook was the only social media channel used for outreach by the RRP.

In January 2022 as well as April 2024 we followed up with two of the key stakeholders of the relocation project, as well as with an additional stakeholder at the municipality, also in April 2024.

While the 2015 interviews were based on a shared interview guide with pre-defined main questions, supplemented by follow-up questions depending on each interviewee's area of expertise the later interviews were opportunistically driven (Volmar and Eisenhardt, 2020) by the emerging theory and categories (Eisenhardt, 2021, 1989; Gioia et al., 2013).

For all interviews a note-taking strategy was chosen after we found early in the research process how notetaking facilitated the data gathering process by giving interviewees instant feedback on the relevance of their answers, as well as providing for natural spaces of silence. Most of the conversation was recorded in the form of direct quotes.

Walsham (2006) notes that the absence of recording can lead to interviewees being more open in their answers. Walsham (2006) further explains how interview situations contain information beyond the spoken word. To capture even this dimension a second set of notes in the form of a memory protocol was taken directly after each interview. In addition, unstructured field notes were taken as, as Eisenhardt (1989) recommends, a means of overlapping data collection and analysis.

Interview data was supplemented with secondary data, namely publications about the village in mainstream media and a 2013 photo exhibition featuring the relocation project.

3.2. Analysis

Following a multi-stage process as suggested by Langley (1999) interview data, as well as secondary data were first ordered through narrative analysis, which served as the basis for visual mapping (Gehman et al., 2018; Langley, 1999). The narrative analysis also prepared for a synthetic strategy (Langley, 1999) using two-level coding according to Gioia et al. (2013).

To quantify the effectiveness of the RRP the qualitative data were supplemented with a quantitative analysis following Eisenhardt's (1989) advice on the use of multi-method designs in case studies. To do so I analysed secondary data, namely open data from Statistic Sweden. The smallest available measurement area in the dataset is the demographic statistical area (DeSO) where one DeSO (imperfectly) describes the area in question was chosen. To get a context to understand the village's demographic development against, the population development of four other DeSOs from the same area but not bordering on the village's DeSO, or including towns, was compared with the village studied. The five DeSOs were analysed regarding the total population size, as well as the total and percentage of families with children. Data was available for the years 2011-2023.

3.3. Concluding remarks on methodology and method

Given the duration of this study changes surrounding the researcher's circumstances can have an impact on data gathering and analysis: While I started my research as an outside researcher according to Walsham's (2006), as time went by, I moved more towards becoming an involved researcher by getting involved in a national village relocation project myself. This poses both opportunities through access and rich immersion in the data, and the potential for bias (Walsham, 2006).

Further, when data gathering was commenced in 2015, I did not live in Sweden, nor did I speak the Swedish language fluently. By the time of the follow-up interviews in 2022 this had changed, which, again comes with the associated opportunities and potential biases. While the language barrier forcing me to perform interviews in not just my own but also the interviewees' second language can have had a negative impact on data quality, my 2015 situation did endow me with an outside perspective and "fresh pair of eyes" that I had lost in 2022.

4. Results

4.1. Narrative analysis

In 2008 the municipality flagged for a potential closing of the elementary school in the researched village due to dwindling numbers of children in the vicinity. For the village population this was an existential threat. Losing the school was perceived as a point of no return that would not only lead to more families leaving the village and its surroundings, but also effectively prevent any more young families from moving in.

Without the school families aren't going to move here. If the school and the shop the village will die with just a couple of years. (Interviewee E, 2015)

With the school threat looming residents, led by some of the remaining families with school-age children, started organizing themselves and considered their options. This led to the formation of an informal "relocation group" (*inflyttningsgrupp*) within the village that had as its mission to get new families to get to move into the village.

*We need to develop the village if we want to stay here.
We need to keep the school, the kindergarten and the store. But for that we need more people.
(Interviewee A, 2015)*

After the end of the formal interview two of the founding parts of the relocation group mentioned how in 2011 "one of the senior residents that were the driving forces behind keeping the village as it is" left. Both described this as a moment of opportunity that opened possibilities for changes within the village to be made, and thus for renewal. Without these individuals leaving, both interviewees hinted, the relocation project as it unfolded might not have been possible:

Later on she confided in me ("but this is our secret, okay?") how one person leaving (I know who that is because [Interviewee A] talked about him too) had made the change in [the village] possible. They had all been very happy when he went, [she] said. (Field diary describing interview with interviewee J, 2015)

The relocation group could now take more drastic action. Interviewees described a process of iterative analysis taking the acute problem, the pending school closure, as a starting point:

First, we sat ourselves down and asked ourselves [what kind of people] we were looking for. We wanted people who were looking for a life change. (Interviewee A, 2015)

*People don't know about villages.
People are different. Some would love to live out here. Even if that is only 1% of the total population that's more than enough for [the vilalge]. (Interviewee B, 2015)*

The relocation group concluded that more people needed to move in, then continued to analyse how people could be made to move. The group reasoned that what was needed was more people knowing about the village's existence and building on this conclusion they set out to find ways to "put the village on the map":

We need to come to the people. People can't come to us. (Interviewee A, 2015)

Initially considering advertising in the Stockholm metro the idea was soon dropped because of the cost associated. Instead, the group turned its attention to the Swedish marketplace platform *blocket*. The group listed the village as a whole as "for sale" in the platform's real estate section. As this was against *blocket*'s rules and they were asked to take down the advertisement, they subsequently changed the advertisement into an offering of guided tours of the village for a symbolic 20 SEK:

We used blocked.se. We put [the whole village] up for sale in an add. There was a lot of outcry. We then [changed the ad and instead offered] guided tours of the village for 20 SEK. This way people got our contact details. (Interviewee A, 2015)

Blocket, started as a local second-hand market in 1997, has developed into a marketplace for everything from household items to cars, real estate and jobs. According to its own website, *blocket* is one of the largest buy-and-sale platforms in Sweden with five million visitors every week and nine of ten Swedes having bought or sold something on *blocket* ("Om *Blocket*," 2024).

The advertisement triggered interest in the village with "many families" getting in contact for the guided tours. The tours were organised by the relocation group who showed the village and its infrastructure, answered any question the interested families might have, but also pointed out houses for sale and in many cases helped interested families in getting in contact with potential sellers.

Between 2013 - 2019 the relocation group has also had a stall at an alternative music festival in a neighbouring village, as well as designed an information brochure about their village (Norström, 2013). The village and in particular the relocation initiative was also featured in a 2013 photo exhibition and accompanying photo book (Lundgren, 2015).

We put up a tent [at the festival] and just stood there. We had a contest. Maybe nobody moved because of [the tent at the festival] but if it spread the word that's good enough. (Interviewee A, 2015)

It is unclear how many relocations were triggered by the project. In 2015 interviewee B reports on 16 people (ten adults and six children) having moved in as a direct result of the project, while a 2013 TV broadcast quotes another resident as claiming twenty-five young families having moved to the village during the preceding six years (Lundström, 2013).

By 2015 the relocation group reports that the most sought-after houses had been sold. Interviewees voiced that there is continued interest in moving to the village so its population theoretically could grow further, but this interest is impeded by lack of housing. There was a clear sense of frustration over houses that don't conform with the "little Swedish dream" not being sold:

Swedish people want the same thing. They want a pretty, big house. Preferably they want an old house. They want a big block of land and the ability to have animals. That's the Swedish little

country dream with a red house. But the house they want also can't need maintenance and it has to be cheap. (Interviewee A)

People love their homes to death. We try to persuade them to sell their houses inexpensively. They only live there some weeks [of the year] [anyway]. (Interviewee C, 2015)

Another area of frustration was second-home owners that refuse to sell what is seen to be potential family homes:

Why do people in Stockholm feel a right to a weekend house that really isn't a weekend house? It should be more expensive to own a vacation home that could also be used as a full-time home. [For instance] there is a white home [in the vilalge that is used as a vacation home] that you could do so much with. It also has two smaller summer houses. It really annoys me that it is owned by a family in Stockholm who rarely come up here. (Interviewee A, 2015)

By 2015 cracks were also starting to appear within the relocation group. Especially people outside of the innermost circle voiced concern about the too-small number of active people "burning themselves out":

I'm in the school group but that's getting too much now. Everyone works as a volunteer. They get tired. We either need to give something back to those volunteers or get new people with new ideas [to take over]. (Interviewee G, 2015)

I was in everything in the byalaget but I couldn't continue. I didn't have the time. (Interviewee I, 2015)

Others articulated how the movement was dominated by some individuals who kept out others that wanted to become active. One term in particular that was being used was the term "eldstjäl" [fire stealer], a wordplay on the Swedish "eldsjäl" [fire soul], i.e. a person that is very involved in civic society. In this case the expression was used to indicate a person that "steals" the "fire" from others in the community by having monopoly on it:

There is that idea of eldsjälar turning into eldstjäl. That's when one person steals the fire from the community. So if that one person walks away they take all the know-how with them. (Interviewee H, 2015)

More interviewees, however reported on an overall improvement to the "village spirit" and a rise in civic initiative, in particular among the younger people engaged in the relocation group:

There is a really good spirit among young people since the school crisis. I would dare the politicians to try and close the school now. (Interviewee C, 2015)

We used to wait for the municipality to do things. We have started doing it ourselves now. Ever since things have been a lot better. (Interviewee A, 2015)

We weren't as active before the school crisis. That's when the groups were founded. (Interviewee F, 2015)

After the advertisement and the attention around it the group continued their work, though on a slowly decreasing scale. Their focus progressively changed from reaching out to interested families to finding new ways to provide housing. One technique employed was trying to facilitate relocation chains. In one example a more central flat was found for an elderly inhabitant which in turn made available a family home to a new family. Also, the group worked on getting second-home owners to sell.

In 2022 the prevailing opinion was that all sellable houses had been sold:

We could be marketing more but we have no more houses to market. We were [at the festival] 3-4 times and met a lot of people. The result was that there were no houses – and if there aren't any houses, we cannot tell them to move here. (Interviewee F, 2022)

One project was the zoning of new residential land in cooperation with the municipality. However, as of 2022 none of the zoned land was bought. One interviewee who, as a public employee and directly involved in the zoning project as well as the village's relocation project has expert knowledge, attributes this to difficulties in obtaining bank loans for housing construction in rural areas:

We have advertised some of the new land on Facebook but nobody has bought it. It is very hard to get credit from the bank [to build a house]. (Interviewee F, 2022)

What is more, the relocation group was hit hard by the Covid 19 pandemic. They could no longer provide their hallmark village tours, nor could they reach out via their music festival stall. During the pandemic the group moved most of their efforts online and are, as of 2024 mostly using Facebook to advertise houses for sale. Facebook messenger has become their main means of contact for interested families.

4.2. Visual mapping

Through visually mapping the RRP (see Figure 1) three distinct phases could be identified:

The *crisis phase* marks the beginning of the process, induced by the possibility of school closure, an externally imposed threat. While the perceived threat triggers the formation of a volunteer group it does not lead to immediate action.

It is first a second event that is outside of the group's own control, the relocation of a person that were perceived to be a major stopping block to change in the village, that triggered a more proactive approach. This is what is referred to as the *active phase* of the project.

During this active phase activities happened in quick succession in what can be described as a situation of flow. What is more, the members of the relocation group saw near immediate positive effects of their activism, thus being provided prompt positive reinforcement.

After a few months of heavy activity, the active phase soon started to taper out into the more measured pace of what is referred to as the *maintenance phase*.

During the maintenance phase relocation group members initially focused their effort on continuing with the tried-and-tested activities of the active phase. As time progressed, the initial optimism of the active phase was accompanied and somewhat dampened by an increasing awareness of issues that appeared to put a limit to what was achievable. Earlier concerns about group member resources were eventually met by the Covid 19 pandemic that forced a stop of many of the main activities that were initiated during the active phase of the project.

Though it is too early to tell it appears following the caesura point marked by the pandemic the relocation group entered a fourth face, that of a *mature organisation*. This phase is marked by a sustainable level of activity, matured communication channels and relationships, as well as dampened realistic expectations for the project.

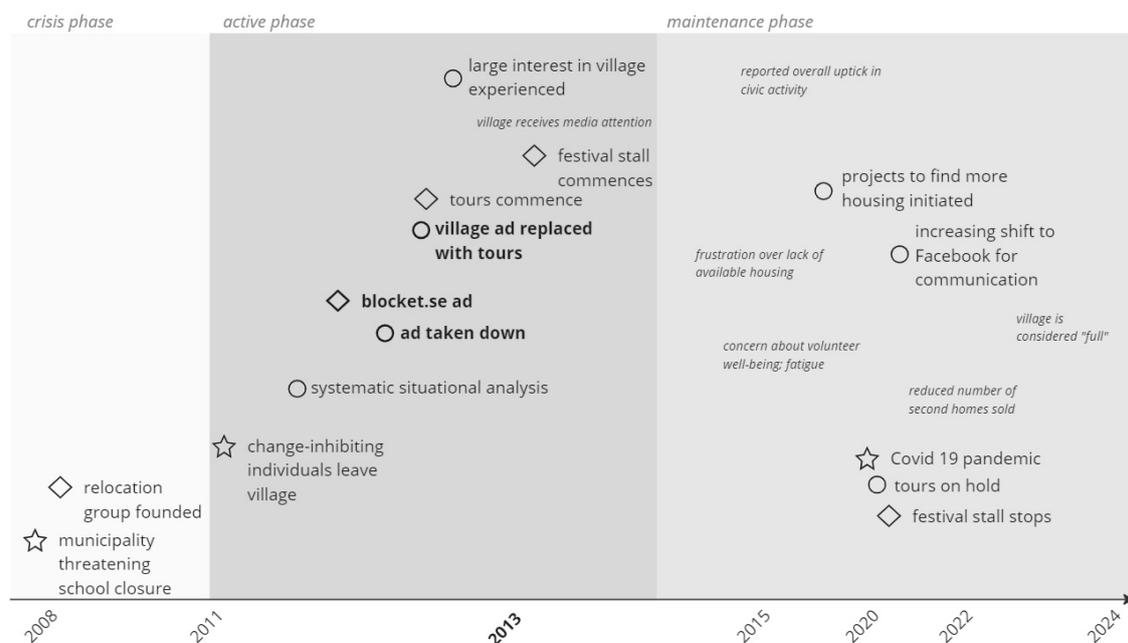


Figure 1 Visual mapping of the village relocation project

4.3. Analysis of secondary data

Surprisingly, no effect of the project could be clearly seen in the publicly available datasets from Statistics Sweden when comparing the village with four other demographic statistic areas in the vicinity.

While the village outperformed the control areas regarding total loss of population between 2011 and 2023, as can be seen in Figure 2, Figure 3 shows that the village performed worse than

the control areas regarding the development of the number of families with children, which after all was the target of the relocation project.

No clear deviation from the control group, nor any “spike” in the data during the core years of the project could be seen either when analysing total population and number of families with children on a year-by-year basis.

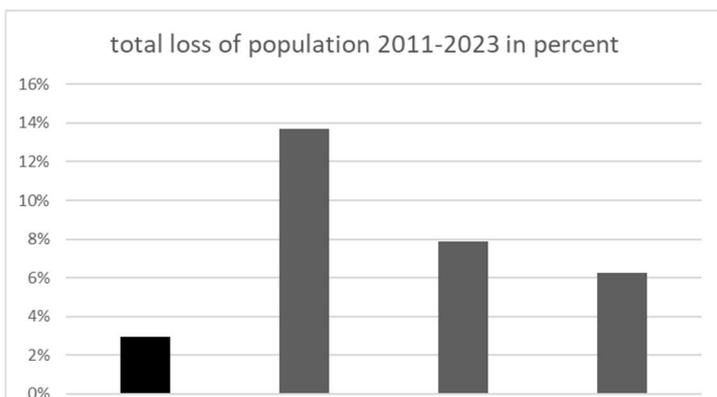


Figure 2 Loss of population from 2011-2023 in percent (source: Statistics Sweden)

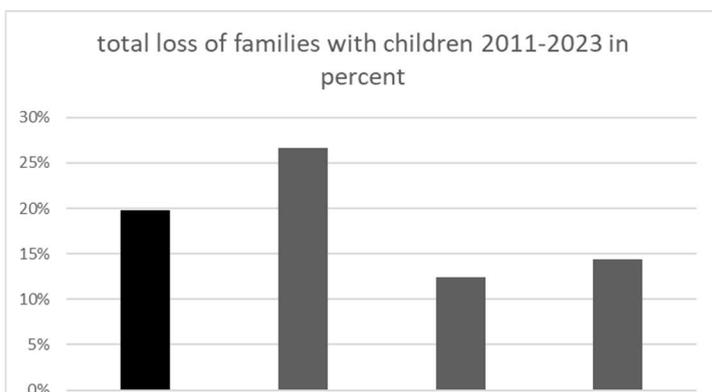


Figure 3 Total loss of families with children between 2011-2023 in percent (source: Statistics Sweden)

5. Discussion

5.1. Was the RRP successful?

The statistical analysis showed a disconnection between interviewees' narrative of the relocation project's success with statistical demographic data. Interviewees describe a tremendous success ultimately leading to a de facto halt of the project due to the lack of available housing. Self-reported numbers of new population for the core years of the project are

between 16 individuals and 25 families. That is a significant number given the total population of 614 people in the corresponding demographic statistical area in 2011.

Statistical data, however, shows no clear deviations from population development in the control group. In fact, the RRP area seems to be losing more families with children, the target group of the relocation project, than the control group.

One potential explanation lies in the small size of the dataset, where annual population changes usually are in the single-digit range. In such a small dataset statistical changes become chaotic and hard to interpret. However, the general image persists even when regarding the whole twelve-year period for which data was available. This points to the explanation being found beyond the problem of small datasets in statistics.

It is unlikely for the relocation numbers reported by project members to be entirely nonfactual. One possibility is that the relocation project has led to a replacement of population, in “blind spots” of sorts to the interviewee’s perception, rather than a population increase. For example, given the size of the demographic statistic area that includes both the core settlement and less settled areas, areas further from the central area could have seen increased depopulation where the relocation group was not as active or involved. However, with the data available for this study the above are pure speculations.

However, the narrative and visual mapping analysis enabled a look beyond the pure population numbers: Interviewees consistently reported a generally increased “village spirit”, and an increase in volunteering activity and initiatives within the village. Interestingly, this increased activity was reported as being especially strong during the *maintenance phase* of the project, as engagement in the core project started to taper off. In addition, the Heterotopia study (Pfaffl, 2019), which first introduced this village in this context reports on several examples of projects and civic engagements within the village for this period.

It can be argued that, while the quantitative success of the RRP might be up to discussion the rejuvenating and activating effect of the RRP are the true legacy of the project, as predicted by Avelino et al. (2016)’s notion of co-evolving of technical and social systems.

5.2. The RRP understood through the push-pull-mooring framework

The circumstances and challenges faced by the village in this study are by no means unique. Most of the Swedish inland is faced with disappearing structures and de-population in much the same way this village was (Peters et al., 2018; Rauhut and Littke, 2014). This fact leads to an intriguing question: What was it that led to this village being able to employ just the analytic-critical thinking that Gangneux (2021) advocates for as a part of data literacy?

The emergence of the RRP can be understood in the context of the push-pull-mooring framework (Boyle et al., 1998; Handarkho and Harjoseputro, 2020; Hsieh et al., 2012). For the RRP to come into effect a combination of threat (i.e. push factors), opportunity (i.e. pull factors) in combination with perceived agency as an un-mooring factor was needed.

The push factor in this case was a looming dystopic future where the village lost its school and after passing this perceived point of no return seemed doomed to perpetual decline. In

opposition to this dystopic future, residents' early discussions within the relocation group uncovered a contesting utopic narrative of a renewed village that acted as a strong pull factor *towards* a desired outcome. For this a strong sense of place (Pfaffl, 2019; Pfaffl et al., 2016; Sullivan et al., 2009) was needed, that is a feeling of belonging that expanded to an understanding that the village had much to offer – if only more people knew about it. In defining this utopic narrative, the group discovered its capacity to employ agency (White and Foale, 2023). Had the group not made this leap of thought there would not have existed a sufficient pull factor.

However, even though the push and pull factors were in favour of promoting activism, no such activism occurred for almost four years. Even though the pull factor in form of the school threat was present as early as 2008 and the relocation group was founded shortly after it was only in 2011-12 that the RRP really kicked off. Understanding this missing ingredient can help us understand what might facilitate the adaption of existing IS and platforms in other social challenge situations and beyond.

According to interviewees it was the relocation of one single person that was perceived as a major obstacle to change within the village that ultimately triggered the *active phase* of the RRP. It thus appears that this individual provided strong mooring to the non-active old state, and only once this obstacle was removed could profound change take place. Swilling et al. (2016) shares Avelino et al. (2016)'s notion of how "power in transition processes is not concentrated at a particular level (e.g. 'niche' or 'regime') or within specific actors, but [...] different dimensions of power are dispersed across interrelated agents at numerous levels." (Avelino et al., 2016, p. 560; Avelino and Wittmayer, 2016) thereby providing a possible model for an explanation within village internal micro-politics, rather than traditional structure and agency power dynamics.

The transition from the active phase into the *maintenance phase* gives a hint that the same might be true for the remaining two factors in the PPM-framework: As villagers and municipality officials perceived heavily increased migration into the village, the perceived threat to the village was reduced. Thus, the original pull-factor lost its strength. This may well have been one contributing factors behind the tapering-off of activism within the project.

These results also go in line with what earlier research (Carson and Carson, 2014; Habibipour et al., 2021; Pfaffl, 2019; Skerratt and Steiner, 2013) has found about the sensitivity of smaller and remote villages to seemingly small changes. Not only could the relocation of a single person facilitate the transformative action of the RRP, but the RRP had a lasting impact on the village that is hard to imagine for a larger place. However, not merely the positive side of this sensitivity was apparent, but also its dangers were apparent when interviewees voiced their concerns about the project relying on a small number of individuals that might burn out or otherwise become unavailable for the project.

5.3. Implications for socio-technical interaction

By applying the push-pull-mooring framework to analyse drivers of change from one phase of the RRP to another, including the process of choosing and utilizing the marketplace platform, we were able to confirm the observations of Hsieh et al. (2012) as well as Handarkho and

Harjoseputro (2020) in regard to the applicability of the push-pull-mooring framework in order to explain the migration of users from one state or platform to another. In particular, this study shows the importance of taking into account mooring factors when analysing why – or why not – technology is adopted or used in a certain way. By utilizing their agency and existing data literacy (Gangneux, 2021) the members of the RRP self-organized according to the capabilities approach (White and Foale, 2023) in order to utilize technology as a means of social change that is in its disruptiveness reminiscent of acts of resistance as observed by Gangneux (2021).

What is more the evolving of design and rules the marketplace platform and the social media platforms used later on in the RRP heavily influenced the development of the RRP beyond its pure technical aspects. This is in accordance with the growing body of evidence highlighting the role of technology not as static or operand structure, but as an active actor (Lusch and Nambisan, 2015; Rose et al., 2005). In the RRP technological and social systems co-evolved (Avelino and Wittmayer, 2016).

6. Conclusions

In this paper, by studying a village relocation project (RRP) I contributed to the emerging literature on the potential of platforms as drivers of addressing societal challenges by examining the progression of the RRP through the lens of the push-pull-mooring framework. In doing so factors important for the extension of digital literacy with concepts of analytical-critical thinking and skills facilitating the bottom-up use of existing technology and information systems (Gangneux, 2021), as well as how Rural Living Labs (RRL) can be utilized as models (Habibipour et al., 2021) were described. Further, a contribution was made to the understanding and utilization of capabilities approaches (White and Foale, 2023).

Q1: How can marketplace platforms enable agency to address societal challenges?

By analysing the RRP through the lens of the push-pull-mooring (PPM) framework it could be shown how migration from an inactive to active state occurs only when push, pull *and* mooring factors are conducive for the migration.

It is not sufficient for the opportunities generated by IS and IT, such as the marketplace platform of this study, to exist, neither for the need to use them to be strong. For such platforms to be able to facilitate agency for societal challenges, mooring factors also need to be considered. These mooring factors do not need to be directly connected to the technical aspect; they can just as well be found in the power dynamics surrounding local agents. When looking at the concise example of remote villages or other small systems, it is important to consider that even small factors can have a large influence.

Q2: What are the consequences, short and long-term, of using marketplace platforms as an enabler of agency to address societal challenges?

This study identified three phases for the RRP between 2008 and 2024. The threat of school closure led to a *crisis phase* that saw early activism through organization of an internal working

group. However, it was first when mooring factors were removed that the group gained the agency needed to move into an *active phase*. During this active phase actions happened in quick succession and positive reinforcement of the group's activism was near-immediate. Once the pull factor, by means of the immediate threat, lost its strength activism was reduced and the project led over in a *maintenance phase* where expectations were dampened and critical voices appeared through the optimism of the active phase. The Covid-19 pandemic, as an externally imposed caesura, further facilitated the transition into a sustainable, stable state of increased agency.

Due to the disagreement between qualitative and quantitative secondary data it cannot be concluded whether the RRP was successful in its core aim, the increase of the number of families with children in the area. However, the RRP has acted as a catalyst of change through its near-immediate positive feedback on the activity of relocation group members. This can be seen in the uptick of civil engagement within the village that was observed strongest not during the active phase of the project, but during the maintenance phase where engagement in the relocation project itself started to slow down.

7. Research outlook and concluding remarks

In places as dynamic and sensitive to change as remote villages (Carson and Carson, 2014; Pfaffl, 2019) information systems and technology have an immense potential for facilitating solutions to societal problems. What is more, these villages can be used as rural living labs (Habibipour et al., 2021) contributing to solutions that can have an impact beyond the village itself. This study showed one example of the two-way human-technology interaction that takes place before, during and after the utilization of an information system that facilitated agency and led to novel solutions to societal problems.

As this study is inductive in its nature it strives to contribute to a growing understanding and the new notion of rural living labs, a field that as both myself (Pfaffl, 2019) and Habibipour et al. (2021) note has potential beyond IS. In the beginning of this study, it was noted how Sarker et al. (2013) point out the inherently interdisciplinary nature of the IS subject. In looking at the potential of RLLs through the lens of this study, as well as my own earlier work I see how this, much like techno-social interactions themselves, is a two-way street.

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