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ABSTRACT

The emerging sharing economy has important policy implications. To strengthen the basis for policy making, we present an interview study involving sharing economy service owners, policy maker representatives, and research experts. Here, we analyse sharing economy services as human-machine networks, with particular attention to the networked actors and the relations between these, as well as the extent and structure of the sharing economy networks. The study illuminates key challenges and goals for sharing economy services from the perspective of service owners. Implications for policy making are discussed in terms of government regulation as well as self-imposed policies within and across sharing economy service providers.

CCS CONCEPTS

• **Social and professional topics → Commerce policy**; *Governmental regulations*

KEYWORDS

Sharing economy, policy making, interview study

ACM Reference format:

1 INTRODUCTION

The sharing economy is seen as a deep socio-economic trend with substantial potential for impact on individual citizens, industry and society. This is reflected in its growth expectancies, from an estimated value of 28 billion Euro in transactions during 2015 to a potential 570 billion Euro in 2025 [20]. The potential for new businesses and innovation in the sharing economy has been noted by government bodies [e.g. 9] as well as by academics and consultants [e.g. 1, 3, 20]. Given its predicted future importance, as well as its current impact on hospitality and mobility services, the sharing economy clearly has implications for policies that regulate, for example, service provision, working life, and taxation.

The development in the sharing economy is made possible by advances and uptake of networked digital technology and an increasingly technology-savvy population. Specifically, the opportunity for large groups of people to engage through their personal digital devices in human-machine networks has been central to this development. By human-machine networks we mean assemblages of humans and digital machinery that enable novel and innovative outcomes [23]. As, for example, the networks of consumers and sharing economy platforms enables novel and innovative consumption patterns.

Nevertheless, a number of important challenges lie ahead on the road towards realising the potential of the sharing economy. In 2016, only one-fifth of European citizens had used sharing economy services [22]. Furthermore, the market is dominated by a handful of large international actors towering above hordes of smaller local or regional service providers; the latter typically being start-ups with an uncertain future [21]. There has been substantial controversy and conflict in regions and sectors where sharing economy services have entered [11], and there is significant uncertainty about the policies needed to make the sharing economy work in the interest of individuals and society at large [14].

Given the challenges ahead, there is a need to strengthen our knowledge regarding how the sharing economy's potential may

be realised, and how sharing and collaborative consumption can be established as mainstream consumer behaviours. Specifically, we need to understand what the main challenges and opportunities look like from the perspective of those driving this development: the sharing economy service providers. We also need to understand the required policy responses to these challenges and opportunities, in terms of government regulation as well as self-regulation among sharing economy service providers.

There is already an extensive body of knowledge in relation to sharing economy services, especially with regard to theoretical considerations and user studies. However, relatively little is known about service providers' perspectives on challenges and opportunities in the sharing economy, and how these perspectives can guide policy making.

Towards addressing this knowledge gap, we present a study based on 19 interviews with sharing economy service providers, policymakers and researchers. We invited the participants to reflect on future challenges and goals for sharing economy services, and on the need for policies that respond to these. The study was conducted in Norway, which was considered an appropriate research setting by virtue of the country's relatively small size and advanced position in terms of the availability and uptake of networked technology. The study contributes new knowledge on sharing economy services as human-machine networks, as well as new insight into sharing economy challenges, opportunities, and policy implications. Policy implications are discussed at the level of government regulation, and also at the level of self-imposed measures within and across sharing economy service providers.

The rest of the paper is structured as follows. Following a review of key background literature and studies, we explicate our research objective and detail the study method. We then present and discuss our findings, summarise key policy implications, and suggest future research needs.

2 BACKGROUND

2.1 The Sharing Economy

Sharing and collaborative practices are as old as humanity itself [1]. However, the sharing economy has only recently emerged as a mode of access to goods and services, driven by the development and uptake of networked digital devices. In particular, the uptake of broadband-connected smartphones has been an important driver of this development [17].

The sharing economy is characterised by access to goods and services rather than ownership, and by reliance on the internet to facilitate and coordinate such access [1]. Typically, both the supply and demand sides of sharing economy transactions involve non-professional consumers, with service providers playing the role of an intermediary [9].

The *sharing economy*, along with its sibling construct *collaborative consumption*, has been conceptualised and delimited in various ways. According to Belk [1] it refers mainly to "people coordinating the acquisition and distribution of a resource for a fee or other compensation". Botsman and Rogers [3] hold a broader conceptualisation and include phenomena such as giving away surplus for free, while others [e.g. 9] confine the sharing economy to transactions that do not entail change in ownership.

The sharing economy has impacted a number of service sectors. In one early demarcation, PwC [20] identified these sectors as: (a) automotive and transportation, (b) retail and consumer goods, (c) hospitality and dining and (d) media and entertainment. More recently [21], this account has been extended to encompass novel collaborative financial models as well as the sharing of competencies and work capacity.

The sharing economy has generated substantial research interest, with a range of theoretical studies addressing such topics as societal implications [e.g. 1], business models [e.g. 5], regulatory aspects [e.g. 4] and customer value [e.g. 16]. Additionally, a number of empirical studies have examined users' uptake and experiences of sharing economy services; on sharing economy services in general, such as Hamari, Sjöklint, and Ukkonen's [12] questionnaire-study of users motivation to use sharing economy services, and on highly detailed and specific topics within sharing economy services, such as Ert, Fleischer, and Megan's [8] study of the effect of personal photos on user trust in Airbnb classifieds.

2.2 Policy issues and recommendations for the sharing economy

Theorists see emerging sharing economy practices as part of a fundamentally novel approach to service provision [3]. The novelty is embodied in the emergence of platform owners as matchmaking middlemen, rather than as holders of large inventories, and by the new role of consumers as a source of supply.

The potential of the sharing economy is also acknowledged by governments. For example, the European Commission considers the sharing economy, which they refer to as the *collaborative economy*, to have "a significant potential to contribute to competitiveness and growth" [9, p. 2].

While the sharing economy hold promise of clear and significant benefits for individual consumers and society in terms of value creation and sustainability, potential negative side effects have amply been pointed out. This dual perspective is hardly surprising, given that the sharing economy is an emerging phenomenon with potentially swiping implications for commerce and service provision. Nonetheless, the concerns raised indicate a need for mitigating measures in the form of self-imposed control mechanisms among service providers along with adaptation and change in government policy and regulation.

For this purpose, Malhotra and Van Alstyne [16] suggested a range of improvements and control mechanisms which may be self-imposed by sharing economy service providers. Prominent examples include practices to protect individual consumers from risk, education of sharing consumers and strengthening of community self-regulation. Koopman, Mitchell and Thierer [15] similarly argued for the benefits of self-imposed policy change rather than policies imposed by government regulators, as the

latter are prone to capture by established players. Koopman et al. also suggested the need to relax existing regulations in order to level the playing field for new actors.

At the same time, the need for regulatory change, rather than the relaxing of regulation, has been widely argued, and actual regulatory action has been implemented at local municipality, regional and national levels. For example, the need to impose a system for fair taxation of sharing economy transactions is broadly acknowledged [9]. In consequence of regulatory disagreements, the share-ride company Uber has pulled out of multiple countries, and customers of the home-sharing company Airbnb have encountered local restrictions governing how and for how long they may make their home available for rent [13].

In response to an acknowledged need to support innovation, while at the same time protecting individual rights and welfare, there has been a call for smarter regulation of the sharing economy in popular [11] as well as academic [14] communications.

2.3 Sharing economy services as human-machine networks

In the networked society, people and the digital devices on which we depend are always on and always connected. At any time, any of us can access huge networks of fellow citizens and consumers as well as digital service platforms and automated intelligent agents. To understand sharing economy services from the perspective of both human users and the digital platforms that connect them, the present study adopts a *human-machine network* perspective [23].

Human-machine networks are an important enabler of current innovation and change, supporting outcomes and practices that would not be possible in human-only or machine-only networks. The networks of sharing economy consumers connected through digital platforms are prominent examples of human-machine networks. The sharing practices between strangers, spanning huge geographical distances, show how networked collaboration of human and machine actors can generate novel forms of value.

To support policy making on human-machine networks, and to support the development and design of such networks, the HUMANE project (https://humane2020.eu) produced a typology of human-machine networks as a framework for research and analysis [7]. In this framework, human-machine networks are analysed in terms of their *actors*, the *relations* between these, the network's *extent*, and the network's *structure*.

The actors in sharing economy networks include human consumers in supply and demand roles and digital platforms that support matchmaking and transactions [12]. The relationship between the human actors is characterised as one of trust between strangers, building on an underlying trust in digital platforms and the idea of sharing [2]. Sharing economy networks are typically extensive because of the beneficial network effects associated with size and to achieve sufficient volume of specific user groups [6]. Finally, the structure of sharing economy networks is characterised by platforms serving as central hubs that match supply and demand.

The present study applies the HUMANE framework to analyse the sharing economy in terms of human-machine networks, with in-depth analysis of network actors, relations, extent, and structure.

3 RESEARCH QUESTION

While a substantial body of knowledge discusses the sharing economy on the basis of theoretical considerations or user studies, there is a lack of research that address the service provider perspective. This is both surprising and problematic, as the service providers are key to the self-imposed changes in policy and practice that are recommended by service economy theorists. Furthermore, government policy makers will need adequate insight into the perspective of the sharing economy providers, to develop policies that serve to benefit both service providers, consumers, and society. To strengthen and guide the emerging sharing economy, government policy making clearly will benefit from taking into account the service provider perspective.

In this study, we aim to provide parts of this needed knowledge. The research question formulated for our study is:

Which are the key challenges and opportunities in current sharing economy services? And which implications for policy making do these hold?

To address this research question, we apply the HUMANE framework, and consider sharing economy services as human-machine networks. We see this framework as beneficial for our purpose, as it motivates analysis from the perspective of both the consumers and the digital platforms as actors in the sharing economy, with particular sensitivity to the relations between these actors.

4 METHOD

To gain in-depth insight into the sharing economy as a human-machine network, we conducted an interview study involving representatives of key players in the field, including sharing economy service providers and policy makers, as well as researchers with a particular interest in the sharing economy.

4.1 Study context

Although the study was undertaken as part of a European research and innovation project, we chose to concentrate on one country: Norway. This allowed us to pursue the research objective in greater depth, while avoiding the risk that local differences might skew the analysis. Like other Western countries, Norway has seen a surge in sharing economy initiatives; driven by large international players (notably Airbnb and Uber), by regional players (such as the Scandinavian ride-sharing company GoMore and Schibsted's online secondhand markets), and by a range of local entrepreneurs. A recent survey identified approximately 70 sharing economy service providers operating in Norway [19]. The country's total sharing economy revenue for 2015 was estimated at 0.02% of GDP, with an estimated yearly growth of 60% over the next 10 years [18].

While the Norwegian research context impose some restrictions on the general applicability of the findings, this limitation may also prove useful. Because Norway is a small and homogenous market, it is relatively easy to capture an overview of the current landscape. Mobile Internet penetration — a key enabler for a range of sharing economy services — is high, which means that findings from Norway may be indicative of near-future trends in countries with lower mobile Internet adoption. Additionally, Norway's relatively egalitarian social system may make it more feasible for government policy makers to adopt the perspective of sharing economy owners and vice versa, thereby strengthening our choice of approach to data collection and analysis.

4.2   Participants and recruiting

In total, we conducted 19 interviews: nine with *service owners* (representatives of sharing economy service providers), four with *policy makers* (representatives of government and NGO policy-making organisations) and six with *experts* (academic researchers who study the sharing economy). Two of the interviews involved two participants; the other 17 involved only single participants. The service owners represented companies from four different areas of the sharing economy: hospitality, transportation, consumer goods and sharing of work capacity.

Participants were recruited through direct contact. They were targeted as represented of salient organisations or because of their specialised knowledge of the field. None of the participants had any other involvement in the project or any affiliation with the authors' organisations.

4.3   Material, data, and analysis

The interviews followed a semi-structured approach. The interview guide covered the following topics.

- **Introduction:** On the current situation and the near future (2 – 5 years) for a specific sharing economy service (for service owners) or the sharing economy in general (for policymakers and experts); specifically, short-term aims, challenges, and needs for change.
- **Network actors:** On consumers and digital platforms as actors; specifically, consumer agency and digital platforms as data-driven and intelligent mediators .
- **Network relations:** On the relations between actors; specifically, social relations between consumers and relations between consumers and digital platforms.
- **Network extent**: On the extent of the network; specifically, current and envisioned number of users and geographical reach.
- **Network structure.** On the structure of the network; specifically, in terms of workflow interdependence and bottom-up versus top-down organisation.

The interview guides were modified slightly for each of the three participant categories. The interviews were conducted with the informed consent of the participants. All interviews were

recorded and transcribed. The transcripts were subsequently anonymised and the audio files were deleted. The data were subjected to thematic analysis [10] in which coding themes were developed and structured according to the analytical layers of the HUMANE framework. The coding themes were developed by the first author, who also coded the interview data. The other authors reviewed the coding themes and the final analysis.

5   RESULTS

The outcomes from the thematic analysis are structured according to the four analytical layers of the HUMANE framework: (a) actors, (b) relations, (c) network extent, and (d) network structure. For each layer, we present findings concerning challenges and goals as well as relevant policy implications.

For ease of overview, the identified challenges and goals for each of the analytical layers, along with the relevant policy implications, are summarised in Table 1.

5.1   Actors in the sharing economy

Typically, the actors in sharing economy transactions are non-professional consumers serving the supply and demand sides of the transaction. Additionally, the service provider's digital platforms serve as matchmaking middlemen. Because of space limitations, this section focuses only on challenges and goals pertaining to the human actors; specifically, to changing consumer behaviour. Relevant policy implications relate to simplified adherence to regulations in order to facilitate behaviour change.

5.1.1   Challenges and goals: Changing consumer behaviour

Motivating consumers and driving requisite behaviour change are well-known issues within the sharing economy. Sharing implies new ways of doing everyday tasks which, in turn, may require a certain level of motivation. Previous research has suggested that self-benefits such as financial gains and experiential aspects may be stronger motivators for taking up sharing economy services than, for example, perceived sustainability or environmental benefits [12, 17]. It has also been suggested that requisite behaviour change may be more easily achieved in the context of habit discontinuity, as for example during major life changes [24]. The interviews tended to confirm these notions. In particular, service owners argued for the pivotal role of motivation and behaviour change for a successful transition to sharing as a mainstream consumer choice.

Typically, at least in a country like Norway, one owns what one needs. And this is perhaps the greatest challenge, to make it ok for people to have their things rented out. [....] And that you want to own instead of rent. (Service owner #6, segment 16)

Table 1: Key challenges, goals, and policy implications for sharing economy services, identified through the analytical layers of the HUMANE framework.

Analytical layer	Challenges and goals	Policy implications
Actors	Change consumer behaviour. Strengthen consumer motivation.	Simplify adherence to regulation. Reduce uncertainty in terms of legal and regulatory aspects.
Relations	Build trust between strangers through strong ties with digital platforms.	Risk reduction, privacy, and security through policy development within and across sharing economy providers
Network extent	Large scale needed for quality matchmaking and profitability.	Regulatory change needed to counter winner-takes-all markets
Network structure	Efficiency and quality concerns due to non-professional consumers on both sides of the transactions.	Increase structure and reduce individual agency through policies and ways of work within and across sharing economy providers.

Service owners argued for the primacy of financial gain and convenience as motives for starting to use sharing economy services. However, they also argued that experiential aspects, and to some extent sustainability perceptions, may serve as motivators; especially, in keeping users engaged over time.

We find that although people start using us for the low price, they stay on [as customers] for the experience. (Service owner #4, segment 6)

5.1.2 Implications for policy making: Simplify adherence to regulation

The need to strengthen consumer motivation and change consumer behaviour has implications for policy making. Some service owners, as well as experts and policy makers, referred to the need to adapt regulation to emerging sharing economy services, making it easier for consumers to understand and comply when engaging with sharing economy services.

As of now, the legality of some sharing economy services remains unclear to users. It may also be difficult for users to establish whether their sharing behaviour aligns with current regulations. For example, some participants reflected on how consumers in need of transportation may be discouraged from using sharing economy services, as these can be perceived as operating in a legal grey zone. Participants also mentioned that consumers may lack requisite knowledge of legal boundaries for hospitality services and services concerning sharing of idle work capacity.

It can be scary to change behaviour if you are uncertain whether it accords with current rules and regulations. This is a major challenge. (Service owner #9, segment 11)

The need for simplified adherence to regulations indicates a need for government policy making as well as for changes in service providers' policies. Participants argued that governments have a responsibility to adapt regulation to the changing landscape of service provision. However, it was also noted that there is an obligation for service providers to support consumers in adhering to regulation — for example, by offering solutions for simplified tax reporting and payment.

I believe that most people who are renting out want to pay their due taxes, and to do things right. But at present, this is just difficult and annoying to do. (Expert #4, segment 91)

5.2 Relations in the sharing economy

The sharing economy depends on relations: between consumers using services, and between consumers and the service providers' digital platforms. In this section, we detail challenges and goals for exchanges between strangers in sharing economy services along with the need to build close relations between consumers and platforms. Key policy implications concern privacy and security.

5.2.1 Challenges and goals: Trust between strangers requires close ties to digital platforms

While sharing behaviour has historically depended on strong social ties between the people involved, the internet has prompted sharing among strangers. In fact, sharing behaviours supported by the digital platforms of sharing economy service providers typically assume that those engaging in sharing transactions do not know each other beforehand.

Consequently, trust between strangers has been a prevalent topic in the sharing economy literature. Botsman [2] characterises trust in the sharing economy as layered; that is, the trust between strangers engaged in sharing relations rests on their trust in the platform. The design of the platform, such as providing a social recommendation system or giving users the opportunity to promote personal photos, may affect trust levels in these relations [8]. Furthermore, to build trust, the platforms need to mitigate the risks that sharing consumers are exposed to, such as fraud or damage to property [16].

The interviewed participants typically described sharing economy transactions as meetings between strangers. This was not necessarily seen as problematic but rather as an opportunity.

Several participants emphasised the experiential value associated with such meetings between strangers, as for example in the case of mobility and hospitality services. Furthermore, this experiential dimension was seen as potentially trust-building. Some participants also argued that sharing transactions between strangers may strengthen the validity of the digital platforms' social recommendation systems, as one is more likely to provide an unbiased assessment of a stranger than of a friend.

Most of the service owners reported not to prioritise the building of long-term relations between individual consumers. Rather, they considered it important to strengthen the relation between the individual consumer and the platform.

> *To some extent, social networks and -ties work against convenience [...] We should mostly work with convenience on demand rather than bringing our users close together.* (Service owner #9, segment 99)

At the same time, there was strong emphasis on the need for the platforms to serve as trusted parties.

> *What we have found is that trust in the platform [...] is extremely important to consumers* (Expert #2, segment 79)

In line with Botsman's [2] concept of layered trust, building strong and trusting relations between the individual consumers and the platform was reported as a key challenge and goal, along with the consequent need to facilitate temporary trust relations between strangers.

5.2.2   Implications for policy making: Risk reduction, privacy, and security

The need to develop trust in the digital platforms of the sharing economy has multiple policy implications. As argued by Malhotra and Van Alstyne [16], service owners need to mitigate consumer risk. This view is echoed in the interviews, as in the following quote.

> *The first thing everyone asks about when I tell them about the service is "What happens when something goes wrong"?* (Service owner #5, segment 4)

A number of mechanisms to strengthen consumer trust in the digital platforms were discussed in the interviews; the most prominent being:

- **Social recommendation** — that is, reliable systems for users' ratings of each other (e.g. star ratings and written feedback from both lender and owner).
- **Insurance** — that is, systems for replacement or compensation in case of mishap or accident, brokered through the sharing platform (seen as a potential new market for insurers).
- **Traceability of transactions** — that is, systems for tracking service processes and key aspects of the transaction (e.g. tracking an Uber car, documenting a rental agreement).

It was argued that policies, as well as processes and systems, for managing users' privacy and security are critical to develop consumer trust in the digital platforms. The importance of privacy was accentuated in relation to, among other things, the value of consumer data for making predictions in the digital platforms. The platforms' gathering and utilising of large data volumes may enable better matchmaking between supply and demand but also imply important privacy challenges. Participants also noted that matchmaking among strangers on digital platforms entails important security issues, for example in terms of fraud mitigation, contract provision and money transfer.

The participants contended that policies to build and maintain consumer trust is mainly the responsibility of sharing economy service providers. It was argued that service providers need to strengthen policies for risk reduction, e.g. through insurance offerings, and for security, e.g. by policing digital platforms using automatic and manual fraud-detection and by providing support for contracts and payment transfer. However, in some areas, trust in sharing economy services was also held to be affected by government policy. For example, the new European general data protection regulation have important implications for privacy in sharing economy platforms, e.g. concerning data use and informed consent.

5.3 The extent of sharing economy networks

In the HUMANE framework, the extent of a human-machine network refers to its scale in terms of users and geographical reach. Sharing economy services typically see large scale as a key goal and an important policy making challenge relates to countering the negative effects of a winner-takes-all market.

5.3.1   Challenges and goals: The need for large scale

Well-known sharing economy service providers, such as Airbnb and Uber, are large, international players. However, the typical sharing economy service provider is a small start-up company with an acute need to expand its user base and an earnest hope of possible future revenue growth. The Norwegian market alone has about 70 sharing economy service providers [19], and the situation is similar in other European countries [21]. Clearly, then, service providers struggle for survival in the emerging sharing economy market.

But what does it take to survive? In the interviews, the participants typically identified large scale as critical for revenue growth. As each transaction on a sharing economy platform typically generates little revenue for the service owner, large volumes are needed.

> *There is not much money in a single transaction. So, part of our DNA, — for the persons working here, but also to survive — is a need to grow. We need to be big. All we do must be logical at a large scale* (Service owner #2, segment 26)

Furthermore, given the heterogeneity of the products and services on offer in sharing economy platforms, a large supply base is needed. Moreover, a large demand base is needed to match the supply base. And the quality of the matchmaking in the digital platforms depends on large volumes of transaction data. As one of the interviewed participants stated,

The more data you have [...] the more relevant offerings you can make. Which in turn will give a better user experience (Service owner #8, segment 42)

5.3.2 Implications for policy making: Counter a winner-takes-all market

The need for large scale to survive as a sharing economy service provider entails a policy making dilemma. To drive innovation, it is necessary to encourage the small start-up service providers in order to drive innovation. On the other hand, given the benefits of large scale, the successful players in the sharing economy are likely to be large, international companies.

One possible exit from this dilemma, as discussed by some of the participants, is that new market niches may open to support new sharing economy providers. That is, while established large players dominate certain areas of the sharing economy, as in parts of hospitality and mobility services, opportunities for new forms of sharing economy services can be exploited by newcomers.

There will likely be a consolidation [...] among sharing economy players. At the same time, new types of sharing economy services may appear. (Policy maker #1, segment 33)

Nevertheless, regulatory action may be needed to counter the movement towards winner-takes-all markets. This may be especially relevant for relatively small national markets —such as that of Norway — but also for other national markets in Europe, which are inevitably small as compared, for example, to the United States. In the future, start-up service providers in the sharing economy may be even more challenged than today. For that reason, some participants argued the need to develop policies and regulation to make the future sharing economy market friendlier for newcomer service providers.

It is a challenge when large multinational companies with a base in the US, that have developed in a huge inner market, launch in Norway. [...] If we were able to establish a [European] digital single market with common regulation and common standards, so that one could grow in an inner market. Then we would have the muscle to meet the competition. (Policy maker #3, segment 101)

5.4 The structure of sharing economy networks

According to the HUMANE framework, the structure of sharing economy services concerns workflow interdependence and network organisation. Workflow interdependence refers to the degree to which goal achievement within the network depends on the synchronised action of multiple actors. Network organisation relates mainly to the bottom-up and self-organised versus top-down and centralised character of the network.

5.4.1 Challenges and goals: Efficiency and quality concerns

Sharing economy services are populated by non-professional consumers, also on the supply side [3]. This implies an important challenge for the efficiency and quality of transactions. Consumers on the supply side cannot be expected to attain the same high level of quality as professionally trained service providers. As a consequence, consumers on the demand side may adopt a more cautious approach to sharing economy transactions than in other types of service transactions, as they know that the other party is non-professional.

There is a certain overhead associated with the transactions; you need to negotiate and reach agreements. [...] In some cases we need to go through the dialogue history between parties, for example due to complaints [...] In extreme cases there can be 200 messages back and forth. (Service owner #1, segment 14)

In consequence, the interviewed service owners typically voiced a need for more efficient interaction between their users. This because they acknowledged that for most consumers the important thing is to get the transaction done conveniently and easily.

The demand side does not really care who provides the service, as long as it is done. [...] Previously, we have been very open to having people find out for themselves how to do the transaction, but we now see that this is not always the best way to do it. (Service owner #4, segment 25)

5.4.2 Policy implications: Centralised structure and more standardised processes

Given the emerging insight that sharing economy services must achieve a certain level of quality, efficiency and predictability, service owners move increasingly towards more standardised processes. This, in turn, serves to strengthen the centralised structure of sharing economy services; the digital platforms are gradually becoming hubs for all aspects of sharing transactions, not just the matchmaking.

Initiatives to standardise the sharing economy service processes commonly take the form of policy-making efforts within and across service providers. These include policies regulating how contact can be made between users of sharing economy services, how payments should be made, insurance requirements and so on.

Service owners may also establish more or less formal policies governing how to establish and maintain the required service level within their user base — for example, by formalising the provision of quality-oriented information as part of user onboarding, or routines for campaigns to advise users how to meet other users on the platform.

Our greatest challenge is that we have two actors, the owner and the lender, who are two private persons we cannot control. [...] Therefore we spend a lot of time training our users, giving them a heads-up, on how we want them to use our service. (Service owner #5, segment 75).

Standardising service processes is likely to mean that sharing economy services develop to resemble something like the services provided by e-commerce companies, where detailed support is provided in all phases of a transaction. However, given the nature of two-sided markets, where non-professionals represent both supply and demand, sharing economy services are unlikely to achieve the same level of standardisation as in regular e-commerce.

6. DISCUSSION

The sharing economy is seen as having great potential for value creation. To realise this potential, a range of challenges must be mitigated. Policy change may be key to overcoming some of these challenges. Such change can be seen as partly the responsibility of sharing economy service providers and partly as something that needs to be implemented through changes in government regulation.

There exist a body of literature relevant to policy making in the sharing economy. However, this literature often adopts the perspective of consumers, communities, or government. In the present study, we have considered the perspective of sharing economy service providers. Specifically, we have applied the HUMANE framework to study sharing economy services as networks for synergetic interaction between consumers and digital platforms.

In this final section, we will first discuss the findings across the analytical layers of the HUMANE framework, summarising key policy implications. We will then consider the lessons learnt from applying this framework. Finally, we will discuss the study's limitations and possible future work.

6.1 Key policy implications

6.1.1 Policy implications reflecting early-phase challenges

The interview participants highlighted a number of challenges and goals, as well as related policy implications. Unsurprisingly, many of the identified challenges and goals reflect the fact that the sharing economy is in its early phases and relate to issues that need to be mitigated if the sharing economy is to develop and mature. The challenge of changing consumer behaviour, the challenge of strengthening the relationship between consumers and sharing economy platforms, and the challenge of improved efficiency and quality: all are issues that may potentially impede — or unlock — future growth.

Some of these early-phase challenges have implications for government policy making. Changing consumer behaviour requires motivation, which can be derived, at least in part, from changes in government regulation. In particular, the unclear legal status of some sharing economy services, along with the complexity of regulations governing service provision, may demotivate non-professional consumers who might otherwise take on a supply or demand role in the sharing economy. These implications for government policy making echo current calls to adapt regulation to the characteristics of the evolving sharing economy [e.g. 11, 14].

At the same time, the interview participants pointed out that much of the responsibility for the requisite policy change lies on the sharing economy service providers. For example, strengthening trust between consumers and sharing economy platforms was seen mainly as a matter of policy change within the service providers themselves. In this regard, the interview participants stressed the need for service providers to take increasing responsibility for security, privacy and risk reduction as the sharing economy market matures. It was argued that service providers can no longer consider themselves only as matchmaking middlemen; they must also provide their users with risk reduction, for example through insurance services, and security, for example through vigilant policing of the sharing economy platforms. For that reason, policy making within and across sharing economy service providers must encompass a broader range responsibilities than what was considered necessary in the earliest phases of the sharing economy.

Interestingly, another area in need of policy change, according to service owner representatives, is the quality of service processes. Some of the interview participants noted that, in the early phases of development, sharing economy service providers might leave it to the consumers to figure out important aspects of the sharing transactions — such as how to pay for a shared goods or how to share responsibility in case of damage or accidents. Among more mature service providers, however, there is increasing awareness of the need to strengthen process support to make the service level more predictable. This policy change is not driven by changes in government regulation, but by an acknowledgement among service providers that such strengthening of service process quality is necessary to achieve the level of convenience demanded by mainstream consumers.

The central role of sharing economy providers in driving and implementing requisite policy change aligns with Malhotra and Van Alstyne's [16], as well as Koopman et al.'s [15], arguments that service providers are better placed to correctly identify and implement policy as needed.

6.1.2 Policy change needed to sustain innovation and change

Not all of the policy implications referred to in the interviews related to early-phase challenges in the sharing economy. Service providers, policy makers and experts voiced concern that certain areas of the sharing economy may become winner-takes-all markets because of the advantages of large size, such as increased coverage, improved prediction capabilities and sufficient volume for platform profitability. However, as noted in some of the interviews, incentives for innovation and change may suffer in such markets.

For that reason, policy change may be needed to curb the trend towards winner-takes-all markets and to establish a market context that is more favourable for small, innovative providers. This responsibility may, in particular, rest on local or regional policy makers, as emerging sharing economy service providers typically cover a limited geographical area in their initial phases.

6.1.3 Who should drive policy change in the sharing economy?

Policy change in the sharing economy may come about through self-imposed measures by the actors of the sharing economy themselves, or through government regulation. While some theorists argue the need for policy change driven by the actors of the sharing economy themselves [15, 16], there is an abundance of examples of how government regulation has been used to drive policy change in the sharing economy [9, 13].

Our findings suggests that there hardly is a clear-cut answer to the question of who should drive policy change in the sharing economy. As pointed out by all three participant categories in the interviews, much of the policy change required to build and sustain trusted and high-quality services depends on self-imposed measures by the actors of the sector. However, for some fields of interest, the participants argued the need for government regulatory change. For example, to facilitate adherence to regulation and reduce users' uncertainty regarding the legal status of services. Such change could, of course imply a loosening up of regulation, but it could also imply new requirements for example in terms of transparency and reporting from service owners to local government, e.g. for purposes of taxation.

In summary, there seems to be a need for policy change driven through dialogue between government policy makers and sharing economy service providers. That is, policy change achieved through interaction and understanding across regulators and service providers. There has been a call for smarter regulation of the sharing economy [11, 14], something which clearly will benefit from such cross-sectorial understanding and dialogue.

6.2 Lessons learnt from applying the HUMANE framework

To investigate sharing economy services in this study, we applied a framework from the study of human-machine networks. In this framework, both humans and machines are seen as actors, and the potential synergies between these actors are seen as having particular interest [23]. This framework is arguably well suited for the analysis of sharing economy services.

Applied to the interview study, the human-machine network perspective yielded a relevant and interesting range of challenges, goals, and policy implications. Furthermore, the analytical layers of network actors and their relations, as well as network extent and structure, provided a useful structure for data collection and analysis.

One important benefit of the framework was the identification of contrasting characteristics and needs, as for example the contrast between the typically non-existing social relations between the sharing economy service users, and the strong relation sought between the user and the sharing economy platform.

That said, the framework was also limited because of its relatively high level of abstraction. For that reason, the identification and follow-up on interesting details was largely left to the analyst.

6.3 Limitations and future work

The study reported here contributes new knowledge about the challenges, goals and policy implications of sharing economy services. In particular, the findings strengthen our knowledge on the perspective of sharing economy service providers.

The study is limited in two respects. First, because it was conducted in one country, the generality of the findings remains open to question. While again acknowledging the benefits of the study context, the generality of the findings may depend on the degree of similarity between the Norwegian context and the region to which the findings are to be extended. Second, as this is exclusively an interview study, the basis of our contribution is our participants' reports. No data were gathered from other sources, although we made sure to discuss our findings within the explicit confines of the relevant theory.

To further expand the knowledge base for policy making in relation to the sharing economy, future work should include empirical studies addressing the service provider perspective in other regional contexts. To further enrich our knowledge of the service provider perspective, it would also be useful for future studies to integrate multiple data sources.

Furthermore, while we in this study have not considered potential differences between sharing economy sectors, this could be an interesting topic for future research. In sectors as diverse as automotive and transportation on the one hand and hospitality and dining on the other, there will likely be differences in service providers' perceived policy needs. We look forward to future work shedding light on this.

The sharing economy still is in its relative infancy, and much work remains for it to mature. Continued research is needed on how users, service owners, and policy makers perceive sharing economy services. We hope that the presented study advances one further step on this important journey.

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