

KIMMO SULONEN

Improving Efficiency of Public Cadastral Procedures through Customer-orientation

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through Customer-orientation

ACADEMIC DISSERTATION

To be presented, with the permission of
the Faculty of Built Environment
of Tampere University,

for public discussion in the auditorium RG202
of the Rakennustalo, Korkeakoulunkatu 5, 33720, Tampere,
on 19.11.2020, at 12 o'clock.

ACADEMIC DISSERTATION
Tampere University, Faculty of Built Environment
Finland

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Cover design: Roihu Inc.

ISBN 978-952-03-1746-1 (print)
ISBN 978-952-03-1747-8 (pdf)
ISSN 2489-9860 (print)
ISSN 2490-0028 (pdf)
<http://urn.fi/URN:ISBN:978-952-03-1747-8>

PunaMusta Oy – Yliopistopaino
Vantaa 2020

ACKNOWLEDGEMENTS

The overall research process has been multi-stage and has experienced twists and turns along the way. The story of this research work began from a spark of interest to benefit scientific and practical developments within build environment. I began the studies at Aalto University and continued through various life situations, relocations and development projects at the University of Tampere. During this time, a lot has been achieved, great colleagues and associates have been found and new ideas emerged on how to improve the world around. Thereby, I have many to thank for contributing to this dissertation.

I'm grateful for the supervisors of my work, industry professor Ari Ahonen and D.Sc. Jukka Puhto from the University of Tampere for his inspiring and encouraging comments as well as my previous supervisors, Emeritus Arvo Vitikainen, D.Sc. Juhana Hiironen and prof. Kirsikka Riekkinen from Aalto University for considerable encouragement and assistance in various stages of my work. Special thanks, in encouraging to begin the dissertation process and helping to overcome the small and big challenges that came along, belongs to D.Sc. Seija Kotilainen, who co-authored the articles, and guided my work. She also reminded me of the importance of customer orientation.

I would also like to thank the pre-examiners of my work, D.Sc. Kimmo Kurunmäki and D.Sc. Matti Kuronen, who gave valuable comments to improve and finalise this thesis, as well as D.Sc. Eero Valtonen for agreeing to act as my opposition to the dissertation.

Also, I'd like to express thanks to colleagues and special academics from for instance the Netherlands, Germany, France, Baltic states, Cyprus who have greatly helped by participating in the study and by reading and commenting on the publications.

Special thanks to the National Land Survey of Finland and especially those who participated in the control group at the beginning of the study, such as Timo Potka

and his land consolidation surveyors from whom I've had received material and encouragement whenever needed.

In addition, I would also like to thank my former and current colleagues, especially in the cities of Tampere and Hämeenlinna, for supporting the practical development projects providing essential material for the study.

Family members and relatives as well as friends have been an important source in supporting my work from the beginning to the end. Especially thanks to my mother, sister, and wife as well as honorary thanks to young son Aleksanteri Sulonen.

Yet, there are still people I'd like to thank, your help has been essential even in the smallest quantities or simply encouraging and motivating me when I needed it, so Thank you all.

In Tampere 1.10.2020

Kimmo Sulonen

ABSTRACT

The emerging challenge in the public sector in most European countries is to offer services matching the needs of the users of the services and their expectations with fewer resources, for instance due to reduced tax revenues and manpower. To overcome this challenge, new approaches in the development of public services are required.

This dissertation presents approaches that aim to improve a public cadastral procedure on the principle of including customer-orientation into a public process. It also describes how the improvement affects process efficiency. The research focuses on public cadastral procedures by utilising Finnish cadastral procedures as case examples and comparing them to international practices. The studied cases include land consolidation and subdivision procedures applied to both rural and urban areas.

The approaches are studied in multiple cases through abductive reasoning. The study is constructed on a juridical and a customer-orientation framework, where the former is based on legal research and the latter on models of customer-orientation in the public sector. The investigation includes comparison of international public cadastral procedures, especially land consolidation, methods implemented in the procedures, like voluntary participation, and the status of land lessors. To gather empirical data, participants in the aforementioned processes and experienced academics and specialists who have expertise in such processes were interviewed in a structured and a semi-structured way.

The dissertation contributes to the field of public land administration (cadastral) procedures as a public service and its aim of responding efficiently to citizens' needs. This research provides novel insights into how to enhance customer-orientation in public cadastral procedures by adapting different approaches, for instance voluntary, co-operative, and co-creative, in procedures. The study suggests that re-evaluating the ways of working is an important factor alongside the national development of, for instance, reforming legislation and advancing digitalisation to gain a relevant impact on the efficiency of the public sector.

TIIVISTELMÄ

Useimmissa Euroopan maissa julkisen sektorin haasteena on tarjota palveluita käyttäjien tarpeiden ja odotusten mukaan samalla kun resurssit vähenevät muun muassa vähentyneiden verotulojen ja saatavilla olevan työvoiman vuoksi. Tällaiset suuntauksat vaativat uudenlaisia lähestymistapoja palveluiden kehittämisessä.

Tämä väitöskirja esittelee lähestymistapoja, joilla pyritään parantamaan julkisia prosesseja sisällyttämällä asiakaslähtöisyyden periaatteita julkisiin prosesseihin. Tutkimus tuo esille myös sen, kuinka parannus vaikuttaa prosessien tehokkuuteen. Työssä keskitytään julkiseen kiinteistönmuodostamisprosessiin, sekä hyödynnetään Suomessa toteutettuja kokeellisia prosesseja tapausesimerkkeinä vertaillen niitä kansainvälisiin käytäntöihin. Tutkitut kokeelliset kehittämisprosessit käsittävät tilusjärjestely- ja lohkomisprosessit maaseudun ja kaupunkialueiden maankäytön osana.

Edellä mainittuja lähestymistapoja selvitetään useissa tapauskohteissa monimenetelmätutkimuksella. Tutkimus rakentuu oikeudellisiin ja asiakaslähtöisiin puitteisiin, joissa ensimmäinen perustuu juridiseen tutkimukseen ja jälkimmäinen julkisen sektorin asiakaslähtöisyyden malleihin. Selvitys sisältää vertailua kansainvälisistä kiinteistötoimituksista, erityisesti tilusjärjestelyistä, menetelmiä, joita on käytetty näissä toimituksissa kuten vapaaehtoista osallistumista sekä vuokranantajan aseman selvittämistä. Empiirisen tiedon keräämiseksi käytettiin strukturoituja ja puolistrukturoituja haastatteluja asianosaisille, jotka ovat olleet mukana edellä mainituissa prosesseissa ja asiantuntijoille, jotka ovat olleet mukana näiden prosessien kehittämisessä tai muuten tunsivat kokonaisuuden.

Väitöskirjan tutkimus kohdistuu kiinteistönmuodostamiseen julkisena prosessina, joka pyrkii vastaamaan tehokkaasti sen asiakkaiden tarpeisiin. Tutkimus tarjoaa uusia näkemyksiä siitä, miten voidaan parantaa asiakaslähtöisyyttä julkisissa prosesseissa soveltaen erilaisia lähestymistapoja, esimerkiksi vapaaehtoisuutta sekä yhdessä tekemisen ja yhteistyön menettelymalleja. Tutkimus esittää, että toimintatapojen uudelleenarviointi on tärkeä tekijä kansallisten kehityshankkeiden kuten lainsäädännön muutosten ja digitalisoinnin edistämisen ohella, jotta saadaan aikaan merkittäviä vaikutuksia julkisen sektorin tehokkuuteen.

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ORIGINAL PUBLICATIONS

Publication I Sulonen, Kimmo; Kotilainen, Seija. Lessor's Status in Land Consolidation in Finland - Nordic Journal of Surveying and Real Estate Research. Vol 11 / 2016. Published. 8.2.2016.

Available at: <https://journal.fi/njs/article/view/49390>

Publication II Sulonen, Kimmo; Kotilainen, Seija. Lessor's status in land consolidation in Europe – Reports from Cyprus, Finland, France, Germany, the Netherlands, Latvia and Estonia - Baltic Journal of Real Estate Economics and Construction Management. Vol.3, 2015, pp.56-71. ISSN 2255-9604. e-ISSN 2255-9671. Published: 05.3.2016.

Available at: <https://doi.org/10.1515/bjreecm-2015-0007>

Publication III Sulonen, Kimmo; Kotilainen, Seija; Hiironen, Juhana. Voluntary land consolidation approaches and their adaptability to experimental farm-based land consolidation in Finland - Nordic Journal of Surveying and Real Estate Research. Published: 2.3.2018.

Available at: <https://journal.fi/njs/article/view/65401>

Publication IV Sulonen, Kimmo; Kotilainen, Seija; Riekkinen, Kirsikka. Customer-oriented approach in cadastral procedures – case study from Finland- Land Use Policy, 90. ISSN: 0264-8377. Published 1.1.2020

Available at: <https://doi.org/10.1016/j.landusepol.2019.104209>

Author's Contribution: The author was responsible for initiating, executing and writing all publications and collection of the research data. The co-authors provided comments, advice and suggestions for them.

1 INTRODUCTION

1.1 A need for customer-orientation in public processes

There has been an ongoing discussion on the effectiveness and cost-efficiency of public administration. For instance, across the European continent public sector services lag behind the needs of modern citizens and businesses. Since the role of the public sector is to catalyse innovation for the wider economy, there is an urgent need to power innovation within the public sector itself to achieve radical productivity improvements and efficiency gains, for instance by providing new ideas about creating value for society (Bason et al. 2013).

The recognised challenge is to maintain a dynamic public sector actualised in offering public services more in line with the needs of their users with fewer resources, for instance due to reduced tax revenues and manpower (Andreassen 1994). Leuenberger (2006) further describes efficiency, customer satisfaction, time and resources as key components in achieving sustainability in public administration. As, for example, Muggenhuber (2006) argues, increasing economic pressure demands focusing the public sector's attention more on citizens' interests, promoting a customer-orientation comparable to the private sector.

The public sector may encounter different challenges in comparison to the private sector in meeting the needs of customers and aiming for fairness, justice and transparency, possibly even leading to increased political inequality (Chen et al. 2004; Fountain 2001). The challenge of defining the customer in the public sector is not self-explanatory (Sulonen et al. 2020). However, improving customer-orientation and customer satisfaction has been recognised as a critical success factor for successful organisations. If achieved, the reorganisation of activities or the need for privatisation will be reduced (Andreassen 1994; Todorovski & Lemmen 2007).

Andreassen (1994) suggests that, in order to offer high utility, the public sector must be more market-oriented, for example capable of offering more differentiated services (Andreassen 1994). He further suggests that a major challenge in this strategy is the public sector's long-established practice of giving one homogeneous offer to all users. Mansberger et al. (2012) describes that in many European countries new public management and impact-oriented approaches were introduced to improve the quality of governance leading to changes, for instance, towards efficient, customer- and business-orientated processes. Generally, a public organisation faces challenges in keeping its principles in line with

offering differentiated services based on citizens' needs, while balancing necessary efficiency needs or even focusing on sustainable use of resources.

1.2 Research background

The efficiency of public processes, e.g. city planning, real estate formation and building permits, are a constant issue in Finland as well as the reform of the land use and building legislation to respond to challenges such as economic difficulties of municipalities, changing needs of citizens or environmental issues. (see e.g. Ahonen 2017; Mäntysalo 1999; Riekkinen 2016; YM014:00/2018). The significance of efficient land and property management is great, since the built environment in Finland accounts for more than 70% of the national wealth (see. RAKLI 2014).

The reform of the Finnish Land Use and Construction Act (132/1999) by the Ministry of Environment is based on the need to respond to future challenges posed by the changing operating environment, for instance, regarding climate and energy issues, urbanisation and digitalisation. In addition, the aim is to simplify and clarify the land use planning and building control systems as well as decision-making and implementation tasks in accordance with the aforementioned Act. The reform was initiated in 2018 and is planned to be implemented in 2022. (YM014:00/2018). In this sense, the simplification and clarification of Real Estate Formation processes and legislation are equally at hand as part of overall land use processes in urban areas (See e.g Riekkinen 2016; Krigsholm 2020).

In addition to the reform of the land use and building legislation, the future of the Finnish cadastral system and the cadastre itself are under discussion. The socio-cultural environment of the (Finnish) cadastral system has become more customer-oriented, for example in how the changing uses of cadastral information affect the dynamism of administration (see e.g. Riekkinen et al. 2016 & Krigsholm et al. 2018). The cadastral system and its maintenance are key to the economic functioning of society. The system is facilitated by public administration in most countries where the maintenance of the system by altering rights, restrictions and responsibilities is conducted through cadastral procedures (see Niukkanen 2014). Innovation requires resources and often meets resistance, however, during the last century the land administration authorities have had a significant role as enablers of innovations as managers of the land as a strategic resource (Muggenhuber 2011).

In response to the challenges for the public sector in finding methods for more customer-oriented and efficient public services, alternative approaches are being studied and tested, for instance in public cadastral procedures in the Netherlands, Central and Eastern Europe and Finland. These cadastral procedures include a participatory voluntary approach in the Netherlands (see e.g. Louwsma et al. 2014; Beunen & Louwsma 2016), agreement-based/integrated approaches in Denmark and Central and Eastern Europe (see

e.g. Hartvigsen 2015; Haldrup 2015), farm-based voluntary approaches in Finland (see Sulonen et al. 2017; Potka 2016), and a subdivision procedure in urban areas conducted by municipalities in Finland (see Sulonen et al. 2020).

Particularly in the Netherlands, a participatory voluntary approach is employed in the land consolidation process, which involves strong co-operative and co-creative elements between authorities and participants (see Louwsma et al. 2014; Beunen & Louwsma 2016). As for differentiated needs, the focus of land consolidation has shifted from the restructuring of agriculture toward achieving a more efficient multiple use of rural space and increasing priorities in the awareness of environmental conditions. In a rural development context, the concept of land consolidation has become broader to include, for instance, environmental awareness (Varga & Bazik 2013).

Improving public processes from a customer perspective is a challenging topic, as Chen et al. (2004) and Fountain (2001) indicate. The definition of ‘a customer’ itself is not self-explanatory in public services and requires further specification, since the public sector may have different kinds of customers, such as applicants and other parties. Van der Molen (2002) addresses the issue that cadastral systems generally have a long tradition where they have been improved and perfected, however accumulating a certain heaviness, and often the performance has not kept up with customers’ needs. To cope with customers’ needs, organisations responsible for the cadastre are trying to identify those needs and how to meet them (Van der Molen, 2003). To better understand how the public cadastral procedures reflect on modern customer needs, the statuses of participant groups of public cadastral procedures and their needs in contrast to public organisations’ principles have to be identified.

1.3 Research objective and research questions

The improvement of service quality and the performance of public processes are being studied, for example, from the perspectives of public agencies involved in health care, education, security and social welfare, in response to increasing customer demands (Chen 2005). In responding to customer demands, however, public cadastral procedures are not often considered. However, there have been discussions on reforming the cadastre with customer-oriented principles (e.g. Steudler 2002; Markkula 2006; Riekkinen et al. 2016).

This dissertation contributes to the field of public land administration in its efforts to improve public cadastral procedures and enhance customer-orientation and efficiency in them. The research aims to fill the research gap by showing how the public sector can improve the efficiency of processes with the principle of including customer-orientation into the processes.

Since the public sector's challenges in land administration apply in Finland as in Europe, the research operates from a Finnish context, providing a comparison with international practises. The research cases focus on the public cadastral procedures of land consolidation and subdivision applied to rural and urban areas. The cadastral procedures were selected for this research since there were experimental and development processes available for examination that followed the international trend of improving voluntary participation, customer-orientation and efficiency. Additionally, such processes can be studied separately.

The aim of the research is to increase understanding of how to improve customer-orientation in public cadastral procedures and how it affects those processes. The research problem is formulated into the following research questions:

RQ1: What is the lessor's status in land consolidation in the Finnish and in European contexts and how can the lessor's needs be better taken into account in the process?

RQ2: What kind of benefits can international voluntary land consolidation approaches enable for public cadastral procedures and their participants in a Finnish context, if applied?

RQ3: What kind of benefits can customer-orientation provide for public cadastral procedures and their participants?

RQ4: How does the adaptation of customer-oriented methods affect efficiency in public cadastral processes?

RQ1 provides the perceptions and needs of land lessors as a specific customer group. This is studied by examining land consolidation from the lessor's point of view and finding possibilities to improve the process so that it becomes more attractive to the lessor. In this manner, the RQ aims to find possibilities to respond to a specific customer's needs.

RQ2 provides insights into methods employed in international voluntary based land consolidation processes and their adaptability in the Finnish context as a set of tools for responding to customer needs. The voluntary aspect is reflected through two land consolidation models implemented abroad and an experimental land consolidation process in Finland.

RQ3 provides information and background of the benefits of a more streamlined public cadastral procedure on the principle of including customer-orientation in public processes. The customer-oriented approach is studied by analysing two cadastral procedures, traditional and experimental subdivision in urban areas.

RQ4 provides insights into how the adaptation of customer-orientation affects process efficiency and its practical benefits.

Research questions 1–3 study the research objective from multiple viewpoints. The first question mainly focuses on the status of groups of participants and how to improve the process based on their needs. The second question focuses on how to provide tools for improving adaptable methods to use in land consolidation to better respond to participants'

needs, following the field testing of the experimental farm-based procedure. The third question introduces the customer-oriented concept and model for the public sector and evaluates the benefits of the approach if applied in the public cadastral procedure, following the field testing of the experimental subdivision procedure.

Since public sectors struggle with maintaining dynamic services in line with citizens' needs, RQ4 aims to establish how the adaptation of customer-orientation in public cadastral procedures affects process efficiency. The results are reflected on process duration and structural efficiency in the public sector's viewpoint in these cases.

Generally, the research questions provide viewpoints of how to respond to customers' needs in public cadastral processes and what kind of effects or benefits they provide for a public organisation hosting the cadastral procedure and its customers. The research viewpoints are listed in Table 1. explaining the relation of each publication with the overall framework of the thesis.

Table 1. Research viewpoints

Studied research question	Viewpoint in overall thesis context
RQ1 (Publication I), Lessor's status in land consolidation (national)	<i>Explains the perceptions and needs of land lessors as a specific customer group.</i>
RQ1 (Publication II), Lessor's status in land consolidation (international)	<i>Explains the perceptions and needs of land lessors as a specific customer group.</i>
RQ2 (Publication III), Aspects of adaptation of a voluntary approach and its effects on public cadastral procedures and its participants	<i>Comparison and adaptability of a set of methods in voluntary land consolidations as tools for responding to the customer needs and contributing towards a customer-oriented approach</i>
RQ3 (Publication IV), Benefits of adaptation of customer-orientation its effects on public cadastral procedures and their participants	<i>Inspection of the usability of customer-orientation in public cadastral procedures and its benefits to the public organisation hosting the cadastral procedures.</i>
RQ4 (all publications), Effects of adaption of customer-oriented methods on the efficiency of experimental public cadastral procedure cases	<i>Analysis of how customer-orientation and methods improving customer-orientation, e.g. the voluntary approach, affects the efficiency of cadastral procedures for both the customer and the public organisation hosting the process.</i>

1.4 Structure of the thesis

The content of this dissertation has been adapted over the iterative process presented in four research publications. The dissertation connects the contents of those publications together by summarising and explaining how each publication contributes to the overall research questions and assesses the results by providing answers to them.

Publication I studies land lessors' and land cadastral authorities' (specialists) perceptions of the lessor's status in a public cadastral procedure (land consolidation) and brings forth possibilities to improve their status by developing the land consolidation processes. Further, Publication II explores the issue in an international context by providing insights into multiple European fronts. Publications I and II explain the perceptions and needs of land lessors as a specific customer group.

Publication III explores the possibilities of adapting the voluntary approach in the Finnish context by providing a comparison with international voluntary approaches. The publication reflects on voluntary issues regarding traditional compulsory land consolidation and an experimental farm-based land consolidation case example. The publication offers a comparison of a set of methods implemented in voluntary land consolidation approaches and their adaptability in the Finnish context as tools for responding to customer needs and contributing towards a customer-oriented approach.

Publication IV introduces the customer-orientation concept in public cadastral procedures and explores the possibilities to improve it in public cadastral procedures (subdivision) by utilising an experimental case example. The publication promotes the usability of customer-orientation in public cadastral procedures and its benefits to the public organisation hosting the cadastral procedures.

The effects on efficiency are derived from all of the publications above. The question analyses how customer-orientation and methods improving customer-orientation, e.g. the voluntary approach, affect the efficiency of cadastral procedures for both the customer and the public organisation hosting the process.

The overall research structure consists of the definition of the research problem, a literature review, empirical data acquisition and analysis, combining and assessing the research material, conclusions and discussion. The research problem and research framework are described in chapters 1 & 2. The research design and methodology is explained in chapter 3, and chapter 4 features the summaries of the research publications. Lastly, chapter 5 contains responses to the research questions, research contribution, validation of the research and suggestions for future research. Although the publications presented in this thesis are independent sub-researches, the dissertation is based on a broader assessment of the research conceptual framework and outcome. The composition of the research and timetable is presented in Figure 1.

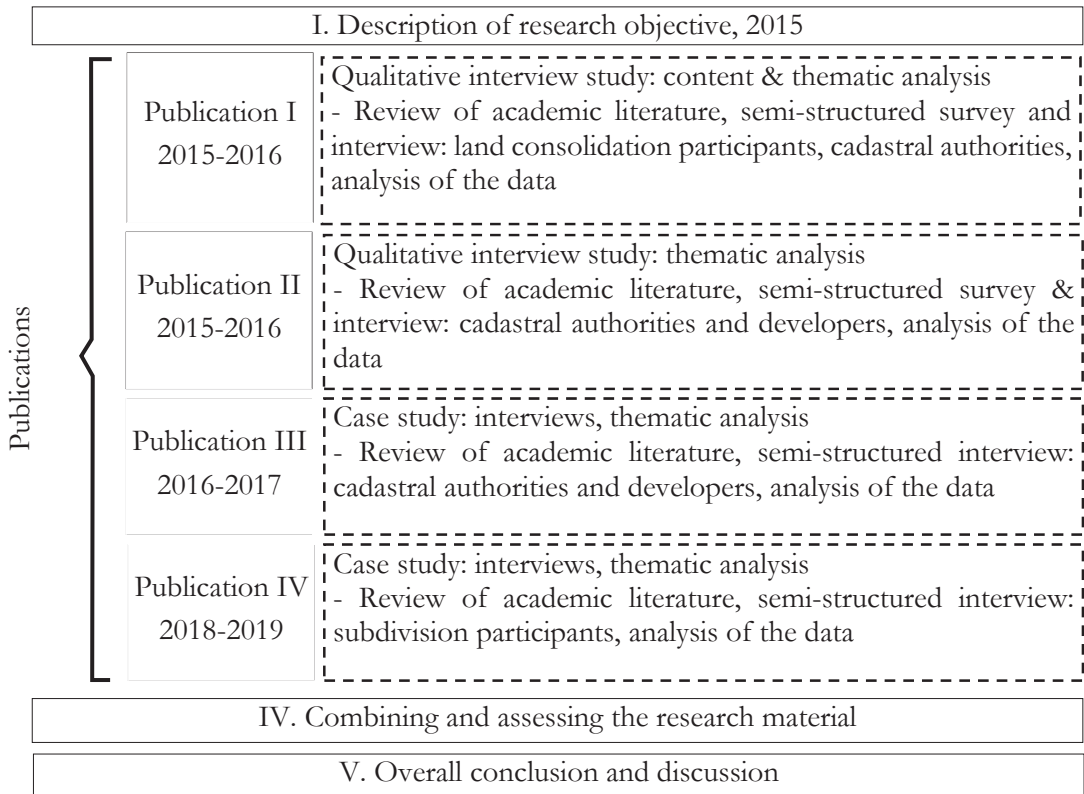


Figure 1. The composition and timetable of the research structure in chronological order

2 THEORETICAL BACKGROUND

This dissertation contributes to public land administration, in the field of land use and real estate development, for instance cadastral management. Such public cadastral procedures involve procedural decision making where public authorities from public organisations make decisions concerning a set of stakeholders, the participants of the procedure. Customer-orientation itself is an interesting issue in public processes where it may be seen as a challenge or an opportunity for upholding the necessary service quality and principles of the public sector (see e.g. Andreassen 1994; Chen et al. 2004; Fountain 2001).

The juridical framework of the research is based mainly on the Finnish Land Use and Building Act (LUBA 132/1999) and the Real Estate Formation Act (REFA 544/1995). The land use and real estate formation processes are tasks of the public sector (REFA 544/1995 Chapter 2; LUBA 132/1999 Chapter 2). Despite the juridical framework being focused on Finnish legislation, there are similarities in various countries. For instance, the Finnish cadastral system is based on the German system, used across Central, Northern and Eastern Europe. (Niukkanen 2014: 43-46). In the Nordic countries alone, the cadastral systems have been developed during past centuries and have a distinctive national character, based on a long historical background (Eriksson 2007).

Cadastral systems consist of real properties with certain rights. Such rights determine how the right holder may use his/her real property. The cadastral system is maintained through these main tasks: adjudication, property transfer and subdivision (Niukkanen 2014; Zevenbergen 2004). In this manner, the modification of real properties is conducted through public cadastral procedures, described and imposed by law (REFA 544/1995). Property (re)formation is, in many cases, utilised in urban land use developments in accordance with urban city planning and in rural areas land use developments and parcel reorganisations.

Abductive reasoning, as described in the research design chapter, highlights the back and forth discussion between empirical and theoretical material. The theoretical background of the dissertation can be divided into juridical and customer-orientation frameworks, where the former is based on legal research and the latter on models of customer-orientation in the public sector. The division is presented in Figure 2.

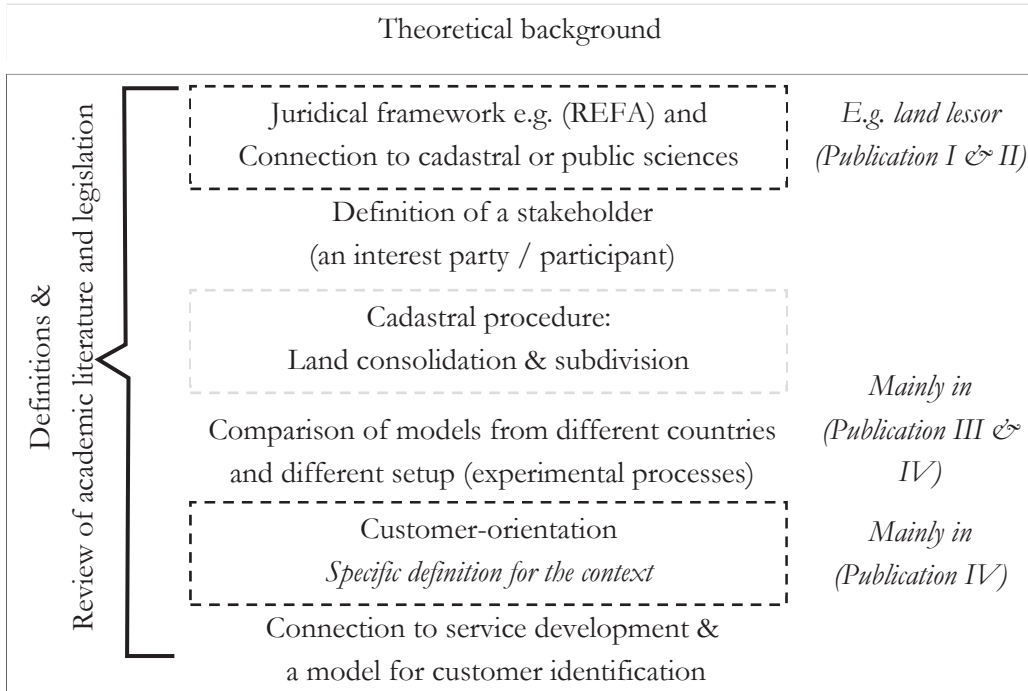


Figure 2. Definitions and theoretical background

The dissertation is based on concepts used in juridical and cadastral studies, such as the cadastral procedures of land consolidation and subdivision, and public administration research. Additional concepts are based on participant statuses, like the voluntary approach and customer-orientation in the aforementioned processes. In cadastral or public sciences, the terms ‘stakeholder’, ‘interest party’ or ‘participant’ are common, signifying a party involved in the process.

2.1 Public cadastral procedures, land consolidation and subdivision

The purpose of public cadastral procedures in Finland is, for example, to establish new properties and rights of properties, or to modify existing ones based on the Real Estate Formation Act (REFA 544/1995). The procedures are conducted by public authorities and implemented through state organisation, the National Land Survey (NLS) or municipalities in urban areas. (REFA 544/1995 section 3). In an international context, private surveyors may be utilised to conduct cadastral procedures, depending on, for instance, what kind of a cadastral system the country in question has (see e.g. Niukkanen 2014). The cadastral procedures of land consolidation and subdivision are further explained below, as the studied experimental cases are based on those procedures.

2.1.1 Land consolidation

In the Finnish context, the purpose of land consolidation is to improve fragmented land division and the usability of real estate (REFA 544/1995 section 67.1). A typical land consolidation process improves land division by reallocating land parcels in more usable positions and usually merges them into larger parcels as shown in Figure 3. In a procedural sense, land consolidation consists of comprehensive reallocation of large fragmented agricultural or forest holdings or their parts (Vitikainen 2004; Hiironen et al. 2009)

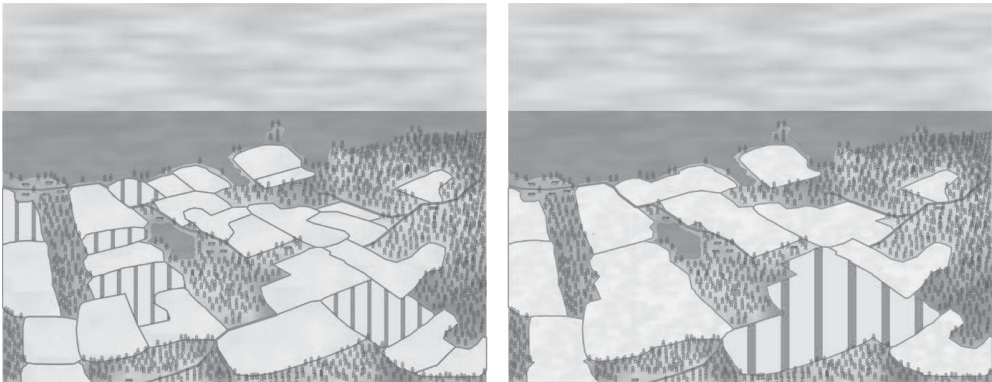


Figure 3. The outcome from the perspective of one landowner is highlighted dashed as a pattern in a sample (Sulonen 2016).

Based on Van Dijk (2003 and 2005), land fragmentation can be classified into the main categories of ownership fragmentation, land use fragmentation, internal fragmentation and the discrepancy between land ownership and use. Of these categories, internal fragmentation has traditionally been the main subject of Western land consolidations.

An issue in land consolidation is the relation between land ownership and use, as stated by Van Dijk. Land consolidation generally focuses on land ownership, since land lease is a temporary state. The temporary nature of land leases causes challenges. For example, Myyrä (2009) states that the low increase of farmland production is due to increased land leasing in agricultural areas and the insecurity regarding the continuation of lease contracts. The agricultural use of leased land encounters similar challenges as land that is owned: for example, available parcels may not be in the best possible positions or of the best possible shapes (Hiironen et al. 2009). In this perspective, focusing on improving leased lands and land lease status plays a significant role in the development of agriculture and land consolidation. The status of land leases in urban areas is different, since the land lease is more regulated and protected in urban areas (e.g. Act on Tenancy, AoT 258/1966, Chapter 2).

A modern perspective is becoming more and more common, where the solution of the reallocation in land consolidation is negotiated with landowners (Lemmen et al. 2012). The modern development concept in rural areas has also become broader by including

environmental awareness and other non-agricultural concerns (Varga & Bazik 2013). To complement these modern trends customer-orientation and reducing the duration of the process have been major focuses for the development of Finnish land consolidation (Hyvönen 2001: 331–333; Hiironen 2012: 58–60; Kotilainen 2009). These aims are delivered for instance on utilising voluntary and flexibility aspects (MMM 2015; Potka 2016).

In the international context, there are fundamental differences in the methodological procedure and in the legal status of land consolidations (Thomas 2006). The methodologies range from comprehensive and compulsory land consolidation where parcels are rearranged to lease or market-based land consolidation where the rearrangement is made by leasing or buying and selling (Thomas 2014; Eberlin 2015). The procedure in Finland includes the major phases of *preparation, planning, implementation and conclusion*, where a group of landowners are involved in the process (see Table 2.).

Table 2. The Finnish land consolidation phases (Regional comprehensive land consolidation) based on Vitikainen (2003; 2004) and Sulonen et al. (2017)

Phase	Description
Preparation	
Feasibility studies	<i>Assessing interested landowners, mainly voluntarily. Customer application</i>
Land consolidation procedure	
Planning	
Project plan (project area), inventory of the rights and valuation of the land Preparation of the reallocation plan	<i>Primarily voluntary, some areas may need to be included compulsorily to form (a comprehensive) project area Devised by land professionals, bearing the interest of participants</i>
Implementation	
Registration of the plan, demarcation and taking into possession of new parcels Costs of the land consolidation.	<i>To finalise the planning. Partial public (state) funding for the procedure and the improvement works</i>
Conclusion	
End of the procedure	
Additional processes	
Improvement of agricultural infrastructure	<i>Improvement of the road and drainage network</i>
Public (state) land acquisition	<i>Land acquisition before the project</i>
Co-operation with interest groups	<i>Interviews and procedural meetings</i>

The experimental (farm-based) land consolidation studied in the research as a case example follows the structure of (traditional) regional land consolidation. Generally, the farm-based process can be described as a simplified version of comprehensive land consolidation with a voluntary aspect (Potka 2016; Sulonen et al. 2017).

2.1.2 Subdivision

Subdivisions are one of the most common types of cadastral procedures in Finland, especially in comparison to rare and comprehensive land consolidation (see e.g. NLS 2018; Sevatal et al. 2006). The purpose of subdivision is to modify the existing land division mainly by partitioning a plot into more suitable individual plots. The procedure differs slightly depending on which authority conducts it. For instance, based on Finnish legislation (REFA 544/1995; APMR 353/1987; DPMR 906/1996) the ownership right on land is always registered by the NLS. In urban areas, a typical subdivision is conducted when a new plot area is designed and new plots are ready to be subdivided. As a cadastral procedure, subdivision follows the same principles as land consolidation, but on a smaller scale. The procedure includes preparation (*applying for and investigation of criteria and the project area*), planning (*meeting with interest parties, a formal convening*), implementation and conclusion of the procedure (*cadastral decision and registration of the new property division and ownership*). The phases of the procedure are presented in Table 3. in comparison with the traditional and experimental procedure used as a case example for subdivision.

Table 3. Description of the subdivision procedures, traditional (current) and experimental, based on Mattsson (2011) and Sulonen et al. (2020)

Methods applied in the traditional procedure	Methods applied in the experimental procedure
Preparation and initiation of the subdivision procedure	
Customer applies to the cadastral authority	Customer applies to the cadastral authority
Authorities investigate the formal criteria for the procedure	Authorities investigate the formal criteria for the procedure
	Customer is interviewed, for example by phone, email or separate meetings, depending on the extent of matters to be discussed
Planning and preparation within the actual procedure	
Measurement: demarcation of boundaries and investigation of rights	By default, no legal demarcation or assessment of new rights. <i>(Based on customer's wishes)</i>
Meeting with interest parties <i>(formal convening)</i>	Meeting with interest parties <i>(informal convening date is agreed during the interview if possible)</i>
Implementation of cadastral decision and registration	
Cadastral decision by surveyor <i>(related to new property unit and rights)</i>	Cadastral decision by surveyor <i>(related to new property unit and rights)</i>
Appeal period	Appeal period, if not agreed by participants
Conclusion	
Property unit and rights are registered. End of the procedure	Property unit and rights are registered. End of the procedure
Information is sent to land registration authority, participants and possibly other authorities	Information is sent to land registration authority, participants and possibly other authorities
Land registration authority registers the ownership	Land registration authority registers the ownership

The basic procedural difference between the experimental and the traditional procedure is to introduce a voluntary perspective in additional methods. The forming of new real properties is the basis of the subdivision procedure, which is why the procedure is applied.

Other elements, for instance demarcations of borders and establishment of new rights, were commenced with the customers' consent to allow flexibility to the procedure.

From a juridical perspective, it is essential to distinguish the difference between legal demarcation and physical demarcation. The former defines the limits of legal property rights with the consent of neighbours and the latter is conducted for physical land identification and measurement. The mandatory legal demarcation may lead to undertitling and overdemarkation, in which case in particular landowners may remain inactive in anticipation of boundary-related litigation. In practice, developing processes towards voluntary land titling and demarcation is a universal effort (Arruñada, 2018).

2.2 The status of land lease and its nature

A land lease is a right entitling its holder to use the real property without ownership and it is a part of 'the bundle of rights' ¹related to real properties (Lemmen et al. 2003; Riekkinen 2014). A land lease offers a unique status in cadastral procedures for the lessor and the leaseholder, mainly due to the temporary nature of the right and definite legislation. For instance, Haataja (1921: 253) defined the concept of land lease as follows: a private land lease is a contract-based legal relationship where the lessor assigns property to the leaseholder's possession for a defined period of time and receives payment as compensation. Haataja (1934: 13) further expanded the definition, as if the compensation is not paid for periodically, but only once, it is not considered as rent. This definition was devised at the time of the Finnish crofter issue in accordance with modern land lease legislation later (AoT 258/1966). Moreover, Saarnilehto (2006: 2) elaborates that if the lease does not include a payment of compensation to the lessor, it is considered a loan rather than a lease.

A land lease in Finland can be registered if the lease right is transferable to a third party without hearing the landowner and if the lease contract allows building in the area or there are buildings in the area belonging to the leaseholder. However, this option is primarily applicable only in the long term and for whole real property leases in urban areas (Land Code 540/1995 chapter 14 sections 1–2). The legislation does not recognise long-term oral agricultural land lease contracts (AoT 258/1966 section 3).

For agricultural land, the Finnish regulations provide flexibility but can cause uncertainty regarding the continuation of the land lease. This may further increase land fragmentation resulting in a lack of land improvement and inefficient use of land. (Vitikainen 2003; Lähde 2007: 85-86; Myyrä 2009: 17-24). The legislative differences have an effect on lease markets, for example in France, Belgium and the Netherlands where the public sector regulates rents (Ciaian et al. 2012).

¹ The "bundle of rights" is a term describing a set of legal privileges of land owner. An example of the bundle includes right of possession, use right, pastoral right, right to mortgage and easement (Lemmen et al. 2003).

2.3 The voluntary approach and co-creation

In response to different public and civic needs, a shift towards more participatory and voluntary approaches in society and governance is visible (Beunen & Louwsma 2016). By following the political trend to involve citizens in taking responsibility for their own environment and neighbourhood instead of expecting public organisations to act, the participatory and voluntary approach in land consolidation was applied in the Netherlands (Louwsma et al. 2014). The challenge of the completely voluntary approach in land consolidation is that it may limit the best possible results since not all landowners are involved, and therefore problems are not solved for landowners not participating in the project (Louwsma et al. 2014; Hartvigsen 2015: 417).

Co-creation occurs when citizens actively participate in designing and delivering the services they receive. Citizen participation is increasingly in the interests of policymakers and expectations are high for it bringing possible solutions to the public sector's challenge of decreasing resources by providing access to more of society's capacities. (Brandsen, et al. 2018). In public cadastral processes, co-creation acts as a method of implementing participants' needs into the process as early as possible, thus adding participants' contribution and resulting in a lesser need to appeal later.

In the participatory approach of the Netherlands, reallocation is co-created with and between the participants, and the public organisation is considered as a landowner (Lemmen et al. 2012; Louwsma et al. 2014; Beunen & Louwsma 2016). Hartvigsen (2015), who presents another model for solving land fragmentation issues in Central and Eastern European countries, considers the voluntary approach important because it respects the rights of landowners and reduces the duration and costs of a project. Land consolidations based on participants' agreement and collective decision-making shows the importance of strong social capital and trust among the group (see e.g. Beunen & Louwsma 2016; Haldrup 2015).

2.4 The model and concept of customer-orientation in the public sector

The term 'customer' connects the study into concepts related to service development in public processes and private enterprises. To study the customer-oriented perspective in public processes, the customers and their needs need to be identified in each process, as well as how to create effective service delivery. These definitions are essential since the public sector offers a diverse range of services, of which the cadastral procedures represent one portion. They consider, for instance, the rights of one or many citizens and are either applied for by the customers or imposed by public sector authorities.

To construct a framework for this perspective, the model for a customer-oriented service system² (Chen et al. 2004; 2005) for the public sector and its implications for customer-oriented organisations (Kohli & Jaworski 1990) are utilised in the following steps:

1. identifying the customers
2. identifying the status of customer-orientation in the process
3. identifying the customer needs
4. service system design to meet the customer needs and deliverance (implementation).

In the adaptation of the model, also encouraging improvements in organisational culture have an important role (Chen et al. 2004 and 2006).

2.4.1 Identifying the customers

The definition of ‘a customer’ is not straightforward in public processes. For instance, not all customers pay for public services directly (Wisniewski & Donnelly 1996). To further define the customer concept in this study, customers in cadastral procedures may be divided into external and internal users, as in customer satisfaction surveys performed by Dutch Kadaster (see. Todorovski & Lemmen 2007). External users can be further divided into authoritative and non-authoritative users (see. Krigsholm et al. 2018).

To examine the non-authoritative external users in public processes, the customer perspective can be achieved by examining the interest parties of public processes. In some perspectives, all stakeholders can be regarded as a public organisation’s customers (Chen et al. 2006). In general, multiple parties may be identified, whose rights the procedure immediately concerns, for instance private landowners, land developers, utility companies, various public organisations, citizens, etc. For instance, the ownership right is a central right where classifying regulations into prohibitions, obligations or advantages influence the ownership right to real property (see Paasch 2012). In this context, the applicant of a cadastral procedure is identified as a customer, since he/she usually has the strongest interest in completing the procedure and generally covering the accumulated costs based on legislation (REFA 544/1995). The definition thereby excludes other interest parties who may have different needs.

² Based on Chen et al. (2004); Kohli & Jaworski (1990) in Publication IV, a framework was created for: Identifying the customers, identifying the status of customer-orientation in the procedure, identifying the customer needs, designing a service system to meet the customer needs and delivery focused on recognising the effects of organisational culture.

2.4.2 Identifying the status of customer-orientation in the process

The status of customer-orientation in the public sector can be described from alternative perspectives. Fountain (2001) describes the phenomena as paradoxes where customer service techniques and tools may lead to increased political inequality, even if some aspects of services are improved. From another perspective, Andreassen (1994) argues that, to offer high utility services, the public sector must be more market-oriented and offer more differentiated services for each customer. However, the public sector's long-established practice of providing one homogeneous offer to all users is proving a major challenge in this strategy.

From a modern perspective, customer-oriented approaches have arisen in the previous decades in public services, for instance, in the management of cadastral systems and land administration (Krigsholm et al. 2017; Riekkinen et al. 2016; Kotilainen 2014; Muggenhuber 2011). The customer-orientation can be described from alternative perspectives thus introducing a debate of its adaptability in public processes. In this sense, the public organisation providing cadastral procedures as a public service must identify its values to consider the status of customer-orientation in their organisation or processes.

2.4.3 Identifying the customer needs

The definition of 'customer needs' relies on information from customers and the quality of information. Nwankwo (1995) claims that many organisations have difficulties with inappropriate visions of customers and their needs, since delivering the service means more than personal skills. Svensson (2018) highlights the significance of information quality, allowing authorities to co-operate and make quick decisions, thus reducing the overall lengthy land use processes in Sweden. Svensson (2018) further explains modern qualifications meaning the constantly increasing demands where everyone is striving to get business more cost-efficient and to use digitalisation for swift and efficient decisions in planning and building processes.

Price and Brodie (2001) indicate that the voice of the customer should be used to frame the project in the first instance to avoid inadvertently improving performance in areas that are not important to customers. However, according to Chen et al. (2006) public organisations have difficulties in investigating real customer needs, for example by systematically, scientifically and periodically interviewing customers. The customers themselves can be an important source of information regarding actual customer needs in public processes through favouring, for instance, periodical feedback or customer interviews, thus justifying the interviews conducted with cadastral procedure participants as empirical evidence of the study.

2.4.4 Service system design to meet customer needs and deliverance (implementation)

Chen et al. (2006) propose that public organisations should focus more on developing processes to meet customer needs, highlighting it as the most important issue in designing any service system. In addition to system design and management, the service must be delivered to customers, e.g. by the employees in a public agency (Chen et al., 2004). Altogether, Chen et al. (2004 and 2006) state that fostering organisational culture plays an important role in the implementation of customer-orientation and the design and delivery of services, but changing the culture may be difficult. In this context, a new design focusing on the customer-oriented principles of existing cadastral procedures is introduced as experimental procedures. The services are mainly conducted on voluntary principles based on application and the imposed elements are rarely used. For a detailed description, see Chapters 2.1.1 and 2.1.2. Further steps do require the construction of an organisational culture suitable for the change

2.5 The efficiency needed in public cadastral procedures

Since the public sector balances with the recognised challenge of how to offer public services more in line with the needs of their users with fewer resources, there is an urgent need to renew the public sector itself to achieve radical productivity improvements and efficiency gains. Across the European continent, public sector services lag behind the needs of modern citizens and businesses (Andreassen 1994; Bason et al. 2013). Thereby in this context, the efficiency improvement considers how the public sector may find more cost-effective methods to perform its processes and, at the same time, respond to its customer's needs.

In public sector land use planning, market-orientation means focusing on creating favourable conditions for economic growth and private investment. The method may be considered, especially for Finnish municipalities searching for a way out of their paralysing economic difficulties (Mäntysalo 1999). Additionally, simplification and clarification of the land use planning system as well as the public decision-making processes involved in planning and building processes has been under way since 2018 in the Ministry of the Environment of Finland (YM014:00/2018).

However, since customer-orientation and its effects in public processes can be perceived in different ways, as mentioned above (see e.g. Andreassen 1994; Fountain 2001; Chen et al. 2004). Thereby, the public sector development needs to evaluate, balance or redefine its principles for modern needs.

Further, the modern perspective of the (Finnish) cadastral system is focused on customer-oriented multipurpose approaches, for example, in how the changing uses of the cadastre and cadastral information affect the efficient dynamism of administration

(Kotilainen 2014; Riekkinen et al. 2016; Krigsholm et al. 2020). Similarly, the digitalisation of land use planning systems and practices and possible pathways towards a digital service ecosystem and automation of decision-making, especially in cadastral survey proceedings, are key steps toward future public land use planning processes (YM014:00/2018; Krigsholm et al. 2020). In terms of the overall length of public cadastral procedures, their duration was clearly the longest in Finland compared to other Nordic countries (Eriksson 2007). The current shift on policies and the expected duration of public cadastral procedures describe phenomena in which the matter of increased efficiency has an important role in future planning of public systems in Finland.

3 RESEARCH DESCRIPTION

3.1 Research design and methodology

The research is a qualitative and empirical study based on combining a theoretical framework and empirical evidence. It can be identified as abductive reasoning where existing theories may support findings from empirical data. Abductive reasoning follows a pragmatist perspective addressing the weaknesses and strengths of both deductive and inductive reasoning by combining them (Mitchell 2018). Dubois & Gadde (2002) present abductive reasoning as a process where theoretical framework, empirical fieldwork, and case analysis evolve simultaneously.

When a researcher encounters an empirical phenomenon that cannot be explained by the existing range of theories, abductive reasoning takes incomplete observations from reality which may lead to the best prediction of truth to explain the phenomenon or perhaps a new theory (Kovács & Spens, 2005; Mitchell 2018). A major difference in abductive reasoning, in comparison to deductive and inductive studies, is the role of the framework. In abductive reasoning, the original framework is successively modified mostly as a result of unanticipated empirical findings and theoretical insights gained during the process (Dubois & Gadde 2002). Deductive reasoning lacks clarity in terms of how to select a theory to be tested via formulating hypotheses, and no amount of empirical data will necessarily enable theory-building in inductive reasoning (Saunders et al. 2012). Abductive reasoning, nevertheless, is similar to deductive and inductive reasoning in the manner it is applied to make logical inferences and construct theories (Mitchell 2018).

Abductive reasoning was selected since it combines a theoretical framework, empirical fieldwork and case analysis. The objective was to gain additional insights on the existing theoretical background but also to seek new, possibly unexpected viewpoints and acquire a more comprehensive picture of the studied phenomena (see e.g. Blaikie 2009; Dubois & Gadde 2002). To gain a comprehensive picture, exploring different public cadastral procedures for insights and comparison is sensible, especially since the matter of developing public cadastral procedures in customer-oriented ways is present in various contexts internationally.

Epstein & King (2002) describe empirical research to be based on observations of the world, in other words on data of facts about the world. Though abductive reasoning combines elements from inductive and deductive reasoning, in this study the weight is more on the inductive side, since the back and forth conversation with theory and empiricism

was employed generally in which the study had a clear theoretical background, such as definitions and analysis of the customer and the customer-oriented approach.

As the pre-existing theoretical background was limited, strong empirical evidence from interviews, surveys and case experiments was acquired as observations of the reality and to make inferences from them to explain the reality. The study is constructed on multiple phases of literature reviews and empirical data acquisition, for instance a set of different interviews presented in separate publications (Publications I-IV).

The data acquisition and analysis can be further divided into two phases. The first phase of the research consists of the acquisition of literary material such as recent studies and reports, the definition of chosen approaches in public cadastral procedures, for example the customer-oriented and the voluntary approach, the procedural frame of cadastral procedures and the juridical framework. The acquisition and composing phase is labelled secondary research since it consists of existing information.

The second phase consists of a qualitative interview research where empirical data were acquired by interviewing participants in cadastral procedures and key experts from appropriate fields. There was a limited amount of literary material, especially from the experimental case processes, which is why the actual empirical data acquisition were based on interviews and the definition of themes of the interviews was based on primary research. This phase is labelled primary research since it is composed of new information.

The empirical data acquisition are mainly based on themed semi-structured interviews, since they provide an efficient means of gathering information and allow the disclosure of important facets of customer perspectives and perceptions of the inspected cases. Furthermore, the pre-defined themes allowed systematic comparison of the topics, and open fields or open conversation allowed the discovery of additional information or connections to the topic (see e.g. Kvale & Brinkmann 2009). The purpose of the interview was to find new aspects and not to exclusively secure or test out existing theories, thus outlining a structured survey as the primary method.

3.2 Analysis of empirical evidence

The study utilises thematic analysis in the interpretation of the empirical data. Thematic analysis is a method for identifying, analysing, and reporting patterns (themes) within such data. Thematic analysis is widely used but lacks specification and a firm definition and is occasionally identified e.g. as content analysis (Braun & Clarke 2006). As for instance Hsieh and Shannon (2005) describe, content analysis is used to interpret meaning from the content of text data and thus it adheres to the naturalistic paradigm. They also divide content analysis based on coding schemes and the origins of codes, and threats to trustworthiness.

Braun and Clarke (2006) specify that content analysis has a tendency to have a more micro-level focus, often providing (frequency) counts from the data and allowing for

quantitative analyses of initially qualitative data. Vaismoradi et al. (2013) further confirm the division, in spite of many similarities between content and thematic analysis, in the possibility of quantification or qualifying data. For instance, in content analysis the possibility of finding a theme is based on the frequency of its occurrence, where as in thematic analysis it is a non-linear process involving emphasizing the context and integrating manifest and latent contents (Vaismoradi et al. 2013).

Since the study was based on finding the phenomena and differences and similarities in the data, flexible use of content analysis and thematic analysis was utilised to examine topics emerging from the data. Favouring thematic analysis in most data, analyses were based on not quantifying the occurrences in the data, but rather interpreting the meanings and weights present in them.

As Hsieh and Shannon (2005) describe, a summative way of content analysis begins with searches for occurrences of the identified words and the frequency of words including latent content analysis referring to the process of interpretation. Content analysis in this context was used to find frequencies in open-ended questions presented to land lessors to provide more comparable material. The numerical data acquired from the summative content analysis were the basis for forming themes together with numerical data of structured closed-ended questions. The overall data, however, were analysed in a qualitative manner as in thematic analysis.

In practice, thematic analysis proved to be a useful method to distinguish lessors' needs in land consolidation as well as generally customers' needs in subdivision. The analysis further allowed to find out the differences and similarities between international and national contexts as well as alternative procedural methods between traditional and experimental cadastral procedures.

The design and work processes used in the different parts of the study are explained in Table 4. and in more detail in each publication. The contribution of each article to the overall thesis is explained in chapters 1.3 and 1.4.

Table 4. Data collection and analysis techniques applied in each publication

Publication and case	Data collection techniques	Analysis methods	Interview/Survey (participant count)
Publication I (Finland)	Literature review Empirical material: Semi-structured surveys and interviews. <i>Mainly qualitative data (some structured questions analysed qualitatively)</i>	Content analysis & thematic analysis of semi-structured surveys and interviews	For cadastral authorities (20 of 20 responded) and participants (land lessors; 163 of 353 responded) from key operative land consolidation areas in Finland - period 2013
Publication II (Cyprus, Finland, France, Germany, the Netherlands, Latvia and Estonia)	Literature review Empirical material: Semi-structured survey and interviews. <i>Qualitative data</i>	Content analysis & thematic analysis of semi-structured surveys and interviews	For various international contacts (10 of 29 responded) e.g. cadastral authorities or developers from key operative land consolidation areas in Europe. - period 2014-2015
Publication III, (Finland, Eastern Europe, the Netherlands) Voluntary land consolidation approaches Experimental case, farm-based land consolidation	Literature review Empirical material: Semi-structured interviews <i>Qualitative data</i>	Thematic analysis of semi-structured interviews	For selected specialists (5) E.g. cadastral authorities designing and developing the experimental process in Finland. - period 2016-2017
Publication IV, (Finland) Experimental case, subdivision	Literature review Empirical material: Semi-structured interviews <i>Qualitative data</i>	Thematic analysis of semi-structured interviews	For selected customers of experimental and traditional subdivision (8) E.g. land owners and representatives in city area of Tampere, Finland - period 2018

3.3 Description of interviews

The empirical data of this research were collected through interviews and surveys. A qualitative research often focuses on a discretionary sample in which it is not useful to pick the study population completely at random. Those that meet the appropriate characteristics are selected for examination (Eskola & Suoranta 2005).

The interview and survey participants were selected in a manner where they would represent a general participant group of the specific process, for instance subdivision in the

urban area of Tampere. In search of suitable participants, a set of inquiries were made to known contacts, for instance to country representatives or local directors of National Land Survey organisations.

In Publication I, a survey with closed- and open-ended questions³ was sent to land lessors (a total of 353 contacts of which 163 responded) who had participated in land consolidation procedures. In the selection of survey participants, temporal and regional criteria were used. The regional criterion meant that the selected land consolidations had to cover the area where land consolidation activities in Finland were concentrated at the time of the study. The selection covered participants from completed land consolidations from Ostrobothnia⁴ started and completed between 2000–2013. The temporal criterion was to ensure that most of the participants were reachable with fresh experiences of the procedure.

The inquiries were accompanied with a second survey⁵ with a similar structure to land consolidation specialists, for instance public (state) authorities, (a total of 20 contacts) working in the aforementioned land consolidation areas. In the selection of the participants, similar criteria were applied as in the previous survey. The enquiries were conducted in 2013 using traditional paper-mail for lessors and a web-based form for specialists.

In Publication II, previous data were utilised and, in addition, a semi-structured survey⁶ was conducted with 29 specialists from different European countries (Cyprus, Germany, France, Estonia, the Netherlands and Latvia) of whom 10 responded. The specialists were selected based on several criteria. The regional criterion was to select areas from different parts of Europe where land consolidation processes were common and relatively similar in a procedural sense. The second criterion was to select participants who had national expertise in the topic and were responsible for land consolidation in that area.

The interview data were compared with land prices, areas of leased field parcels and total leased areas in 2014 and 2015. The data were used as an aid to finding themes in and interpreting the interview material. In Publications I and II, the interview themes covered the status of lessors and land leases, for example lease frequency, rent price, length of lease contracts and legal frames.

In Publication III, a semi-structured interview⁷ was implemented to collect empirical data. Five interviews were conducted with land consolidation specialists involved in the development and implementation of the experimental land consolidation process (described in the next chapter) in 2016 and 2017. The purpose of the interviews was to gain perspectives on current voluntary approaches applied internationally and the current status

³ The questions of the interview are presented in attachments, section 7.1

⁴ More specifically land consolidations were selected from regions of Ostrobothnia and Northern, Central and Eastern Ostrobothnia areas in Finland.

⁵ The questions of the interview are presented in the attachments, section 7.2

⁶ The themes of the interview are presented in the attachments, section 7.3

⁷ The themes of the interview are presented in the attachments, section 7.4

of land consolidation in Finland. In this case the themes of the interviews were derived from the secondary research data.

A semi-structured interview⁸ was implemented in Publication IV where the themes of the interviews were derived from the secondary research data, as in Publication III. The interviewees were participants of completed subdivision procedures in the city of Tampere in 2017, with a majority of the participants representing companies operating in the local house-building business. To ensure quality comparison, the participants had to have experience of both experimental and traditional means, which also limited the available interviewees. In practice, land-owners or enterprises holding larger landmasses, such as private construction companies, representatives of the joint alliance model (for example public and private organisations working together in a specific project) and public communities, such as municipalities, participated in the interviews, whereas single plot-owners were third-party customers to the aforementioned interviewees. In total, eight interviews were conducted in 2017 following this setup, including aspects of private and public landowners as well as large development companies and small-scale landowners.

The participants were interviewed with structured or semi-structured forms (Publication I and II) and in separate meetings for ½–1 hour sessions (Publication III and IV), where the data were converted to written form.

Various factors limited the number of interviewees, for example the specific nature of the studied approach and the time frame. In many occasions, participating in cadastral procedures is a rare occurrence for a common citizen, since most land owners or small business enterprises do not have vast land areas available for development. For instance, the specific nature was a limiting factor, since the study focused on the experimental processes and field experience of them was required.

3.4 Description of the experimental cases

The experimental processes in this research are based on practical development wherein various aspects are tested on actual cases. The processes focused on both rural area development and urban area development.

The experimental cadastral procedures (farm-based land consolidation and subdivision) are utilised as case samples in the research, where empirical evidence is drawn from and analyse methods are tested in a specific context for the first time. The evidence is acquired through interviews with authorities and participants of those processes.

One of the key concepts in the experimental processes is a voluntary approach utilised in different land consolidation processes across Europe. The international comparison include Hartvigsen's (2015) integrated voluntary land consolidation model for Central and

⁸ The themes of the interview are presented in the attachments, section 7.5

Eastern European countries and the Netherlands' model for a participatory approach (see. Beunen & Louwsma 2016). The experimental voluntary land consolidation model, a farm-based land consolidation model in rural areas of Finland, is utilised as a case example in this research. In the voluntary approach, participation in the process is also voluntary, and the focus is on how to improve co-creation among the process participants and authorities.

Another experimental cadastral procedure, customer-oriented subdivision, was field tested in the urban area of Tampere, the second largest urban area in Finland. The model aimed to improve customers' capabilities of influencing what elements were used in the process and its timetable. Especially from a public organisation's viewpoint, improving the efficiency of the process with such methods was examined.

4 SUMMARIES OF THE ARTICLES

This chapter summarises the publications that this thesis is based on. The summaries describe each publication's objective, key findings and contribution to the research. The full publications are appended to this thesis.

4.1 Publication I: Lessor's Status in Land Consolidation in Finland

Publication I studied the lessor's status in land consolidation procedures in agricultural areas in Finland and how the process can be developed from the lessor's viewpoint. The lessor's status was selected since the land lease has significant value in agricultural areas and current studies focused on the leaseholder's status.

The study was based on the discussion on how the lessor's and the leaseholder's statuses reflected on one another in the process. The statuses were studied from juridical and functional viewpoints and compared with the leaseholder's experiences. In this context, land lease legislation and cadastral procedures were considered as practices within their implementation.

Land consolidation in Finland is a cadastral procedure conducted by public (state) authorities. The purpose of the process is to improve the current use of properties and property division by reallocating land parcels. The reallocation is mainly done without changing the ownership of properties, but by reallocating land parcels in different positions.

The study consists of a review of literary sources and primary data from empirical interviews (surveys) where lessors were interviewed with a form (structured questions) and by phone (open-ended questions.). Supporting interviews were conducted with land consolidation experts (open-ended). The main purpose of the interviews was to find out the lessors' experiences of the land consolidation process and their status, and to fill in the findings with experts' experiences.

The lessor's status in land consolidation generally resembles other landowners' statuses (costs, hearing of participants, etc.). However, since the lessors do not use their land themselves, their status is affected by the land user's status, giving them a unique status in the process.

The lessors were generally positive regarding the land consolidation process and its outcome, but they were unsure about whether they would benefit from the process themselves. The lessors were concerned that land consolidation would cause additional and

unnecessary costs for them, and rather benefits more the leaseholder. Altogether, the experience varied slightly between regions, for instance in terms of land value. Additionally, the distribution of costs caused by the land reallocation among the land lessor and the leaseholder is challenging if lease contracts are made only for short-term periods. In other words, a leaseholder with a short-term lease contract is generally more unwilling to invest in the land than a leaseholder with a long-term contract spanning over multiple years or decades. For instance, landowners, as retired farmers, did not lease the land for profit in most of the cases but rather preserved the land for the next generation. In this case, their need was to merely cover the costs of the land by leasing it, not develop the monetary profit from it.

The status of lessors as a specific customer group may be improved in the future by focusing on informing them about and promoting cost-sharing with their leaseholders or other participants. Providing information would especially focus on the lessor's opportunities to influence key land consolidation phases. Mutual co-operation with the other participant group is essential.

Notably, the structure of the agricultural land lease in Finland is changing in the near future, based on the modern trend of field circulation, when the ownership of the land will be passed on to the heirs of retired farmers. Based on research findings, a possible scenario in this change is that new land owners may want to improve their investment values rather than preserving the land for future generations. Such a scenario would inevitably affect the needs of land lessors.

4.2 Publication II: Lessor's status in land consolidation in Europe – Reports from Cyprus, Finland, France, Germany, the Netherlands, Latvia and Estonia

The publication studied the status of landowners in land consolidation procedures in agricultural areas from a European perspective. Generally, it broadens the perspective of the first publication into the environments of Cyprus, Finland, France, Germany, the Netherlands, Latvia and Estonia where land consolidation is conducted or administered by public authorities.

The study consists of a review of literary sources of the studied areas and primary data from empirical evidence, the interviews designed for land consolidation experts (open-ended) from Cyprus, Finland, France, Germany, the Netherlands, Latvia and Estonia.

Generally, the lease of agricultural land is common in Europe, especially in comparison to the Finnish perspective, but there are differences in how common such leases are and in the rental value of land.

Commonly, leaseholders are not considered to have the status of participants in land consolidation, at least not in the way the lessors do as landowners. This is due to the temporary nature of the land lease. However, in areas where such leasing is common and it has a strong economic value, there are significant protective rules for the leaseholder, for example in the Netherlands. In areas where the land lease does not have a significant value and lease contracts are less continuous, the lessor has a higher status than the lease holder, for example in Eastern Europe and Finland. The future development of the land lease in Finland may eventually lead to new needs, more in line with the following West-European trends, if some of the land lessors become more interested in gaining monetary profits than preserving the land.

Based on the interviews, the lessors are commonly indifferent and suspicious about land consolidation, especially before or at the beginning of the process. The lessors' reactions are based on concerns regarding additional costs of land consolidation that they cannot distribute to the leaseholder. The lessors are doubtful about the benefits of land consolidation to themselves, considering that the costs of land consolidation are typically paid for by landowners and not by land users.

The cost distribution is challenging since land consolidation is initiated by the public organisation (state) or based on an application from landowners and due to the temporary nature of the land lease, the evaluation of the actual benefactor is not obvious to the authorities. The length of lease contracts depended on how well the benefits of the land consolidation affected participant groups and how the costs of the land consolidation can be distributed between leaseholders as land users. The lessors acknowledge land consolidation as a valuable tool for improving land use, but it is not a good investment for them.

Overall, proactive, co-operative and co-creative approaches by authorities and participants have shown positive results with regard to overcoming challenges in working to meet participants' needs. However, applying such approaches may be situational, depending on other participants' needs.

To generalise, Publications I and II feature land lessors' needs as specific participant needs in the public cadastral procedures. A response to these needs is to allow some categorisation of the needs and generate understanding of the aims behind them. An effective method is to improve information sharing, informing, co-creative, co-operative approaches of the authorities and participants themselves to keep up with those various needs.

4.3 Publication III: Voluntary land consolidation approaches and their adaptability to experimental farm-based land consolidation in Finland

The publication studied foreign voluntary land consolidation approaches and evaluated their adaptability compared to Finnish practices. The studied approaches included the voluntary approach and different roles of the authorities or external concepts of the land consolidation procedure. The study was based on the NLS's aim to develop a voluntary and flexible land consolidation procedure like that in Finland, more independent from public (state) funding. Such action would allow more flexibility in the land consolidation process and grant possibilities to focus more on specific aims, for instance on those landowners' or leaseholders' aims who are willing to invest and cover the costs of the land readjustment project themselves.

The study utilised an experimental farm-based land consolidation model as a case sample, where the aforementioned development aims were tested in Finnish agricultural areas. The methods applied in farm-based land consolidation were reflected on voluntary models of integrated voluntary land consolidation and participatory land consolidation. These models have been internationally used in various Central and Eastern European countries and in the Netherlands.

The study was structured in two phases, a literature review and an empirical analysis of data. The data were acquired from semi-structured interviews with public authorities (cadastral surveyors) responsible for conducting land consolidations.

Based on the findings from the experimental processes, voluntary participation increases the commitment of the participants to land consolidation, but may endanger the whole project in some cases. Since conflicts with the rights of other participants may emerge, the rules for voluntary participation (dropping-out rules, etc.) were seen as important.

One interesting factor was the possible shift in the role of the authorities as representatives and executors of public organisation's authority. If the authorities and public organisation's role shifts from that of a leader to that of a facilitator in voluntary processes, the conducting of the procedure shifts more towards a co-operative and co-creative direction. Further, if the responsibility for funding the procedure would likewise be shifted more from the public organisation to the participants, project funders could focus more on their needs rather than be enforced on regional issues like in traditional land consolidation.

Focusing the land consolidation procedure more on the participants' aims and shifting the roles of the authorities and the procedure to a more co-operative and co-creative direction could bring different benefits for example in the commitment to and funding of the completion of the procedure. However, the success of applying such approaches may situationally depend on social capital and trust among the target participants of future land consolidations.

As a general perspective, Publication III outlines co-creative, co-operative methods mentioned in previous publications together with voluntary participation and alternative roles as an effective method to respond to participants needs. The adaptation of said methods would require clear definitions or modifications to the delivery of the public cadastral procedures. Contrarily, the commitment of the participants and acceptance of the land consolidation process may be significantly greater in the voluntary approach in comparison to the traditional methods and the compulsory procedure.

4.4 Publication IV: Customer-oriented approach in cadastral procedures – case study from Finland

The publication studied the benefits of applying a customer-oriented approach to public cadastral procedures. The study was based on the recognised challenge of efficiently conducting public processes in line with citizens' increased needs, since public sectors in Europe, for example, will have to maintain a dynamic public sector in the future with less resources available. In modern times, the socio-cultural environment has changed towards a customer-oriented approach in public processes, for instance in the case of the cadastral system and its management.

Customer-orientation in the public sector is a challenge, referring to either the paradoxical change in political inequality or the way of establishing an efficient organisational model to respond to the public sector's recognised challenge. Since customer-orientation is a challenging concept in the public sector, the study introduces a framework for customer-oriented services and carefully defines the studied customer case. Considering the structure of the overall thesis, this publication discusses the adaptation of customer-orientation in public cadastral procedures as an approach of responding to participant needs and improving their statuses.

This study discusses the relevance of adopting a new approach in cadastral procedures by providing new methods to accomplish a subdivision procedure. The methods are based on a development process conducted within the city of Tampere, Finland. The experimental method included a short customer interview at the beginning, allowing customers to express what kind of elements they needed. As for generalisation, Tampere is the second largest urban area in Finland and utilises the public cadastral procedures as do most other cities (municipalities) in the country. The juridical framework is the same in each municipality, although there may be variations in operative methods.

The study was constructed of a literature review followed by a description of the new method and development project, linked in the case sample of experimental subdivision, in which the methods were field tested. Empirical data acquisition, a semi-structured thematic

interviews, were done to acquire the experiences of customers (mainly applicants) who participated in procedures where this method was applied.

From the customer viewpoint, the most significant benefit was how the customers were able to influence the process from the beginning due to a more proactive authorities and non-formal contact with the authorities. The customers felt that the method ensured that their interests were taken into consideration, so they favoured the method over formal convening. In terms of efficiency, the duration of the subdivision procedure was a key need for the customers, and thus the significant decrease in the duration in the experimental process was greatly appreciated by the customers. The results were achieved by dispensing with non-essential processes and shortening waiting periods.

In general, the study proves that increasing co-operation with authorities and between authorities themselves as well as different methods, such as preliminary interviews, are efficient approaches to improving customer experience and process efficiency. In the studied case, re-evaluating organisational culture and its values allowed the adaptation of customer-orientation and efficiency benefits were achieved. The implementation of the aforementioned customer-oriented principles required different roles or the evaluation of existing principles in experimental processes. In these processes, the authorities re-evaluated every method of the process in a modern juridical context and implemented optional elements with the customers' consent rather than deciding for themselves based on principles several years old. Moreover, favouring digital development emerged from the interview responses for future subdivision directions, for example to allow easy access to services.

For the overall perspective, Publication IV endorses the co-creative, co-operative and voluntary methods as well as different roles and principles of the authorities introduced in the previous publications. The publication suggests the customer-oriented approach as a combining method to respond to various participants' needs. The positive effect on process efficiency is a significant addition to this perspective.

5 CONCLUSION

5.1 Answering the research questions

The aim of the research was to increase understanding of how to improve customer-orientation in public cadastral procedures and how it affects those processes, for example in terms of increased efficiency. The research questions were formed to address the research aim. In this chapter, the research questions are separately discussed providing answers to them.

RQ1: What is the lessor's status in land consolidation in the Finnish and in European contexts and how can the lessor's needs be better taken into account in the process?

There were gaps in the knowledge regarding land lease in terms of land consolidation and the landowner's viewpoint, since land lease had been more commonly studied from the leaseholder's perspective. Additionally, significant portions of agricultural land were leased in the studied areas. There was general consideration whether land consolidation should be improved for it to become attractive from the lessor's point of view. Land consolidation, in this sense, lacked the general viewpoint of the lessor's status and their experiences to wholly cover their needs as customers of the public cadastral procedure.

Lessors had a unique status in the process since they own the land but do not use it, which limits their ability to benefit from land consolidation, at least directly as the leaseholder does. In this manner, the lessors' status as a customer group is influenced by the leaseholders' status, whereas the lessors are generally referred to as any other landowners within the land consolidation process. Influencing possibilities vary depending on how temporary or protected the leaseholder's status is in different countries and, for instance, how valuable a land lease is. This additionally affects how the lessor can increase the rental value of land in regard to investments made in land improvement in land consolidation.

Moreover, the structure of the agricultural land lease in Finland is changing due to the trend of field circulation. The ownership of land falling to the heirs of the retired farmers may alter the common type of land leasing from preserving the land to future generations more toward gaining profit from the property and willing to invest in its improvement. This scenario would inevitably affect the needs of land lessors.

The research outcome features various needs of land lessors as participants of a public cadastral procedure. Overall, lessors' status in the procedure culminates mainly in the issue

of the distribution of the costs between the land owner and the land user and the temporary nature of the lease. The lessors had concerns about whether land consolidation causes additional and unnecessary costs to them, and rather benefits their leaseholders. In countries where land value is high, land lessors are more professional investors and the agricultural land lease is more regulated in legislation, the distribution of costs is less complex. The overall costs accumulating to lessors cause them to react to land consolidation with suspicion, not because of its outcome but the cost distribution and benefit between the lessor and the leaseholder.

An effective improvement method, to reduce suspicion and to keep up with those various needs, is to understand the lessors' concerns, improve informing and promote co-creative, co-operative approaches of the authorities. The significance of co-operation in the procedure is highlighted, since the possibilities of applying different solutions are regional or situational. Altogether, as an improvement option, a proactive methods by the authorities helps to meet participants' needs, since the appeal option is less often employed. This affects also process duration.

RQ2: What kind of benefits can international voluntary land consolidation approaches enable for public cadastral procedures and their participants in a Finnish context, if applied?

In aiming to develop a voluntary and flexible Finnish land consolidation procedure that relies less on public (state) funding by attracting private investors, different experimental voluntary practices internationally were studied. The voluntary approach itself reflects on the participants' ability to influence the land consolidation procedure in different ways, and affects the roles of cadastral authorities. However, some guidelines or restrictions are important when there are conflicts of interests between participants or in the distribution of the costs of the procedure, for instance should the process involving multiple participants require a commitment to the process after it is initiated or planning has begun.

The studied methods utilised in land consolidation processes included:

- voluntary participation in the process
- land exchange techniques
- broader local development
- financing the procedure
- different roles in the process.

The research outcome highlights the use of voluntary approaches and different roles like co-creative and co-operative methods in land consolidation in Finland, allowing flexibility to the process by reducing complaints in comparison to the mainly compulsory approach. In terms of adaptability, methods concentrating for instance on broader land development

and land exchange and banking gained some favour but lacked a suitable system in Finland or were already employed or partially employed but were not gaining a foothold among the landowners or were not suited for more lightweight farm-based land consolidation aiming for fast responses to participant needs.

Adopting different roles for cadastral authorities allows them to help participants in a co-creative and co-operative manner to influence the direction of the process and thus minimise the need to later complain about the outcome. Additional flexibility is further achieved if other techniques and aims are included in land consolidation, such as environmental and cultural protection.

In terms of efficiency, if a mutual outcome is achieved early in the process, the need for re-establishment and re-working parts of the procedure is minimised, thereby decreasing its costs and duration. Practically, in this method the steps of the procedure, such as the project plan, are devised co-operatively or co-created as far as possible among all participants and authorities in aim to respond to the participants' needs.

Based on international comparison and the interview study, focusing the land consolidation procedure more on the participants' aims, for example by promoting voluntary, co-operative and co-creative approaches, would be beneficial for various participant groups including the public organisation hosting the public cadastral procedure, in this case the state. The efficiency increase in the public organisation's viewpoint is achieved by releasing time and resources from continuous re-establishment and re-working of the procedure.

RQ3: What kind of benefits can customer-orientation provide for public cadastral procedures and their participants?

Since customer-orientation in public cadastral procedures is under discussion, the aim was to define customer-orientation in public cadastral procedures (case subdivision), establish a model for its adaptation for instance by identifying customers and their needs, and to study the effects of adopting a customer-oriented approach in the procedure. A key element was to evaluate the methods used in a development project of an experimental subdivision procedure.

Customer-orientation in the public sector is perceived in multiple ways, and one perception describes the customer-oriented methods leading to a paradoxical situation and possible political inequality. According to another perception, customer-orientation is a proven method to overcome challenges to effectively perform public services. For instance, from a cadastral perspective, the process has accumulated certain heaviness through its long development history and thus has not kept up with customers' needs. All in all, the customers, their needs and the service implementation and delivery methods need to be defined if adapted and developed.

While considering the improvement possibilities in subdivision, the research outcome favoured elements in regard of improving customer-orientation by focusing on responding to customer needs with a low threshold. It was especially important to allow customers to influence what procedural methods were implemented and the duration of the process. One favourable method was to address customers' needs prior to or at the beginning of the procedure, which lead to better possibilities of influencing the procedure as mentioned above. Considering the process from the viewpoint of public organisations, decreasing the duration and selecting only the necessary methods applied in the procedure had a direct impact on improving process efficiency. This further emphasised the effects on efficiency of the minimisation of the need for re-establishment and re-working parts of the procedure.

The key findings for improving customer-orientation, moreover, concerned the different roles and working methods of the authorities, for instance promoting easy reachability and a co-operative and co-creative approach to roles instead of formal and distant roles. The co-operative and co-creative approach not only considered the customer–authority relations, but also those between authorities themselves. In this context, this indicates that alternative approaches and roles between customers and between authorities affect the services provided to external and non-authority customers.

Generally, the need to modify the existing cultural behaviour of the authorities emerged from the findings of the analysis of the interviews. This issue emerged since the implementation of the aforementioned customer-oriented principles required different roles or the evaluation of existing principles. In this case, the aforementioned shift happened in the experimental processes.

RQ4: How does the adaption of customer-oriented methods affect efficiency in public cadastral processes?

Based on the research outcome, focusing on customers' needs, like allowing participants to join in the co-creation of the process in a co-operative manner, gives flexibility to the process and reduces complaints that may prolong or complicate the process. The considered methods aim to improve customer-orientation, and the increase in efficiency is due to a shift in the organisational culture of the public sector and a focus on co-operation and co-creation for mutual needs.

The aim is to decrease the waiting periods between the subprocesses and inconsistent statements on the same matter in such subsequent phases of the overall process. Efficiency from the perspective of a public organisation hosting the cadastral procedures is increased due to several major development factors in the experimental cases of land consolidation and subdivision procedures in comparison to the traditional procedures approach:

1. The customer's needs are generally in line with shortening the duration of the procedure.
2. The factors affecting the procedure are agreed on early in the process allowing authorities to avoid unnecessary preparation and the need to constantly re-familiarise themselves with the case.
3. The process less often includes all of the phases previously considered obligatory, such as legal demarcation.
4. The appeal period in procedures is often not needed, since all of the participants agree on the decisions of the procedure.

The phases of public procedures are often agreed on beforehand in mutual co-operation between the participants, and thus not all appeal periods are required. Such a method drastically decreases the duration of the procedure. From the public sector's viewpoint, the increased efficiency of the process promotes the effective and sustainable use of sparse resources.

Co-operation among authorities responsible for different processes is equally important, since the public cadastral procedures are a part of a large chain of processes, mostly for building and land improvement. Especially subdivision, which is a part of public land use processes aiming for building and developing the urban land. Practically, within the public organisations, their suborganisations responsible for different subprocesses should work efficiently together to allow the entire process to become more streamlined. The efficiency increase is based strongly on reaching mutual needs and establishing proactive and interactive channels for customers to co-operate with authorities.

5.2 Summary of the results

The acknowledged challenge of the public sector is to meet citizens' needs with fewer available resources. It is a challenge, since responding to many diverse needs in public processes is not straightforward and not all participants of those processes are clearly defined.

To form a more comprehensive picture of the participants and their needs, several viewpoints and approaches in public cadastral procedures were studied. The research utilised experimental cadastral procedures of land consolidations and subdivisions in Finland as case examples, where various alternative approaches were tested in aiming to improve customer-orientation.

Empirical evidence was acquired from the different processes of rural land consolidation, urban area subdivision and their experimental alternatives by interviewing various key specialists with general experience of the topic and participants of the procedures themselves. The research included reflection on the approaches of certain

European cases, for instance the voluntary approach and alternative roles of authorities leading the procedures.

The study utilised the model of a customer-oriented service system for the public sector as a frame for a customer-oriented approach in specific cases of cadastral procedures. The identification of public organisations' customers, the status of customer-orientation in the organisations, customer needs, service design, and delivery means are essential in this context.

Significantly, several applicable methods for public cadastral procedures were found to show positive results in terms of responding to participants' needs, in this context. Such methods were, for instance, voluntary, co-creative, co-operative and customer-oriented approaches. Overall, this signifies support for a change in the role of the authorities from more distant and formal to more proactive and conversational, allowing participants to have a better chance to discuss their needs and the methods used in the process. Moreover, favour for digital development in cadastral procedures emerged, to allow better and easy access to services. Such changes suggest a re-evaluation of how the public sector perceives and implements the general principles of fairness, justice and transparency and changes the existing ways of work or operational models.

Generally, allowing voluntary, co-operative and co-creative approaches rather than enforcing compulsory elements grants flexibility to the public cadastral procedures benefiting the participants and the public organisation hosting the procedure, the latter by achieving clear efficiency and resource allocation possibilities. The adaptation of the aforementioned approaches signals a shift of roles and principles of the public sector's authorities where awareness of participants and their needs should be investigated. The shift in roles and principles in this sense includes interaction with other authorities since it affects services provided to the customer.

5.3 Research contribution

5.3.1 Theoretical contribution

This dissertation contributes to the field of public cadastral administration and in its efforts is to improve public cadastral procedures by enhancing customer-orientation and efficiency in them. Since customer-orientation can be viewed from multiple perspectives, qualitative case studies provide the necessary insight into the issue. Such perspectives in literature are, for instance, whether customer-orientation acts as a paradoxical element causing political inequalities, or a method of solving the public sector's decades-long challenges in how to effectively provide durable public services for citizens' needs using fewer resources. Customer-orientation can be regarded as a challenging topic and yet a necessary approach

in future public services, where public organisations must find a balance between maintaining their principles and adopting new ones to be able to provide and fulfil citizens' needs. In this sense, to achieve better effectiveness, flexibility, and ability to respond to citizen's needs the dissertation highlights the importance of designing a model for customer-oriented services. Re-evaluating and improving organisational culture in the public organisation is further required for the adaptation of the model, for instance by adapting approaches of co-operation, co-creation, and voluntary participation.

Regarding the definition of 'customer' in public cadastral procedures, this thesis addresses its non-straightforwardness in some cases and the possible variation in customer needs in public processes in general. In cases where customers or their needs vary greatly or are strongly opposed, responding to every customer's needs applying customer-oriented methods requires more extensive or different kind of consideration than in this context. Such cases are, for instance, processes that are imposed or include elements that impose common agendas over some private rights.

This thesis outlines the benefits of customer-orientation in public cadastral procedures and addresses the usable context in which customer-orientation is applied. The case-examples provided in this study are context-related, but provide significant insights into how customer-orientation can be perceived in public processes in general and what benefits it provides for the case-examples. The research additionally describes the differences in public processes and the process connections, for example, between groups of customers: external, internal, non-authoritative and authoritative.

From a juridical perspective, the procedures are connected in legislation, since the processes have a legal basis and usually include hearing citizens before public decisions. In this form, public authorities or authorised representatives conduct the procedures in the countries examined. The procedures are based on legislative principles and are part of the nationwide consideration of a legislative reform in Finland in order to adopt efficient and modern legislation, for example in REFA (544/1995) and LUBA (132/1999).

To improve customer-orientation and efficiency, there are two aspects that can be considered. The first option, utilised in the case examples, is re-evaluation of the current interpretation of the law and principles into modern needs. Undoubtedly, in many cases there are possibilities, in the juridical context, to interpret legislation in an alternative manner, for instance if the context of the original interpretation has changed. For example, the exchange of information between applicants and authorities or different authorities has previously been required to be printed out on paper. This is no longer necessary, since the information is accessible in modern databases without the exchange of specific documents generated in the process. Henceforth, the authorities do not and should not need to require the information in a specific document if they have access to it. (See LUBA 132/1999 chapter 131 or AESCP 13/2003 Chapter 3).

However, secondly, the legislative development may focus on allowing flexibility in the processes, since not all of the phases are necessary in every case. One example is to simplify and generalise the processes in land use and building and real estate legislation (e.g. LUBA 132/1999 and REFA 544/1995) and allow the possibility to join processes or conduct them at the same time (city planning, plot division, subdivision, building permit, etc.). Further development of the aforementioned legislation should allow electronic communication and automated processing of generic decision-making and implementation by exploiting digital tools and databases. As an example, it should be allowed to conduct meetings and the verification of documents electronically and remotely if needed.

Overall, the research outcome can be highlighted from the three dimensions of:

1. Subdivision as an extension of the land use and construction chain, i.e. further horizontal research,
2. Including the customer viewpoint by defining the customer relationship in the public sector, i.e. vertical research,
3. Applying the presented framework to other public processes, i.e. in new contexts (third dimension).

From the horizontal research viewpoint, the subdivision and land consolidation as cadastral procedures are part of a chain of processes for land development, for instance, part of overall urban land use development processes including e.g. city planning and implementation processes. In this viewpoint, achieving better effectiveness and flexibility is most straightforward, since the chained processes are dependent on each other.

In the vertical research viewpoint, there are citizens participating in these processes in various statuses. In this viewpoint, the models for customer-orientation and approaches to respond to them connect the vertical viewpoint into the issue.

The third dimension is applied if the research outcome is reflected in different contexts, e.g. in public service development, education, or healthcare processes. The third viewpoint is in this context unstudied and is connected to generalisation of the research outcome.

5.3.2 Practical contribution

In terms of process development in both land consolidation and subdivision, the voluntary approach of customer-oriented methods and the different roles of the authorities improved the process e.g. in terms of better specify the value desired by the customer and overall duration of the process. Overall, the examination of different participants' statuses gives a better understanding of possible conflicts of interests and their causes. Utilising different methods in experimental cases improved the cadastral procedure, for instance, by

decreasing opposition to process decisions and improving the overall effectiveness of the procedure.

In the development of the subdivision process, there were several changes that affected the duration of the procedure. The most significant results were achieved by dispensing with non-essential processes and shortening the waiting periods for appeal and invitations. Another major change was based on different working orders where the work order was conducted with minimal interruptions or partitioning of the work, thus requiring less time to re-familiarise to the case. Further changes were mostly technical, e.g. improvements of use of the current software.

The duration of the subdivision procedure in Tampere decreased considerably after the implementation and actions of the experimental procedure in 2017 and onwards as seen in Figure 4. The decrease in the duration of the procedure and increased effectiveness due to, for instance, lower workload, allowed public organisation's (municipality) authorities to redistribute resources in a more sustainable manner.

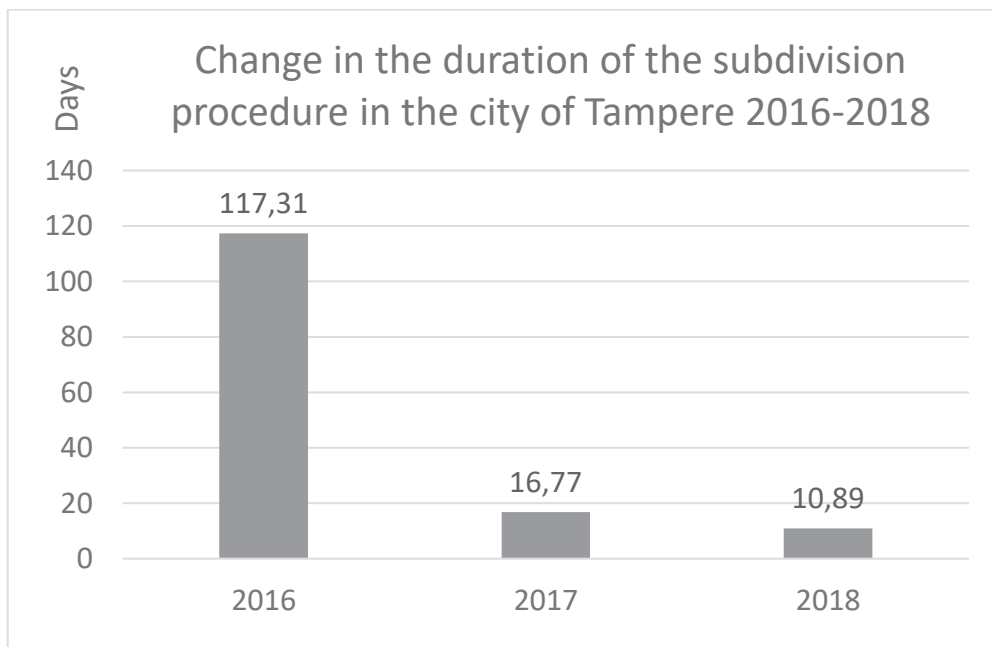


Figure 4. Change in the duration of the subdivision procedure in the city of Tampere in 2016-2018

Implementing a customer-oriented approach (for example voluntary, co-operative and co-creative methods) in the process can generally improve a public organisation's efficiency by creating better results for the participants of the process.

The increased efficiency and internal changes in the organisation itself can be characterised as follows:

1. Adaptation of new values such as customer-orientation and renewing organisational culture
2. Changes in the use of technology such as automatisisation or digitalisation, utilised in both experimental procedures
3. Legislative changes or nationwide principles as strategies for land consolidation, or a nationwide legislative reform and the use of building regulation (LUBA 132/1999) in Finland.

The positive examples in the development of land consolidation and subdivision procedures indicate benefits to the public organisation correspondingly. The adaptation of the customer-oriented principles may allow the public sector organisations to focus more on the overall picture of fulfilling customers' needs rather than partial optimisation.

5.4 Research limitations

The definition of 'customer' is a key component in specifying the limits of the study, since not all customers and their needs can be studied. The definitions described in this context, such as participant, customer and interview respondent, do limit the research and are further explained in this thesis. For instance, the research outcome is based on case examples and their customers. The research approach does not provide an all-inclusive viewpoint for every customer need, but rather brings out various issues emerging from different perspectives.

The selection of the public cadastral procedure defines the limits of the research, since there are multiple types of public processes in the public sector. For instance, the definition of 'customer' is affected by the delivery methods of a process, whether they are applied for by customers or imposed by authorities. The research concentrates on the former, since cadastral procedures, land consolidation and subdivision alike modify the dimensions of land properties and are primarily initiated by land owners' applications. To some extent, there are elements that can be imposed in the aforementioned procedures. This perspective is discussed in Publication III with the adaptation of the voluntary aspect.

In practice therefore, the research focuses on the statuses of landowners, land users or developers. It excludes internal customers and customers that are authorities, but their role in providing services to external customers is briefly implied in the analysis. Additionally, the results of the study may apply to 3D properties or forms of ownership, but are not specifically studied in this context. The major differences are in the easements over or underneath properties.

5.5 Evaluation of the research

The quality of the research can be evaluated through critical conditions related to reliability and validity (see e.g. Yin 2009; Saunders et al. 2009). In this section, the evaluation of the limitations of the thesis is described through these concepts.

Reliability demonstrates the operations of the study to the extent to which the data collection techniques or analysis procedures yield consistent findings, for example on how the data collection procedures can be repeated (Yin 2009; Saunders et al. 2009). To ensure repeatability, the research design is carefully constructed and further described in each publication considering the partial problem. The research data were recorded, transcribed to written form and stored carefully. For instance, each questionnaire or set of question themes is presented in each publication, as are the interview samples and how they were acquired in order to allow other researchers to repeat the study if they so desired. Further description of the interview process allows the reader get an idea of the size, data collection, target groups and criteria of the interview. Considering the whole thesis, the research design is conducted in a similar design manner to fit the overall composition.

When assessing the reliability of the research, it should be considered whether the results are biased by the researcher's actions. To counter this possibility, the research design is discussed, and the outcomes reviewed by co-authors and exposed to peer-reviewers, and various experienced academics and specialists.

The evaluation of validity relates to the findings being about what they appear to be (Saunders et al. 2009). Yin (2009) divides validity into three separate concepts: construct validity and internal and external validity. Construct validity, which is especially challenging in the case of a research study, identifies whether the operational measures for the concepts being studied are correct (Yin 2009; Baskarada 2014). In the data collection phase, Yin (2009) suggests using multiple sources of evidence and establishing a chain of evidence, and having key informants review the case study reports in the composition phase.

In this study, both literary and non-literary material was collected, both numerical and non-quantitative. Multiple interview samples were selected from different perspectives, like from the authorities of state and municipalities and from different fields of expertise, both internationally and nationally, and different sets of customer-groups, all contributing to having multiple sources of evidence. In the data analysis and interpretation, key informant review was used with the help of colleagues and other academics. A consistent chain of evidence was established by systematic data acquisition and analysis methods based on the research problem from which the research conclusions were drawn.

Internal validity, which is concerned with justifying causal relationships, only applies to explanatory and not to descriptive or exploratory case studies (GAO 1990). Yin (2009) explains that the concern of the case study researcher extends to the broader problem of making inferences, for example whether the inference is correct or incorrect. Yin further

describes using different tactics to overcome the problem, such as addressing rival explanations or doing pattern matching.

To minimise the effects of the problem, Yin (2009) stated that each publication covers a detailed discussion of the data analysis and research outcome, for example theming the acquired data. The positioning of the research problem states the nature of the outcome to be a possible answer to the phenomena, a cross-section of a specific viewpoint, rather than just an answer.

Yin (2009) states that external validity is a defining factor in how study findings can be generalised. In principle, to allow external users to understand the research context and generalisation possibilities, each publication describes the research design as carefully as possible and the operative framework in which the research was conducted.

In each publication, for instance, generalisation of a particular set of results to a broader theory is discussed, as Yin (2009) describes. In this sense, a significant limiting factor is how well the samples of each interview represent the broader concept, especially when the interview sample was small. Thereby, the limitations of the interview samples are described for each publication and the criteria used in their selection. The discussion in the publications includes to what extent the outcomes may have context dependency.

Generally, the research utilises triangulation methods and material acquisition as a basis for generalisation to better avoid the effects of particular systematic biases or the limitations of a single method. The use of triangulation is based on the fact that it is difficult for a single research method to obtain a comprehensive picture of the subject (see e.g. Eskola & Suoranta 2005).

From a practical perspective, voluntary participation is more applicable to processes that are applied for in comparison to processes that are imposed, for instance when a public organisation supervises actions such as health or environmental inspections and enforces regulations.

Another practical viewpoint that emerged was the differences between various public organisations in Finland and especially in the international context. Different public sector authorities do utilise various approaches and principles internationally and nationally, so adopting the model merely in the same context is not self-evident.

5.6 Future research needs

Future research needs can be classed under several different themes. The first considers the adaptation of a customer-oriented organisational culture in which the authorities re-evaluate their principles for modern needs as well as ways of working. The second theme covers methods such as co-creation and co-development of services by the public and private sectors. Another theme considers how to adapt a lean process to public processes in general.

Based on research limitations and generalisation, it would be worthwhile to test the adaptation of customer-oriented perspectives in diverse contexts, such as in different public processes, from different viewpoints or in different legal contexts or countries. In particular, the adaptation of customer-orientation and its effects should be studied in processes connected to each other, for example in city planning or building permit processes. These processes are connected to overall municipal land use processes conducted in urban environments as city subdivision. Another viewpoint could be gained from processes based on public sector imposition rather than voluntary application.

For public organisations to maintain sustainable development, improving efficiency and customer satisfaction are essential factors that will affect the direction of public organisations in the coming years and decades. It would therefore be beneficial to study the social, environmental and economic impacts of improving customer-orientation and efficiency in public processes.

Based on the research data, a need has emerged for a cultural change in public organisations and their principles. Employing experimental methods in current processes and composing a new process by adopting experimental methods and principles require extensive remodelling of the accustomed ways of working. The pattern of remodelling, tested in the experimental cases, may be utilised in different contexts or even studied from different scientific viewpoints, for example through social sciences. To implement necessary service delivery methods, public organisations need to discover mechanisms to embrace co-operation and co-creation.

While the Western public sector is constructed on century-long traditions and provides the foundation for many aspects, for instance trustworthy real estate ownership and markets, the system may benefit from remodelling. To gain a relevant impact on public sector efficiency, reforming the legislation, advancing digitalisation and re-evaluating the ways of working are important, and the last-mentioned is especially highlighted in this dissertation.

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Legislation

The Finnish legislation can be accessed on the internet service Finlex.

Accessible: <http://www.finlex.fi/en/>

AESCP	Act on Electronic Services and Communication in the Public Sector (13/2003)
AoT	Act on Tenancy (258/1966).
Land Code	Land Code: Code of Real Estate (540/1995)
LUBA	Land Use and Building Act (132/1999)
REFA	Real Estate Formation Act (554/1995)
YM014:00/2018	Comprehensive reform of the land use and construction legislation, regulatory preparation
APMR	Act on property and mortgage register (353/1987).
DPMR	Degree on property and mortgage register (906/1996).

7 ATTACHMENTS

7.1 Interview form for landowners in Finland (in Finnish and Swedish)

The interview was conducted to evaluate the land lessor's status by interviewing participants of the latest land consolidation procedures.

Kysely maanomistajille 2013 (*Finnish*)

Tämä kysely koskee vain **vuokrattua peltomaata**, ei mm. metsäpalstoja tai vuokraamattomia peltoja.

1. VUOKRAUS, YLEISTÄ
Jättädyittekö tilusjärjestelyn ulkopuolelle,
<input type="checkbox"/> En jättäytynyt, <input type="checkbox"/> Kyllä jättäydyin, jos kyllä, miksi?
Mistä syystä olette antaneet peltoalueitanne vuokralle?
<input type="checkbox"/> Ei omaa tarvetta (Pelto olisi muuten käyttämättömänä)
<input type="checkbox"/> Saan lisätuloja (Kannattavampaa vuokrata kuin itse viljellä)
Muu syy: _____
Kuinka pitkiä ovat solmitut vuokrasopimukset keskimäärin?
<input type="checkbox"/> 1v <input type="checkbox"/> 2v <input type="checkbox"/> 5 v <input type="checkbox"/> 10 v <input type="checkbox"/> 20 v muu: _____ vuotta
Onko vuokralainen lähisukulainen ? (esimerkiksi, onko vuokrattu omalle lapselle)
<input type="checkbox"/> On lähisukulainen <input type="checkbox"/> Ei ole
2. VUOKRAN MÄÄRÄ
Arviolta mihin hintaluokkaan peltonne hehtaarivuokra keskimäärin kuuluu? (Voitte valita useampia)
<input type="checkbox"/> alle 100 € <input type="checkbox"/> 100-200 € <input type="checkbox"/> 201-300 € <input type="checkbox"/> 301-400 € <input type="checkbox"/> 401-500 € <input type="checkbox"/> yli 500 €

Jos peltopalstoillanne on eri vuokra, mikä on syy tälle vaihtelulle?

Minkä kokoisia ja kuinka monta vuokrapalstaa teillä oli ennen tilusjärjestelyä? (täyttäkää vain sopivat kohdat)

alle 1 ha ___ kpl 1-2 ha ___ kpl 2-3 ha ___kpl 3-5 ha ___ kpl yli 5 ha ___ kpl

Minkä kokoisia ja kuinka monta vuokrapalstaa teillä oli tilusjärjestelyn jälkeen? (täyttäkää vain sopivat kohdat)

alle 1 ha ___ kpl 1-2 ha ___ kpl 2-3 ha ___kpl 3-5 ha ___ kpl yli 5 ha ___ kpl

3. PELLON MYYNTI

Myyttekö vuokralle antamanne pellot tilusjärjestelyn aikana?

Olen myynyt

En ole myynyt

Miksi päädyitte tähän ratkaisuun?

4. TILUSJÄRJESTELYN AIKAISET VAIHEET

Olitteko mukana tilusjärjestelyssä:

Omasta tahdostanne

Vasten tahtoaanne

Ei ollut merkitystä

Miten teidän etujanne on huomioitu mielestänne tilusjärjestelyn eri vaiheissa?

Ympyröikää sopiva numero alla olevalta asteikolta, jossa 1 = HEIKOSTI, ja 10 = KIITETTÄVÄSTI

Hankkeen aloitus, (mm. ensitoimet tilusjärjestelyn aloittamiseksi, yhteydenotto, kokouskutsut, yms.)

1 2 3 4 5 6 7 8 9 10

Kokoukset

1 2 3 4 5 6 7 8 9 10

Jakosuunnitelma (peltopalstojen uudelleenjärjestelemiseksi tehty suunnitelma)

1 2 3 4 5 6 7 8 9 10

Korvaukset ja maksut (tasapuolisuus)

1 2 3 4 5 6 7 8 9 10

Teiden ja ojien rakentaminen

1 2 3 4 5 6 7 8 9 10

Yleismielipide tilusjärjestelyn aikaisista toimintatavoista - (mm. vuorovaikutuksen sujuvuus?)

1 2 3 4 5 6 7 8 9 10

Keiden hyöty tulisi tilusjärjestelyä (uutta peltopalstajaotusta) suunnitellessa laittaa esisijalle:

Vuokranantajan Vuokralaisen Molempien, tasapuolisesti,

Lisätietoja: _____

5. TILUSJÄRJESTELYN JÄLKEEN

Ovatko tilusjärjestelystä teille maksettavaksi tulleet kustannukset oikeassa suhteessa siitä saamaanne hyötyyn?

Ympyröikää sopiva numero alla olevalta asteikolta, jossa 1 = EI (järjestely oli kallis), ja 10 = KYLLÄ (edullinen)

1 2 3 4 5 6 7 8 9 10

Kuinka tyytyväinen olette tilusjärjestelyn lopulliseen tulokseen omalla kohdallanne?

Ympyröikää sopiva numero alla olevalta asteikolta, jossa 1 = TYYTYMÄTÖN, ja 10 = TYYTYVÄINEN

1 2 3 4 5 6 7 8 9 10

6. TILUSJÄRJESTELYN VAIKUTUKSET VUOKRAUKSEEN

Onko pellon vuokra alentunut tai kasvanut?

Alentunut merkittävästi

Alentunut hieman

Ei vaikutusta

Noussut hieman

Noussut merkittävästi

Onko pellonvuokrauksen kysyntä kasvanut vai vähentynyt?

Vähentynyt merkittävästi

Vähentynyt

Ei vaikutusta

Kasvanut

Kasvanut merkittävästi

Jos vuokrasuhde on päättynyt tilusjärjestelyn jälkeen, onko uusia vuokrasopimuksia tehty?

Kyllä on tehty

Ei ole tehty

Ovatko tilusjärjestelyn jälkeen tehdyt vuokrasopimukset teidän etujenne kannalta:

Parempia

Entisen kaltaisia

Huonompia

7. PERUSPARANNUKSET JA KUSTANNUKSET

Oletteko sopineet, kelle pellon mahdolliset parannustyöt kustannuksineen kuuluvat ?

Teille Vuokralaiselle Molemmille (jos näin, missä suhteessa teille) _____%

Lisätietoja _____

Kuinka hyvin saatte katettua tilusjärjestelyn kustannukset peltopalstojenne vuokratuloilla?

Ympyröikää sopiva numero alla olevalta asteikolta, jossa 1 = HEIKOSTI, ja 10 = KIITETTÄVÄSTI

1 2 3 4 5 6 7 8 9 10

8. VUOKRALAISEN ASEMA

Miten tilusjärjestely on vaikuttanut teidän mielestänne vuokralaisen asemaan?

Ympyröikää sopiva numero alla olevalta asteikolta, jossa 1 = HEIKENTYNYT, ja 10 = PARANTUNUT

1 2 3 4 5 6 7 8 9 10

Mistä syystä arvelette tämän johtuvan?

9. MUITA KOMMENTTEJA

Onko teillä muuta kommentoitavaa tilusjärjestelytoimista, liittyen teidän asemaanne?

(voitte jatkaa kirjoittamista myös toiselle puolelle paperia)

Fråga till markägare 2013 (Swedish)

Detta frågeformulär gäller endast arrenderad åkermark, inte skog eller tomter mm.

ARRENDERING, ALLMÄNT

Överlämnade Ni utanför ägoregleringen?

- Nej Ja, om ja, varför?

Varför har Ni arrenderat ut er mark?

- Inget behov (Åkrarna skulle annars lämna obrukade)
 Extra inkomst (Det är lönsammare att arrendera ut än att odla själv.)

Annan orsak: _____

Hur långa arrendeavtal skriver ni i genomsnitt?

- 1 år 2 år 5 år 10 år 20 år andra: _____ år

Är arrendatorn en nära släkting? (T.ex. arrenderat åt eget barn)

- Arrendatorn är min nära släkting. Arrendatorn är inte min nära släkting.

ARRENDE (BELOPP)

Till vilket pris har ni arrenderat ut era åkrar i genomsnitt? (Ni kan välja flera.)

- mindre än 100 € 100-200 € 201-300 € 301-400 € 401-500 € över 500 €

Om Era åkrar arrenderas ut till olika pris, vilken är anledningen till denna variation?

Hur stora och hur många utarrenderade åkrar hade Ni innan ägoreglering? (Fyll i)

mindre än 1 ha ___ st. 1-2 ha ___ st. 2-3 ha ___st. 3-5 ha ___ st. över5 ha ___ st.

Hur stora och hur många utarrenderade åkrar hade Ni efter ägoreglering? (Fyll i)

mindre än 1 ha ___ st. 1-2 ha ___ st. 2-3 ha ___st. 3-5 ha ___ st. över 5 ha ___ st.

ÅKERFÖRSÄLJNING

Sälde Ni utarrenderade åkrar under ägoregleringen?

Ja, jag sålde.

Nej, jag sålde inte.

Hur kom ni till den slutsatsen?

ÄGOREGLERINGENS SKEDEN

Var Ni inblandad i ägoreglering:

Frivilligt?

Mot Er vilja?

Tog inte ställning

Hur har Era intressen blivit beaktade genom de olika skedena i ägoreglering?

Ringa in lämpligt svar från följande skala, där 1 = DÅLIG, och 10 = BRA

a) Inledning av projektet (de första stegen i att starta ägoregleringen, kontakter, möteskallelser etc.)

1 2 3 4 5 6 7 8 9 10

Möten

1 2 3 4 5 6 7 8 9 10

Skiftesplaneringen (skifteplaneringsskedet) plan till arrangering av åkrar

1 2 3 4 5 6 7 8 9 10

Ersättningar och betalningar (opartiskhet)

1 2 3 4 5 6 7 8 9 10

Byggande av vägar och utförande av torrlägningsprojekt

1 2 3 4 5 6 7 8 9 10

Allmän åsikt om förfaringssättet vid ägoreglering - (till exempel, hur har kontakten med lantmäteriverket fungerat?)

1 2 3 4 5 6 7 8 9 10

Vem skall man prioritera när man planerar den nya skiftesplacering:

Markägaren

Arrendatorn

Båda, jämnt

Tilläggsuppgift: _____

EFTER ÄGOREGLERINGEN

Är kostnaderna för ägoregleringen i förhållande till nyttan ni har fått?

Ringa in lämpligt svar från följande skala, där 1 = NEJ (dyr), ja 10 = JA (förmånlig)

1 2 3 4 5 6 7 8 9 10

Hur nöjd är Ni med det slutliga resultatet av ägoregleringen?

Ringa in lämpligt svar från följande skala, där 1 = MISSNÖJD, ja 10 = NÖJD

1 2 3 4 5 6 7 8 9 10

ÄGOREGLERINGENS PÅVERKAN PÅ ARRENDERINGEN

Har arrendet (€) ökat eller minskat?

Minskat avsevärt

Minskade lite

Ingen ändring

Ökat lite

Ökat betydligt

Har efterfrågan på arrendemark ökat eller minskat? (antal personer)

Minskat avsevärt

Minskade lite

Ingen ändring

Ökat lite

Ökat betydligt

Om arrendekontraktet upphörde efter ägoregleringen, fick Ni skriva nya kontrakt?

Ja, det har gjort

Nej, det har inte gjort

Hur är arrendekontrakten som blivit gjorda efter ägoregleringen jämfört med före:

Bättre

Ingen ändring

Sämre

GRUNDFÖRBÄTTRINGAR OCH KOSTNADER

Har Ni ingått avtal om vem som ska ta hand om förbättringskostnaderna från ägoregleringen?

Ni Arrendatorn Bådadera (Om så, vilket är Er procentuella andel) _____%

Tilläggsuppgifter:

Hur bra kan Ni täcka era kostnader av ägoreglering med inkomsterna från arrendet?

Ringa in lämpligt svar från följande skala, där 1 = DÅLIGT, och 10 = BRA

1 2 3 4 5 6 7 8 9 10

ARRENDATORNS STÄLLNING

Hur har ägoregleringen påverkat arrendatorns ställning enligt Er åsikt?

Ringa in lämpligt svar från följande skala där 1 = FÖRSVAGAT, ja 10 = FÖRBÄTTRAT

1 2 3 4 5 6 7 8 9 10

Varför tror Ni att det är så?

ANDRA KOMMENTER

Har Ni andra kommentarer om ägoregleringen eller Er ställning i ägoregleringen?

(Ni kan fortsätta att skriva på den andra sidan av pappret)

Tack för Er tid!

Om Ni vill delta i dragning, fyll i Era kontaktuppgifter i bilagan. .

7.2 Interview form for land consolidation specialist in Finland

Kysely tilusjärjestelijöille 28.8.2013 – Kysely toteutettiin sähköisenä Webropol ympäris-tössä. tässä liitteessä on listaus sähköisessä kyselyssä olleista kysymyksistä sekä kysymysten vastausvaihtoehdoista, jos se ei ole ollut avoin.

Vastaajan tiedot *Etunimi, Sukunimi, Tehtäväkuva, Toimipiste

1. Maanvuokrauksen tilanne tilusjärjestelyalueilla

Arvioikaa kuinka monta prosenttia viljelysmaan käyttöyksiköistä on vuokrattuna?

Entä viljelysmaan pinta-alasta?

Mikä on mielestänne keskimääräisen vuokrasopimuksen kesto?

1 v, 2 v, 3 v, 5 v, 10 v, 20 v, muu

Arvioikaa kuinka monta prosenttia sopimuksista on suullisia?

alle 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, yli 95

Muuta maanvuokrauksesta TJ alueella?

2. TARVESELVITYS

Jääkö vuokranantajien peltoja teidän mielestänne enemmän pois kuin muiden peltoja, siirryttäessä tarveselvitysvaiheesta tilusjärjestelytoimitukseen? Ei, Kyllä, miksi

Arvioikaa kuinka suuri osa vuokranantajista (%) suhtautuu tilusjärjestelyyn seuraavasti:

Kielteisesti:

alle 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, yli 95

Hieman kielteisesti:

alle 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, yli 95

Neutraalisti:

alle 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, yli 95

Hieman myönteisesti:

alle 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, yli 95

Myönteisesti:

alle 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, yli 95

Lisätietoja:

3. TILUSJÄRJESTELYTOIMITUS

Arvioikaa kuinka suuri osa vuokranantajista (%) on ollut TJ:n aikana:

Hyvin passiivinen:

alle 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, yli 95

Hieman aktiivinen:

alle 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, yli 95

Hyvin aktiivinen

alle 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, yli 95

Lisätietoja:

Miten vuokranantajan asema on huomioitu TJ:n eri vaiheiden aikana?

Tarveselvitys

Aloituspäätös

Jakosuunnitelma

Tilikorvaukset

Kustannusten osittelu

Miten tämä eroaa vuokralaisen aseman huomioimisesta?

Minkälaista palautetta vuokranantajilta on tullut tilusjärjestelyn eri vaiheissa

Esimerkiksi: Tarveselvitys, aloituspäätös, jakosuunnitelma, tilikorvaukset ja kustannusten osittelu

4. VUOKRANANTAJAN JA VUOKRALAISEN ASEMA

Keiden hyöty tulisi tilusjärjestelyä (uutta peltopalstajaotusta) suunnitellessa laittaa etusijalle:

Vuokranantajan, Vuokralaisen, Molempien, tasapuolisesti, Lisätietoja:

Jos vuokralaisella on myös omistuspeltoa alueella, onko tällä ollut vaikutusta TJ:n lopputulokseen? Ei,

Kyllä, Muuta:

Jos vuokralaisen ja maanomistajan toiveet ovat ristiriitaiset, kumpaa on painotettu enemmän?

Vuokralaisen, Maanomistajan

Miksi näin?

Onko vuokra-ajalla ollut vaikutusta tähän painotukseen ?

Ei, Kyllä, kuinka pitkällä ajalla:

Mitkä muut seikat ovat vaikuttaneet painotukseen ?

5. TOIMITUSKUSTANNUSTEN JAKAUTUMINEN vuokranantajan ja vuokralaisen kesken

Arvioikaa monessako tapauksessa tai miten yleistä on, että vuokralainen ja vuokranantaja ovat sopineet, että: (valitkaa sopiva prosentuaalinen osuus)

Vuokralainen osallistuu suoraan perusparannushankkeiden maksamiseen?
alle 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, yli 95

Vuokralainen osallistuu suoraan toimitusmaksun maksamiseen?
alle 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, yli 95

Vuokralainen ja vuokranantaja ovat sopineet pellon vuokrahinnan korottamisesta perusparannushankkeiden tai toimituskustannuksen vuoksi?
alle 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, yli 95

Vuokranantaja vastaavasti huomioi vuokralaisen tekemän peltojen kunnostamisen vuokrahinnassa vuokraa alentamalla?
alle 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, yli 95

Monessako tapauksessa tai miten yleistä on, että:
alle 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, yli 95

Vuokralainen osallistuu pellonkunnostustöihin tilusmuutosten vuoksi?
alle 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, yli 95

Entä kuinka usein käy niin, että nämä asiat jäävät sopimatta?
alle 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, yli 95

Kuinka yleistä on, että näistä tapauksista aiheutuu väärinkäsityksiä tai välien huonontumisia?
alle 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, yli 95

Mahdollinen tarkennus kysymyksiin:

Onko tilusjärjestelyillä ollut mielestänne vaikutusta vuokrasopimukseen (esim. onko irtisanottu)? Ei, Kyllä, Lisätietoja:

Onko vuokrasopimuksia järjestelty, onko esimerkiksi sopimus siirretty toiselle tai katkaistu? (KML 86 §)
? Ei, Kyllä, Lisätietoja:

Muuta aiheeseen liittyvää:

7.3 Interview form for land consolidation specialists (international)

Survey: Lessor's status in land consolidation to foreign land consolidation specialists

Dear [land consolidation specialist]

If I may, I'd like to ask some questions considering land consolidation process.

I'm interested to know how common land lease (on cultivated areas) is in country/[area] and how the lease contracts are treated on land consolidation; especially I'm interested in lessor's status.

In Finland the land lease is relatively common in agricultural areas. Approximately 30-45 % of cultivated lands are leased, additionally the rent is not very high. This proportion applies also to land consolidation areas. Therefore it is worthwhile to study how the lessors generally feel about the process and are there needs to improve their status. And if there is need, what are the methods for improving their status?

I wrote some questions as guideline:

- How do you handle the lessor's interests in land consolidation?
- How common is land lease?
- How long is the average land lease period? Are contracts renewed?
- Average rent of the land? (E.g. per hectare)
- Whose benefits are more important, the land owner's or land user's?
- What kind of feedback you have had from the lessors?
- Who'll pay the costs of the land consolidation?

(E.g. landowner, land user, the state, or are costs shared, ...)

- What is the general opinion of the lessors, after land consolidation?

(E.g. positive, negative, suspicious, open-minded, ...)

- Do lessors want to drop out of the land consolidation more often than other participants?

- As in comparison how are leaseholders (land users) treated?

And lastly:

- Are there any ongoing or done researches of topic of my thesis or possibly some legal decisions?

Please answer before 15.4.2015, if possible.

Thank you for your time and valuable opinions!

Also, feel free to ask any questions from me.

Sincerely yours

Kimmo Sulonen

M.Sc. (Tech.). Real estate planning: Aalto University, Helsinki

7.4 Interview themes for land consolidation specialists (Finland)

The interview was conducted to evaluate how used approaches affected on Finnish land consolidation procedures. The interview included key land consolidation specialists involved in experimental land consolidation projects.

The pre-defined themes that led the discussion were:

- Voluntary participation of land consolidation
- The roles of land consolidation
- Authorities conduct and lead the land consolidation process
- The initiative from landowners and other stakeholders
- Active involvement of landowners and other stakeholders, e.g., co-operation and co-creation of the reallocation plan and launching workshops
- Project area and external lands
- Land banking and land exchange systems
- Land consolidation in the local development context
- Aims of land consolidation and division of costs

7.5 Interview themes for land owners and their representatives (Finland)

The interview was conducted to evaluate how used methods affected the customer-orientation by interviewing cadastral surveyors from different public authorities (both national and municipal) and customers operating in domains of different authorities (both national and municipal). The participants for the interview are acquired from contacts of conducted procedures (cadastral domain of the municipality, the city of Tampere, Finland).

Themes of the questionnaire that led the discussion

Details of the respondent & Short history of working experience

Customer needs in subdivision procedure

Customer-orientation in traditional subdivision procedure

Customer-orientation in experimental subdivision procedure

- Initial customer contact

- Concentrating on subdivision – e.g. No demarcation of borders.

- Concentrate on improving duration of the procedure e.g. no formal convening or appeal period

Future development aspects and methods of customer-orientation

PUBLICATIONS

PUBLICATION

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Lessor's Status in Land Consolidation in Finland

Sulonen, K., Kotilainen, S.

Nordic Journal of Surveying and Real Estate Research. Vol 11 / 2016.

<https://journal.fi/njs/article/view/49390>

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Nordic Journal of Surveying and Real Estate Research 11:1 (2016) 18–36

submitted on 2 February, 2015

revised on 23 April, 2015

accepted on 5 May, 2015

Lessor's Status in Land Consolidation in Finland

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Abstract. *The purpose of this research is to investigate lessor's status in land consolidation procedures in Finland. This status was investigated from the functional and juridical points of view. The research was based on survey made for lessors and supporting surveys made for land consolidation experts. The main purpose of the surveys was to find out how the lessors themselves experienced their status.*

According to the results the lessors' experiences in land consolidation (LC) phases are mostly moderate or slightly positive but not wholly positive. This is by the lessors' concern that land consolidation causes additional and unnecessary costs for them. Experiences of costs, such as cost distribution and how well the rents of arable lands cover the costs of land consolidation are most negative among lessors. The most positive experiences are from road and ditch improvements. However the experience varies slightly between regions.

Altogether, the status of lessor may be improved in the future by focusing to informing and cost-sharing. The informing of the lessors can be information of different phases of land consolidation along with the lessor's opportunities to influence on those phases. Sharing the costs with the leaseholder requires that lease periods are longer than a few years.

Keywords. *Lessor, landowner, leaseholder, land consolidation, survey study*

1 Introduction

1.1 Agricultural land lease in Finland

Leasing cultivated land has increased greatly in Finland since the 1960s. The amount of leased farmland has increased particularly after 1995 when Finland joined the European Union (EU) and began to implement the Union's common agricultural policy. (Tike, 2010, p.31; Niemi & Alshedt 2011, pp. 14–15.)

Currently 35 percent of the total area used for cultivating is leased¹ (Tike 2010, p.31). The great amount of leased land is not a completely new in Finland. The leasing was common on agricultural areas on the beginning of 20th century before it decreased greatly due to a major legislative reform which allowed leaseholders to purchase the land they leased (Haataja, 1934, pp. 5–8). These leaseholders were known as crofters and very often they were not in a good position comparing to lessors (Jutikkala 1942, pp. 587–589). The setup between lessor and leaseholder is different these days and the leaseholder's status has improved. However lessor's status is often left unstudied. Perhaps there is a general opinion in Finland that the status of a lessor is still highly guaranteed and need not to be reach object. However when more than third of the cultivated areas are leased it means that there are many lessors involved in land consolidations (LC).

1.2 Objects of the study

The purpose of this study is to investigate if there is any need for improvement in lessor's status or treatment in land consolidation and if so, what are the factors that improve their status? This research problem is explained with through three more detailed questions.

1. What are current processes in land consolidation from the lessor's point of view?
2. How do lessors experience different phases of the land consolidation process and results of land consolidation, and how is lessors' status taken into account in those phases?
3. Is it possible to develop the land consolidation process in such a manner that it is more attractive from the lessor's point of view and if so, which factors should be improved? In other words, what is the operation model for land consolidation which serves the lessor's interests in the most suitable manner?

The research is based on survey made for lessors and supporting survey. The supporting survey is for land consolidation experts who take part of land consolidation processes. The purpose of the surveys is to find out what is the lessor's experience of land consolidation and their status in it.

2 Concepts and methods

2.1 General concepts and methods

The key concepts which are used in this article are presented briefly in this chapter. The land consolidation in Finland is an official procedure, whose purpose is to improve the current use of properties and property division by reallocating land parcels. The reallocation is done without changing the ownership of properties as much as possible. Additionally, in land consolidation the road network and ditches for draining excess water can be improved. The prerequisites of land

¹ The statistics are from 2008. Additionally the statistics indicate that leased land area has increased three percent per each year between 2000 and 2008. (Tike 2010, p.31.)

consolidation are defined in the Real Estate Formation Act (554/1995 later REFA) chapter 9 section 67. (Vitikainen 2003 p. 1; NLS 2014 section 8; REFA 554/1995 section 67.)

The word “lessor” means a landowner, who rents out the land to someone in a land consolidation area. The word “leaseholder” is correspondingly the one who uses these leased out lands. The word “specialists” is used to describe those who will participate or who have participated in land consolidation processes as a representative of the authorities or the state in National Land Survey of Finland (NLS).

The study is mainly based on qualitative research methods. The quantitative methods were used as an aid for the qualitative methods, e.g. calculating averages of certain factors such as lessors' age, total leased area etc. The use of both qualitative and quantitative methods improved the reliability of the research. One of the qualitative methods in use was content analysis. This method was used to analyse the literal sources and the results of the survey, and find out main topics from the data. Therefore, the mainline of this research is the empirical research to collect empirical evidence, the survey data. The empirical evidence and collection methods such as surveys are presented in more detail in chapter 4.

2.2 Focus of the article

The main focus of land consolidations in Finland is on agricultural areas. There are cases where land consolidation is done in forestry areas and it is possible that these kinds of land consolidations will have more value in the future. (MMM 2015 pp. 10–14.) Therefore, this article concentrates on land lease on land consolidation areas on agricultural lands. Lease in urban areas is not included in this article. Moreover, there are limitations in the examined land consolidations. The cases had to be conducted and registered during the last 15 years. The limitations are to ensure that the land consolidation processes were comparable with each other.

2.3 Legislative concept of the lease

At the time of the Finnish crofter issue, Kyösti Haataja (1921) defined the concept of land lease. The definition was as follows: *The private land lease is a contract based on a legal relationship where the lessor assigns property to the leaseholder's possession for a defined period of time and with the payment of compensation* (Haataja 1921. p. 253). Furthermore, the lease must include the payment of compensation to the lessor, otherwise it is a loan (Saarnilehto 2006, p. 2).

The basis of this century old concept is still in use, but during the following decades the concept has been specified further. The format and validity times of contracts are currently regulated (258/1966 later AoT). The legislation does not recognise long-term oral agricultural land lease contracts, where as oral contracts were a common form of contract especially in the late 19th and early 20th centuries (Haataja 1934 p. 44; AoT 258/1966 section 3).

The lease in Finland should be applied for the registration if the lease right is transferable to a third party without hearing the titleholder and if the lease contract allows building in the area or there are buildings in the area that belongs the

leaseholder. (CRE 540/1995 chapter 14 sections 1–2). However, this option is more commonly used properties in urban areas and usually is not the case in rural areas. Additionally, lands can be leased, if based for agricultural use, up to 20 years and up to 25 years if there are buildings suitable for agricultural use². (AoT 258/1966 sections 57 and 71). The maximum lease period in either case is shorter than the lease of urban plots, between 30 to 100 years. (AoT sections 28 and 73). Despite the legislative possibilities, contracts are made for five years on the average. (Sulonen 2014 p. 42–43). Therefore the leases in agricultural areas are not as strictly regulated than lease in urban areas and do not usually require e.g. registration of the right. These rules allow leases on agricultural lands to be leased more flexible, but can cause uncertainty of the continuation of the lease.

3 Land lease in agricultural areas of Finland

3.1 *The significance of land lease in Finland*

The crofter issue was a major political problem in the beginning of the 20th century in Finland. The stability of the lease contract was in favour of lessors rather than crofters; and they were mostly oral contracts. Due to lack of written contracts and incomplete land lease legislation the lessor was able to unilaterally end the contract in many cases, and therefore it left the crofters at the lessor's mercy. (Jutikkala 1942, pp. 587–592.) This implied that in such cases the crofter's status was poor if the crofter's whole live hood depended on cultivating land.

Due to uneven setup between lessors and crofters the situation needed legislative changes that actualised especially after the independence of Finland in 1917. The long codification process led to new laws and changes of laws³, such as the crofter act (135/1918 later LVL), where crofters were able to take into possession their formerly leased lands. (LVL 135/1918; Lähde 2007, pp. 85–86.) This was one of the major land reforms in Finland. The proportion of leaseholders of all farmers decreased from 60% to 17% shortly after the reform in the 20th century (Lähde 2007, pp. 85–86; Haataja 1935 pp. 5–8). Compared to the rest of Europe, the land lease remained relatively strong due to the high price of land (Jutikkala 1942, p. 195).⁴

The proportion of leased land in Finland has increased in the past several decades and especially after 1995 when Finland joined the EU. This trend seems to continue. The increase is caused by the development where the number of farms

² The legislation allows lease contracts up to 20 years if the fields are leased to agricultural use and do not contain suitable structures for agricultural use (AoT section 71) and if leased under two years contracts can be made orally (AoT section 3). If the lease includes structures needed in agricultural use and living purposes the contracts can be made up to 25 years (AoT sections 57).

³ The act "Laki vuokra-alueiden lunastamisesta" (135/1918) is often called in Finland "Torpparilaki", which loosely translates as the Crofter Act. Additionally the codification included a special law for crofters in parish' lands (LVLEL 73/1921) and modification of Expropriation Act (603/1977).

⁴ Professor Eino Jutikkala has written about the Crofter problem in English in his Scandinavian Economic History Review Volume 10, Issue 1, 1962. Origin and rise of the crofter problem in Finland pages 78–83.

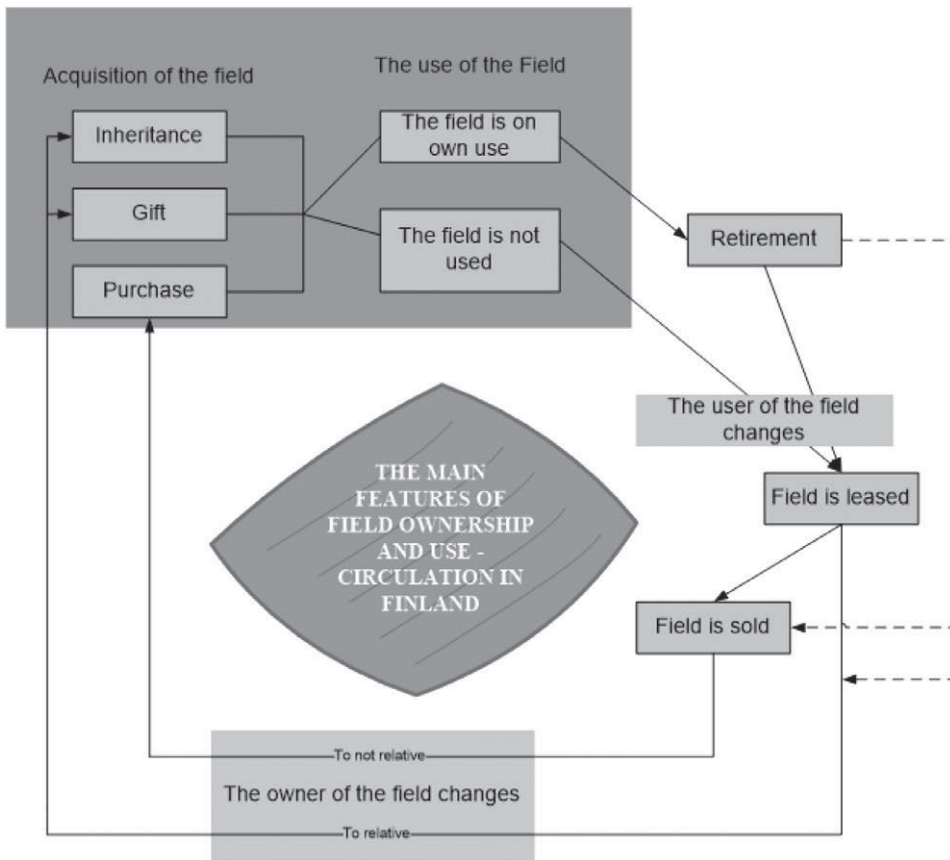


Figure 1. The main features of field circulation in Finland (lease).

is decreasing and the size of a farm is increasing. (Niemi & Alshtedt 2011, p. 66; Tike 2010, p. 34; Vitikainen 2003, p.7.) Approximately two thirds of the increase is due to the leasing of land (Niemi & Alshtedt 2011, p.15). The land owners do not like to sell their fields (Myyrä 2009, pp. 17, 22–24).

The leased fields were usually offered to lease markets after the retirement of the active farmer.⁵ The lease is part of field circulation from owner to other. The circulation is shown in Figure 1 where the figure depicts how land owners have got their land (inherited, as gift or by purchasing) and how they use it (own use, not own use and leasing). At some point the farmer retires and either leases the field or gives the ownership away⁶.

⁵ This phenomenon was strongly visible on surveyed land consolidation areas.

⁶ The option where the next generation continues the farming activity immediately after the retirement is presented with a dashed line where the land lease is skipped or the lease period is temporary and short.

3.2 The problems of land lease to land division

The land lease is considered as one form of land use in land consolidation. However, the lease or actions due to lease might lead into fragmentation of land division and therefore causing the need of land consolidations.

The historical development of land division in rural areas of Western Finland has led into situation where land division is fragmented. The crofter issue was one factor that affected the issue in the 20th century when legislation allowed tens of thousands of crofters to form new properties (Lähde 2007, pp. 85–86). Later amount of properties in rural areas has increased even more from 1960 up to 2010 decade (NLS 2013a, p. 11).

The larger farms have been acquiring farmland from smaller farms after Finland joined the EU⁷ (Vitikainen 2003 p.7). Approximately two of third of these acquisitions have been done by leasing land (Niemi & Alshtedt 2011, p.15). When the land is offered for lease the field parcel might not end up to the best possible user who would benefit the most from it. This can happen due to active competition of cultivatable lands among the farmers who will try to increase their production capacity. (Vitikainen 2003 p. 8.)

Väinö Ylikangas has estimated that the proportion of leased land is lowest in areas where property division is best (Ylikangas 2004 p. 11). One of the reasons might be that the sizes of leased parcels tend to be small on average (OK Note 2013b). Myyrä and Peltola (2006) present that if the size of field parcel is three hectares or less the size of the parcel causes a clear disadvantage to the user (Myyrä & Peltola 2006 p. 41). The phenomenon is visible in field market prices in Finland in 2013 where the price per hectare of sold parcels is the higher, the larger the parcel size is. The price per hectare increases up to 10 hectare parcels. (NLS 2013b, pp. 42–43.) Therefore, it is possible that land lease prevents the defragmentation of land or fragmented land division can cause land to be leased.

Additionally, the leaseholders usually threat the cultivated lands less properly than those farmers who own their land. Leaseholders' willingness to improve the land is related to that how probable the continuation of current lease contract is. (Myyrä 2009, pp. 17, 20–22.)

3.3 Lease in land consolidation

The National Land Survey (NLS) is responsible for land consolidations in Finland. The NLS occasionally conducts prior investigations of suitable areas. The investigation is conducted to determine whether or not to commence the actual land consolidation procedure⁸ and if state funds are available to the current case. (UjTL 24/1981; NLS 2014, section 8.) It is notable that the purpose of the land consolidation is common benefit and can be done within certain limitations if it causes some hindrance (REFA 554/1995 section 67). The land consolidation

⁷ Finland joined European Union in 1995.

⁸ The actual procedure consists of a partitioning plan, taking into possession and meetings where the authorities and parties can interact. Usually procedures have more than one meeting, e.g. the compensations and costs are usually divided and designated to the parties before the final meeting. The procedure can in some cases be disrupted or suspended without effects. (NLS 2014, section 8.)

can be executed without participant consent if needed (NLS 2014, section 8). However the possible hindrance should not be unreasonable to anyone (REFA 554/1995 section 67 subsection 2).

The law (REFA 554/1995) states that the leased area shall be amended to pertain to the lessors' new parcels, unless the change causes considerable hindrance to the leaseholder (REFA 554/1995, 86§). The length of the contract and possible costs for transferring the leaseholder's right determines how likely this is done (Hyvönen 2001, pp. 169–170). In practice the leaseholder's right to use lessor's the land is transferred to the lessor's new land parcels whenever possible without major additional costs or problems.

Distributing and dividing the costs of the consolidation between the lessors and leaseholders or only to one of the parties is a challenge. In some cases when the needs of the both participants are similar they might make a contract on how to divide them (Ylikangas 2004. p 22).

4 Results

4.1 Design and preparatory works of survey

The empirical evidence of this research was collected by surveys along with interviews by phone. The most central survey was an enquiry and sent to lessors who had participated in ten selected land consolidations in key land consolidations areas in Ostrobothnia area⁹, Finland. This survey included an additional interview for those who submitted their contact information on the answer sheet. The second survey was also an enquiry and sent to NSL land consolidation specialists¹⁰ working with land consolidation areas. The enquiries to lessors were conducted by traditional mail and the specialist survey through a web-based form in 2013.

The lessor survey had eight main sections and each of them had several sub-questions. The specialist survey was similarly divided, but it was designed from the viewpoint of authorities. One section of the questions was to inquire background data such as the rent, length of lease contracts, why the fields were rented, costs of the consolidation, etc. That was not directly related to land consolidation. The background data was inquired as aid for interpreting the experience and its effects. The other questions measured lessors' experience of land consolidation such as how they experienced different parts of the land consolidation procedure or its benefits afterwards. Most of the questions were form-based structured questions with pre-defined choices. On the surveys there were open¹¹ questions to elaborate certain answers. Also on the lessor survey the last question was open

⁹ The Ostrobothnia area is located in west coast of Finland and covers the regions of Northern, Southern, Central Ostrobothnia and Ostrobothnia. The survey was conducted in Finnish and Swedish according the major language of each region.

¹⁰ The second survey was sent to all such specialists in Finland who were on the NSL mailing list for cadastral surveyors working with land consolidations and project leaders.

¹¹ Open in this context indicates questions where there were no pre-defined answer choices.

where the participant could answer anything related to the status of lessors in land consolidations. The questions were based on hypotheses¹².

There were two criteria used during the selection of land consolidations as objects of the lessors' survey. These land consolidations had to have been constructed between the years 2000 and 2013. This means the land consolidations had to be relatively new and they had to be concluded before the research began. These consolidations were also picked from different regions in key land consolidation areas (Ostrobothnia) in Finland as equally as possible. The surveys were conducted in the summer of 2013 (from June to October).¹³

There was a notable fact found when listing participants to the survey. Almost one of third of the participants was classified as heirs. In heirs the person responsible for property management is more difficult to define. However, there was a person listed in archived land consolidation data in two out of three cases. This data was retrieved from the NLS archives. The remaining cases, where there was no assigned person to be responsible the eldest child or widow was selected as participant¹⁴.

The reason why so many lessors in the selected areas were heirs is found in demographics. The average age of the farmers in Finland in 2011 was 51,4 years (Niemi & Alshtedt 2011 p. 15). This is approximately ten years higher than average age of labour in Finland in 2007 (Myrskylä 2009). The average age of lessors in selected land consolidation areas in different regions of Finland was 65,5 years. This is almost 15 years higher than the average age of farmers and 25 years higher than the average age of labour. The difference between average ages indicates that most lessors in Finland are retired farmers and some are the heirs of such farmers. (Sulonen 2014 p. 30.)

4.2 Basic results of the enquiries

The lessors were enquired how they experienced different land consolidation phases. The scale of one to ten was used to measure lessors' experience where one was the most negative and ten was the most positive experience. On the average, the experience of land consolidations among lessors was between grades 5 and 7 and in general it was 5–9¹⁵. The most positive experience was from constructing the roads and ditches where as the division plans had the lowest grade (Figure 2.)

¹² These hypotheses were formed before the enquiry and constructed to questions, that were asked. These questions were about the phases of LC, how the benefit of LC is divided, is the result sufficient, how is lease affected, are rents sufficient after LC and the status of the lease holder. In addition on the specialist survey there were questions about lessors' status and lease rearrangement.

¹³ The survey for lessors included 353 letters to participants and over 300 of those were reminded to respond with a second letter. In total, 163 responded to the survey. The open answers formed a great portion of the survey data where many of the form questions were elaborated with open answers and a third of the participants gave an open answer to the last question.

¹⁴ The prediction was that according to Finnish tradition the eldest child or widow is usually the caretaker of heirs or at least could forward the survey to the appropriate person.

¹⁵ The grades can be compared to total scale where grade 10 is the most positive experience and grade 1 is the most negative experience, grades between 5 and 6 are clearly neither positive nor negative.

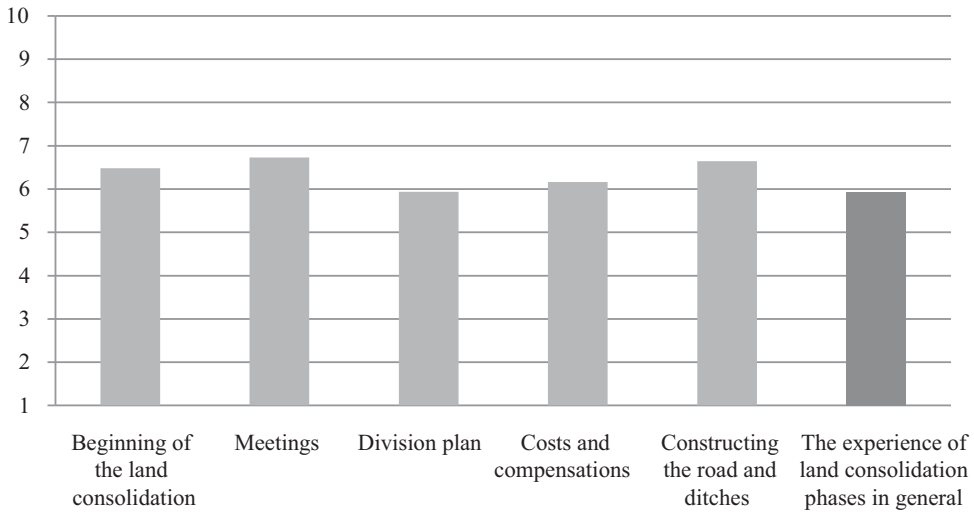


Figure 2. Results: the experience of different land consolidation phases.

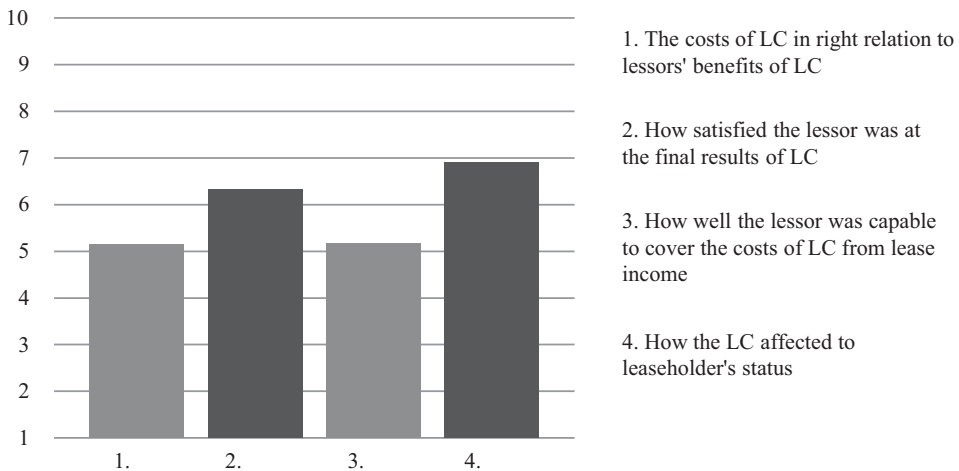


Figure 3. Lessors' experience of the final result of land consolidation and its effects.

The lessors' experience of costs in relation to benefits of the land consolidation and how well they could cover it from leasing income was average. As in comparison more positive experience was from final results of land consolidation and lease holders status was seen improved. (Figure 3.)

The open answer section contained more than 40 different answers. These answers had to be interpreted differently from the structure based answers by finding repetitive themes from the data. The major themes that were found were as follows: how land consolidation benefits the land owners owning large amounts of lands and active farmers. This phenomenon is perhaps due to the reason that lessors are usually small land owners and not active due to leasing. The heirs wanted more information when stating their position as being in an heir. Also

making the roads and ditches was often mentioned in the answers either in a positive or in a negative manner.

According to survey data only one third of the lessors lease their lands for gaining additional income. The most common reason for lease was either retirement from farming or illness where the landowner was incapable of cultivating land by himself¹⁶ and approximately one third of the leased lands ended up in the hand of the heirs of old farmers. Overall, the most common reason of agricultural land lease was direct or indirect consequence of the next generation change rather than leasing land as an investment.

The specialist survey was used as aid for creating the lessor survey; furthermore it was also used to verify the background data and to find out if there were any differences in the aspect of authorities and participants of land consolidation. The land consolidation specialists were aware of lessors' wishes and thoughts. This was measured comparing the data of both lessor and specialist surveys. On the one hand, based on the data there was lack of information about the heirs' situation. On the other hand in the specialist survey data there were thoughts on how to distribute more costs to leaseholders, therefore possibly changing the status of the lessors.

4.3 Dividing and comparing different factors of the data

The survey data was analysed by dividing the data with different factors¹⁷ for two or more sections. Those sections were later compared with each other to find out whether or not these factors would affect or not the survey data, and if so, how.

The first of the comparisons that had interesting results was done between survey participants with positive and negative experiences. In the comparison, the data was divided with the answers of the question measuring how the final result of the land consolidation was experienced¹⁸. The answers in the range of 1–5 were considered as negative experiences and those in the range of 6–10 where considered as positive experiences. The comparison defined if and how the average answers were different in each group.

When comparing the outcome of land consolidation between groups of positive and negative experiences, such as amounts of different field parcel sizes before and after land consolidation, it was notable how the outcome varied between the groups.¹⁹ Those with negative experiences tended to have a greater amount of medium sized (3–5 hectares) or large parcels (5 hectares or larger) before the land consolidation and received more large parcels as a result of the

¹⁶ Based on open answers there was elaborative information why land owners ended up leasing their lands, such as illness, old age, etc. For more complete information of the case, further studies are needed.

¹⁷ The inspected factors were the experience (positive vs. negative), the relatedness (close relative or not), the age (older than 65 vs. 65 or younger), was the participant willingly or not in the LC.

¹⁸ The question inquired how satisfied the participant was to the final result of the land consolidation.

¹⁹ One of the background questions was to inquire the number of different sized field parcels before and after the land consolidation. With this data it was possible to calculate the average change in the number of different sized parcels.

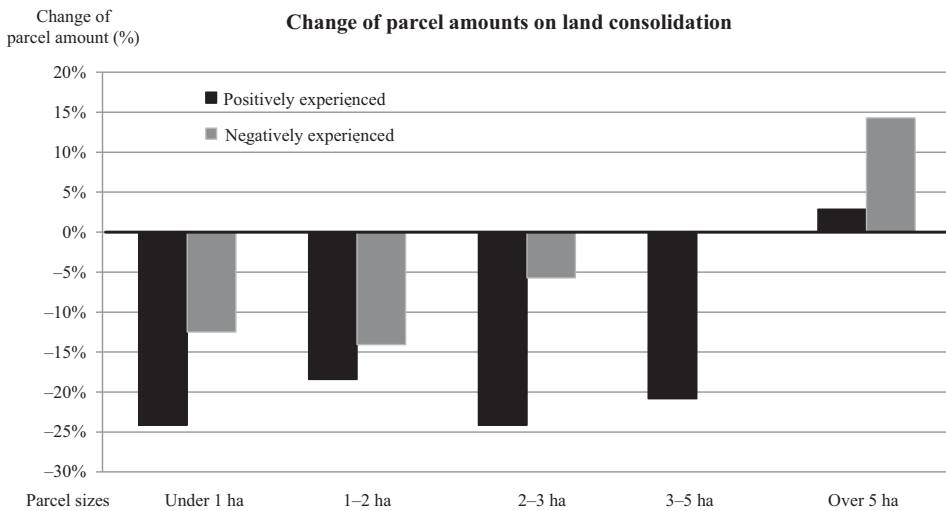


Figure 4. In the figure is presented how many field parcels the lessors had after the land consolidation in relation to situation before, where the lessors with positively or negatively experiences are presented in different groups.

allocation than they had before. Those with positive experiences tended to have greater amount of small (1–3 hectares) or medium sized parcels before the land consolidation and they received medium sized parcels and fewer small parcels as a result of allocation than before. In total, those with negative experiences had more larger parcels before and received (even more) larger parcels as a result of the land consolidation than lessors with positive experiences. The lessors with positive experiences did not receive as many large parcels, but lost more of their smallest parcels. The variation is shown in the (Figure 4) where the percentage represents the change in the number of parcels that each lessor had before and received as result of the land consolidation in each group of parcel sizes.

The phenomenon is possibly explained through expectations, where those with positive experiences had a worse starting situation before the land consolidation than those with negative experiences had when considering the number of parcels. Therefore, having parcels of the size of 5 hectares or more might not be seen a sufficient results of the land consolidation in the farmer's viewpoint. To clarify this assumption more thorough investigations are needed measuring other factors such as the quality of the exchanged land and separately analysing the actual location of the parcels.

The second interesting comparison was how the relationship between lessor and leaseholder affected different factors²⁰. Analyses show that lessors were more willing to in participate land consolidation of their own free will if the leaseholder was a close relative²¹ of the lessor. Also the rent of the field was lower and the

²⁰ One of the background questions was to inquire whether or not the lessor and leaseholder were close relatives.

²¹ Close relative was interpreted as a child or parent.

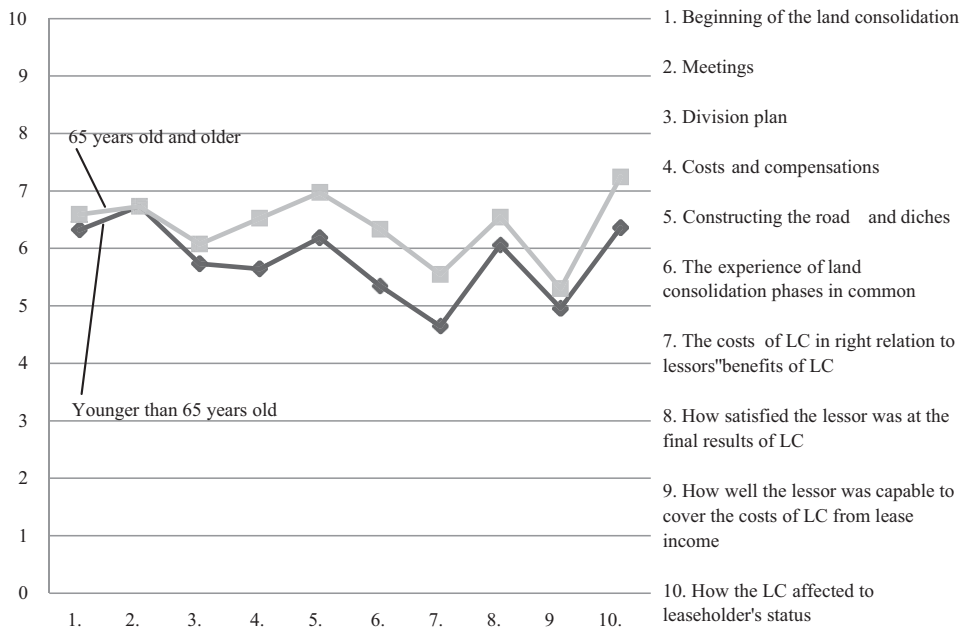


Figure 5. The differences in the experience of different age groups. The scale is diminished.

costs were shared more often with the lessor in cases where the parties were closely related.

The third interesting comparison was how lessors' age divided the survey data. Analyses show that lessors, whose average age was 65- years²² or older had more positive experiences of land consolidation phases and in general than did those lessors who were less than 65 years old. (Figure 5.) Especially those in the 65 years and older group experienced that the status of leaseholders was improved to greater extend. The differences are shown in Figure 5.

4.4 What are current processes in land consolidation from the lessor's point of view?

The lessor's status was observed in functional and juridical point of view. Analyses show that compared to landowner's status in general there are some characteristic differences in lessor's status. However all of the differences are not significant. One of the specific requirements in land consolidation is to uphold active lease contracts. This is done by law and affects to leaseholder's status as well and provides more stable fundamentals to lease contracts overall. Functionally, the placement of parcels can be reallocated in some cases, according to the leaseholder's needs, if lessor does not object to such allocation. Therefore, the lessor's interests are crucial in cases of contradiction. Perhaps the reason for favouring more of the lessor's interest is that lease periods are not commonly

²² In Finland the age 60–65 is a common age for retirement.

long enough to do otherwise. Additionally, the costs of the land consolidation or improvements can be distributed with the lessor and the leaseholder if the leaseholder is significantly benefitting from the case. However, benefits to leaseholder can occur if the leaseholder has a long lease contract.

4.5 How do lessors experience different phases of the land consolidation process and the results of land consolidation, and how lessors' status is taken into account in those phases?

The lessors were fairly content with the land consolidation phases, the results and the process in general.²³ The experiences from road and drainage improvements were mostly positive. Altogether, the improvements were seen to benefit all in the land consolidation area whether or not they were farmers or other inhabitants. The lessors' experiences in distribution of the costs were more negative than the other phases of the land consolidation, although the experiences of these phases were on the average neither significantly positive nor negative. In some cases the lessor felt that supervising the subcontractors' work was insufficient.

Lessors who inherited the land from retired farmers felt that they lack information about land consolidation. These lessors do not necessarily have any experience of farming and they usually live far away from their leased properties. Also, in many cases the heirs still have shared ownership where the property of the deceased is not yet divided and therefore is managed by a single heir or a third party. It is probable that these heirs do not participate actively in property management or they might have little or no experience of actual farming. This specific situation of heirs might cause them to feel that they need more guidance.

When observing all given answers by lessors, many of them expressed a suspicious attitude towards the costs and some towards the land consolidation process itself. This opinion was present more often at the beginning of the land consolidation process than at the end of it. To further clarify this phenomenon it might be worthwhile to study the experience separately in different phases of the land consolidation process.

4.6 What is the operation model for land consolidation which serves the lessor's interests in the most suitable manner?

According to the surveys there are some topics where the lessor's status can be improved such as informing, quality control on land improvements (constructing ditch and road network) and distributing the costs to land owners and users. The quality control itself requires some additional resources such as for arbitrary check-up. The major problems in certain areas are the lack of suitable contractors from which to choose. To be able to distribute costs, longer lease contracts²⁴ are required. Additionally, means to lengthen the lease contracts are required where the legislative possibilities for longer contracts do not seem to suffice alone.

²³ The average answers were from 5 to 7 in a scale of 1 to 10 where 10 was the most positive experience. The answers above number 5 were considered as positive. Therefore the average experience was fairly content.

²⁴ Based on survey data the average length of lease contracts is 5 years on 2013.

4.7 Evaluation

The evaluation is essential to the validity of the research. When evaluating qualitative research four factors can be used. Such factors are credibility, transferability, dependability, confirmability (Lincoln & Guba 1985 pp. 218–219; Eskola and Suoranta 1998 pp. 208–212). E.g., both open and structured questions were used in the surveys to increase the credibility of the answers, where the pre-defined structured questions were based on hypothesis, the option for open answer allowed the possible additional information to show up if there was any. For transferability the surveyed lessors were picked in a manner that the result could be transferable as best as possible to lessors in other land consolidations on agricultural areas.

Moreover, the research included qualitative methods such as numeric calculations (averages etc.). These methods were used as aids to quantitative methods. Due to minor significance of quantitative methods, the methods were not evaluated apart from qualitative methods.

5 Discussion

5.1 Informing and interaction

Developing interaction during land consolidation, such as involving participants to the process, might decrease some of the opposition towards the land consolidation process. For example, when selecting the representatives of participants for the procedure and the improvement phase, at least one should represent the group of lessors. Selecting a lessor or lessors to these representatives grants the lessors a special status as an interest group and therefore should increase the lessors' trust towards actions in land consolidations.

Besides the interaction with authorities and participants the interaction among participants should be encouraged, such as encourage lessors and leaseholders to reach agreements with each other. This is because generally landowners' possibilities to influence the outcome of the land consolidation would have been better if landowners had made an agreement with each other (Ahllund 2004, p. 219).

It is possible that some lessors do not think they would gain any profit from, or are at least suspicious of the profit they would gain from significantly large field parcels such as 5 hectares or more. According to NSL statistics of property sales the larger the bought parcel, the higher the price per field hectare is. The price per hectare increases up to 10 hectare parcels (NLS 2013b, pp. 42–43). Therefore, the actual increase in property value is shown only if the field parcel is sold. The lessors with negative experience had usually more these larger field parcels than those with positive experiences had had a result of the land consolidation. These particular lessors might not be aware how the value of their land has increased or they might care more about other values.

5.2 The status of the lease and lessor's in future

The leasing of agricultural land in Finland might develop in various directions. Some possible scenarios presented in this article. One major question is e.g. is the

purpose of the lease changing, and if so is, the lease becoming more popular and profitable investment as in many other European countries.

The future scenarios:

1. One of the scenarios describes the situation where the proportion of leased agricultural land is decreasing or stable. The group of retired farmers is still the largest group of lessors. The parcels that end up in the hands of heirs are mostly sold as leasing the agricultural land is not seen as a reasonably profitable investment. The active farmers tend to buy land from retired farmers or their heirs. Due to this development, older lessors and heirs' might be more willing to sell their field parcels or exchange them for forest parcels during a land consolidation process. If this scenario happens the next step could be to develop the land exchange and buying processes on land consolidation.
2. The second scenario describes the situation where the proportion of leased agricultural land is increasing. The group of retired farmers and their heirs are still the largest group of lessors. However, the ownership of the land is falling to the heirs of the retired farmers. The active farmers tend to lease land from retired farmers or their heirs. The parcels owned by these groups are mostly seen as a reasonably profitable investment. Due to this development, the demand increases the rent of cultivated land, and therefore, prices of leased parcels in general. This scenario causes land division to fragment even more.
3. The third scenario describes the situation between the first and second scenarios, where the proportion of leased agricultural land is stable. There are two major types of lessors. A significant amount of lessors are more willing to sell their field parcels as leasing the agricultural land is not seen as a reasonably profitable investment. However many lessors do consider leasing profitable enough for their purposes. The active farmers tend to lease and buy land from retired farmers or their heirs. If this scenario happens, the next step could be to develop the land exchange and buying processes in land consolidation.

5.3 *Jointly owned fields*

The second scenario leads Finnish leasing behaviour towards a situation similar to that in central European areas such as in the state of Bavaria. The lease prices (per hectare) are much higher and leasing cultivated land is more common in Central Europe than in Finland. The possible option in scenarios two and three is also founding joint fields similar to jointly owned forests in Finland. The jointly owned field could be an association where number of lessors shares one field parcel. This parcel could be formed in a land consolidation process where single-owned parcels are joined together and the ownership is shared between those who ceded their parcels to this association.

The jointly owned fields might benefit the lessors in many ways, such as increasing the price of the land, accumulating a steadier income and the association management is concentrated to more professional hands. Additionally the greater

sized parcel might simply be more tempting to leaseholders than having many smaller parcels in different locations and therefore easier to lease. The opposite view towards jointly owned fields might be a situation where the land owner wants the heir to continue farming the parcels that have been in the family for generations.

The joint field benefits would be seen on the lease markets, where larger field areas are leased more often or with better rent. Furthermore, the benefits of joint field areas might be seen as environmentally friendlier especially when considering nutrient leaches (Myyrä & Pouta 2009).

5.4 Further researches

One interesting question is to clarify lessors' or perhaps landowners' experience in general through the whole land consolidation process. When the survey participant recalls the experience of land consolidation and its phases it is likely that the overall result of the land consolidation affects how the participant recalls the experience from earlier phases. Therefore, it might be worthwhile to conduct separate surveys in different land consolidations during and after the land consolidation to clarify whether or not the attitude of participants is changing and if so, how. This method clarifies the following assumptions presented: such as are lessors with negative experiences suspicious before the land consolidation and do they have higher expectations of the results.

Furthermore, there is need to do post research if and how land consolidation has affected lease contracts, such as the length of the lease contracts and rents and is there more demand for lessor's fields in lease markets. This kind of data is possible to acquire after 5 to 10 years or more, depending on the renewal rate of the lease contracts in the area.

There is need for further research in terms of why land is leased rather than sold, especially in lessors viewpoint. According to the survey one of the reasons why farmers and heirs decide not to sell but lease the unused lands is how they value the land by itself. This probably means that if the land has been in the family for a long time, it might have a personal value that does not correspond with market value. Therefore, the leasing the land is considered a good alternative to selling it in spite of the low investment values. To clarify how this phenomenon, or other factor, is present when the farmer decides the future of his properties, further research is needed.

Acknowledgements. *The support of the National Land Survey of Finland for this research is greatly acknowledged.*

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Legislation

The Finnish legislation can be accessed on the internet service Finlex. Web-address: <http://www.finlex.fi/en/>

AoT	Act on Tenancy (258/1966).
CRE	Code of Real Estate (540/1995)
Expropriation act	So-called expropriation act. Act on the Redemption of Immoveable Property and Special Rights (603/1977).
LVL	So-called ”Torpparilaki”. Laki vuokra-alueiden lunastamisesta (135/1918). ”Crofter act”
LVLEL	Laki evankelis-luterilaisten ja kreikkalais-katolisten seurakuntain papiston ja lukkarin virkataloihin kuuluvain torppa- ja mäkitupa-alueiden lunastamisesta (73/1921).

REFA	Real Estate Formation Act (554/1995).
UjTL	Laki uusjakojen tukemisesta (24/1981)

Abbreviations

EU	European Union
NLS	National Land Survey of Finland
LC	Land consolidation

PUBLICATION II

**Lessor's status in land consolidation in Europe – Reports from Cyprus,
Finland, France, Germany, the Netherlands, Latvia and Estonia**

Sulonen, K., Kotilainen, S.

Baltic Journal of Real Estate Economics and Construction Management. Vol.3, 2015, pp.56-71
<https://doi.org/10.1515/bjreecm-2015-0007>

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LESSOR'S STATUS IN LAND CONSOLIDATION IN EUROPE – REPORTS FROM CYPRUS, FINLAND, FRANCE, GERMANY, THE NETHERLANDS, LATVIA AND ESTONIA

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Abstract. The purpose of this research was to investigate a landowner's status as a lessor in land consolidation on agricultural areas in Europe. The research was based on surveys designed for land consolidation experts from Cyprus, Finland, France, Germany, the Netherlands, Latvia, Estonia and statistical data of the areas. The lease of agricultural land is common in Europe. However, there are differences related to how common the lease is and what the rental value of land is. The variation is based on factors such as differences in the markets, historical development of the agricultural lands and current legislation. The lessors have rights as landowners in land consolidation, but in case the land is used by third parties, lessor's status is more limited compared to other landowners'. Similarly the costs of land consolidation typically are paid by landowners, not by users. The lessors are commonly indifferent and suspicious about the land consolidation. They are occasionally suspicious, especially before or at the beginning of the process, but later on they seem to be less suspicious. The lessors' experience of land consolidation is based commonly on a fear of additional costs for their investment.

Keywords: Land consolidation, landowner, leaseholder, lessor, survey study.

INTRODUCTION

Agricultural use of land has long traditions in Europe and it still has a role in the European economy. The significance of agriculture is seen, for example, in politics where the Common Agricultural Policy (CAP) has been present nearly since the foundation of the European Union (EU 2012).

The land use in rural areas is normally less controlled than in urban areas. Land transactions, such as purchase or lease, by farmers who increase their capacity, can cause land division to fragment and to lose the benefits of the newly acquired land¹ (Vitikainen, 2004, pp. 39–40). Additionally, insecurity of continuation of the lease can lead to long-term decline of land improvements in those leased fields (Myyrä, 2009, pp. 17, 20–22).

To investigate the lessor's situation, the primary research question was introduced: "What is the lessor's status in land consolidation in different areas in Europe?" Moreover, to clarify the lessor's status, it was essential to examine:

¹ This is due to issue that sold or leased parcel might end up to other users than those who have adjacent parcels or those that profit most of the parcels (Vitikainen, 2003, p. 8).

What is the situation of the agricultural land lease in surveyed areas? What is the lessor's status in land consolidation in comparison with other groups? How do lessors seem to experience the land consolidation?

In this research, the purpose was not inclusively to study all the differences in land consolidation, lease or agricultural situation altogether, but rather to concentrate on investigating factors that can explicate the lessor's status in different countries. The focus of this article is mainly on land consolidation and lease on cultivated agricultural lands not, for example, on forestry areas or urban areas.

1. GENERAL METHODS AND MATERIALS

To investigate the answers to the aforementioned research problem, a special survey was conducted to selected specialists from different areas of Europe. The areas and specialists were selected based on several criteria. First of all, one of them was to select areas from different parts of Europe. The size of the areas was set to cover a country or a state. The second criterion was to find out areas where the land consolidation processes were common² and relatively similar, preferably from the lessor's point of view. The criteria for selecting a specialist were that the person had expertise in the topic nationwide³ and was responsible for land consolidation in that area. To find out these specialists and their contacts, prior investigations were required. The investigation included separate queries to these contacts until suitable specialists were found⁴. The survey was sent to 29 different recipients⁵. Whether the land consolidation was conducted by cadastral surveyors as administrative authorities⁶ or by a committee⁷ was not considered a significant difference from the lessor's point of view.

While the purpose of the survey was to collect information from various international contacts, the email-based approach was seen the most suitable method for conducting the survey. The survey was planned to be simple and open, where defined questions were given as guidelines, thus allowing participants (of the survey) to answer without strictly following the structure of the form. The questions were based on the following pre-defined factors: commonness of land lease, price (rent), lease contracts (length), status of the lease (lessor), costs of land lease and lessor's attitude. This kind of method produces qualitative data, in

² In the UK, for instance, there is not a similar kind of activity with land consolidation as in the aforementioned countries (Demetriou et al., 2013, p.8).

³ From a country or area that a specialist was representing.

⁴ The contact addresses for the survey were obtained from different sources such as published articles and by interviewing second-degree contacts. Therefore, most difficulties during the survey occurred while finding out and identifying survey participants and their contact email addresses.

⁵ Five of the recipients were general addresses and 24 of them were personal addresses. Seven of them did not respond and three of the contact addresses were obsolete and unable to deliver. The overall respond rate was 65 %. This does not include obsolete addresses.

⁶ This method is present in many countries, such as in Germany and Finland (Vitikainen 2004).

⁷ This method is present in Western Europe, for example, in the Netherlands and France.

which way the responses were examined. The time of the survey was between autumn 2014 and spring 2015⁸.

As a result, ten responses were selected to represent the surveyed areas from Cyprus, Germany, Bavaria (Germany), France, Estonia, the Netherlands and Latvia. In Latvia and Estonia, the land consolidation legislation and procedures have recently or will be changing, weighting the results more to the theoretical basis compared to the empirical basis of land consolidation. Additionally, the data from previous survey⁹ (Sulonen, 2014) collected in 2013 autumn was used for information about Finland.

The additional statistical data were acquired, such as prices of the land and area of leased field parcels and total leased areas as background information. The material was not used for quantitative analyses of the topic, but rather to help understand the differences and significance of the land lease in different areas.

1.1. LAND LEASE

One of the interest groups in land consolidation on agricultural areas is lessors. Lessors are landowners who give the right to use their own land to those who need it without giving away their ownership of the land for compensation¹⁰. If the lessor leases his/her lands for investment purposes the lessor normally aims to maximise income out of the property with minimal investments and, therefore, may not actively consider how to improve the land by different means such as by land consolidation. However, there are lessors who lease their lands for other reasons, such as in order to preserve them for the next generation and merely covering the costs of the lands by leasing them. The aforementioned method is common, for example, in Finland (Sulonen, 2014, pp. 32–33; Sulonen & Kotilainen, 2016, pp. 4–6).

1.2. THE STATUS OF LEASE

The importance of lease markets in many countries of the European Union is based on factors such as transaction costs, other related markets and historical inheritance development. Historically, in some areas it was the eldest son who had the inheritance rights and in some areas the land was split among all children (Ciaian et al., 2012, pp. 4–5). The legislative differences have an effect on the lease markets as well. For example, in France, Belgium and the Netherlands, officials regulate the rents (Ciaian et al., 2012, pp. 6–7). The proportion of leased land of the total agricultural land area is seen in Fig. 1.

⁸ The survey was sent to participants when the contact information was available. More detailed information about the survey-conversations is presented in the references.

⁹ The survey was for a wide range of lessors and key land consolidation specialists, currently working on conducting the procedures in Finland. (Sulonen, 2014).

¹⁰ If the action does not involve compensation to the party giving away land use right, the action is considered a loan rather than a lease. (Saarnilehto, 2006, pp. 2–4).

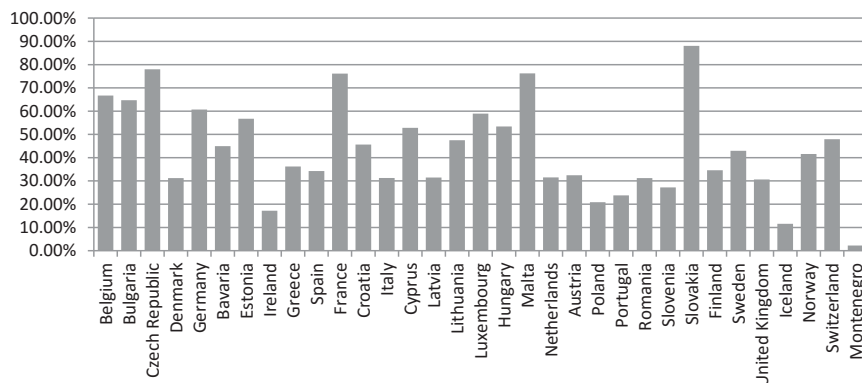


Fig. 1. Percentage of leased agricultural land of total agricultural land area in 2010. (Eurostat 2015). *Based on number of farms and areas by agricultural size of farm (UAA).*¹¹

The average rent varies in different areas of Europe along with the average price of these fields. The rent and field prices seem to have more value in Central-European countries and especially in the Netherlands, Denmark and areas close to these countries, for example in Germany (north-west) and in France (north). In contrast, the value of rent and field prices are lower in other areas, such as in Cyprus and in Eastern and Northern Europe. To visualise the differences, the average rent per hectare is presented in Fig. 2.

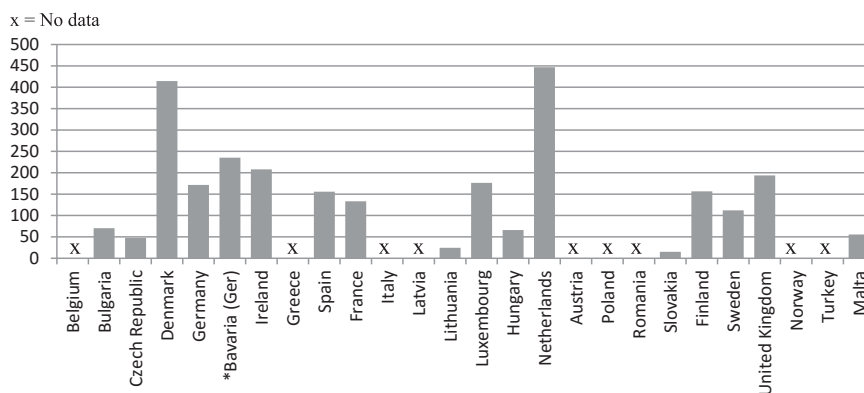


Fig. 2. Average rent of agricultural land in EUR per hectare (2000–2009) of displayed countries and Bavaria 2001–2010. (Eurostat, 2015; Agrarbericht, 2012).

¹¹ Utilised agricultural area (UUA) is the total area taken up by arable land, permanent pasture and meadows, land used for permanent crops and kitchen gardens (EU, 1987).

2. LEASE IN LAND CONSOLIDATION AREAS IN EUROPE

2.1. LEASED AREA

Germany

On average, more than 60 % of agricultural lands are leased in Germany. The situation is different in former western- and eastern-parts of the country, as the lease is significantly more common in the former Eastern part¹². The tendency is that the gap between how common the lease is in the former Eastern and Western parts is decreasing (DBV, 2014, pp. 56–59; Thomas, 2015). The state of Bavaria is in different class at this matter, being the only state in Germany where cultivating on the leased land is less common compared to cultivating on the owned land¹³ (Agrarbericht, 2012; Gollwitzer, 2013).

The Netherlands

In the Netherlands, the average lease percentage of agricultural lands is 30–40 %. The lease percentage varies greatly between regions, mostly for historical reasons. (CBS, 2007; Eurostat, 2015; Louwsma, 2014.) The proportions may change in the future because of the current protective rules, which are in favour of leaseholders and cause owners often not to start a new lease (Zevenbergen, 2014).

France

The lease is especially common in France, but varies through the country from 50 % to 88 % and being around 70 % on average. The lease is more common in the north of the country compared to the south of the country, especially in areas close to the border of Belgium (Eurostat, 2015).

Finland

The average proportion of the leased land area in Finland is ranging between 30–40 % of total cultivated lands. The proportion of the land lease varies in different areas of the country because of different types of landscapes. Furthermore, it is notable that the proportion of agricultural landowners acting as lessors is greater compared to the proportion of the leased agricultural area of total land area. The main reason for this is that lessors own less land compared to active landowners. The lease is common, but the reasons to lease are various; such as to hold the land for the next generation¹⁴, lease it to a relative, have the fields leased when there is no other use of land and purely for investment purposes. The first reasons are more common compared to leasing land for investment (Sulonen & Kotilainen, 2016; Sulonen, 2014, pp. 13–14, 32–37).

¹² In the former Western part of Germany, 55 % of the agricultural land was leased and in the former Eastern part of the Germany 71 % was leased in 2014 (DBV, 2014, pp. 56–57).

¹³ Leased agricultural land in Bavaria (44.7 %) (Agrarbericht, 2012; Gollwitzer, 2013).

¹⁴ Thus, lease is temporary part of the process where the land is eventually transferred to the next generation from parent to child (Sulonen, 2014, pp. 32–33).

Cyprus

The lease on agricultural lands is common, especially in areas where livestock is included in farming activities, as land is leased to produce feed to livestock. However, there is variation between areas (Demetriou, 2014). The average proportion of leased land of total agricultural lands is 50 % (Eurostat, 2015).

2.2. LEASE PRICE

Germany

As the lease is more common in the former Eastern part of Germany compared to the Western part of the country, the average rents of arable farmlands per hectare are smaller in the former eastern part compared to former western part of Germany. The difference¹⁵ is hundreds of EUR per hectare. The rents in the north-west were up to 600 € per hectare in 2014, whereas the German average was 300–400 €. The tendency is that rents are rising in every area of the country (DBV, 2014, pp. 58–59). In Bavaria, the field prices are substantially greater and rents are above average when compared to other parts of Germany (Agrarbericht, 2012; Eurostat, 2015).

The Netherlands

Rents in the Netherlands are high in European standards; mainly ranging between 500 and 900 € per hectare¹⁶. The maximum rent is regulated by authorities annually (Louwsma, 2014; Silvis et al. 2014, p. 14).

France

In France, there are regulations of agricultural lease, such as for pricing the rent. These regulations for the price of the rent are specified in Rural and Maritime Fishing Code (RMFC Article, L. 411–11). The rent is controlled by the authorities and is calculated annually to determine the price range¹⁷ where a lessor and leaseholder must operate. Therefore, to make a legal lease contract, the participants of the lease must accept the rent that is in the limits of minimum and maximum rent. In addition, the participants must specify the rent in a manner that there must be separate values for the different types of leased buildings and land (Epinat, 2014).

Finland

The rent per leased field hectare is relatively low by European standards being 100–200 € per hectare on average. In many cases, the lease does not provide good income for investors and perhaps that is the main reason why leasing agricultural land as an investment is not common in Finland (Sulonen & Kotilainen, 2016).

¹⁵ In the former Eastern part of Germany average rent of arable farmland was 206 € per hectare, in former Western part of Germany average rents were 442 € per hectare in 2014. The average rent in the north-west varied from 551 to 598 € per hectare in different states, where in Bavaria the average rent was 466 (DBV, 2014, pp. 58–59).

¹⁶ The average rent in the Netherlands was 633 € per hectare in 2014 (Silvis et al., 2014).

¹⁷ The price range of the rent is based on French national rent reference index (Epinat, 2014).

Cyprus

The rents of the lease are fairly low being approximately a few hundreds of EUR per hectare per year. The amount of the rent might, nevertheless, vary in different regions (Demetriou, 2014).

2.3. LEASE PERIOD

Germany

On the one hand, in small parcels, the lease contracts are normally made only orally. The contracts continue from year to year, until cancelled. On the other hand, in larger parcels the lease period is commonly between four and nine years (Thomas, 2015). In land consolidation, the contracts are often reorganised.¹⁸ In Bavaria, during land consolidation, new contracts are made normally for at least ten years (Donaubauer, 2013; Gollwitzer, 2013).

The Netherlands

The legislation in the Netherlands defines different types of lease contracts, such as the long-term and short-term contracts. The long-term contracts are made for six-year periods and offer stronger rights to leaseholders compared to short-term lease contracts. At the end of a long-term contract, the leaseholder is capable of renewing the contract for another six years with or without the lessor's consent. In addition, the leaseholder has primary right to buy the land if the lessor wants to sell it. The shorter lease contracts do not grant such rights to the leaseholder, and thus lessors have more commonly been favouring these types of lease contracts. Currently, both contract lengths are common (Louwsma, 2014).

France

The lease periods in France are at least nine years (RMFC Article, L. 411–5). This regulation applies to both oral and written contracts, when the lease is renewed. The rule is mandatory, as the new lease period cannot be made shorter than that. However, the lease contracts can be longer, such as for 18 or even 25 years (RMFC Article, L. 416–1).

Finland

Legally, the land lease is less regulated on plain agricultural areas compared to urban plot areas or land areas with structures¹⁹. The legislation allows land leases of agricultural lands up to 20 years and up to 25 years if there are buildings suitable for agricultural use (AoT, 258/1966 sections 57 and 71). Despite the legislative possibilities, contracts are made for five years on average (Sulonen, 2014, pp. 42–43).

¹⁸ The lease contracts are not cancelled by the land consolidation process and the lease is transferred to the allocated land parcels (Gollwitzer, 2013). This is done unless the participants of the contract wish otherwise.

¹⁹ The land lease in Finland should be applied for the registration if the lease right is transferable to a third party without hearing the titleholder and if the lease contract allows a building in the area or there are buildings in the area that belong to the leaseholder (CRE, 540/1995, chapter 14, sections 1–2).

Cyprus

There is no special legislation to either favour or restrict the land lease between private parties. However, if the other party is the state, the lease period is set to one year and continues for each year if not cancelled (Demetriou, 2014).

2.4. THE STATUS OF LESSOR AND LEASEHOLDER IN LAND CONSOLIDATION

Germany

The focus of the land consolidation is mainly based on the ownership of the land. Primarily, lessors as landowners are a participant of the Community of Participants of the land consolidation. Leaseholders are part of the secondary order in land consolidation where they do not have direct influence on plans, such as common and public facilities and reallocation. However, the legal status of the old parcels, such as lease, has to be taken into account in new parcels (Thomas, 2015).

There are alternative methods to improve land use in agriculture instead of land consolidation, where the status of land use is different. Such methods include, for example, the possibility of voluntary exchange of land or land use. In exchange for the land use rights, the exchange is done according to how land is used, whereas land ownership remains unchanged (Gollwitzer, 2013; RDB, 2006, pp. 115–122).

The Netherlands

All landowners are part of the land consolidation in the consolidated area. The leaseholders in the land consolidation area can apply to register their lease contracts at the beginning of the land consolidation process. The registration requires acceptance of both parties and, hence, is taken into account during the reallocation process (Louwsma, 2014).

From the viewpoint of improving the agricultural situation of the area, the interest of the leaseholder as a land user is more crucial compared to the interest of the lessor in the allocation process. However, the legislation dictates that the lessor's status may not be deteriorated (Louwsma, 2014).

France

The purpose of the land consolidation is to improve the land use and property values. Where the improvement is not possible in every case, it should not nevertheless decrease the value of the property. Therefore, it is possible that the land consolidation can reach status quo when observing the results from the viewpoint of the single landowner (Epinat, 2014).

In principle, lessors and leaseholders are treated as equals in land consolidation. Moreover, the land consolidation process should be beneficial to everyone. However, when the interest of the lessor and leaseholder are different in reallocation of parcels, lessor's interests prevail. When leased land parcels are reallocated, the lease contract is transferred to new parcels. In these cases the leaseholder either has to accept the change or end the contract (Epinat, 2014).

Finland

The legislation states that in land consolidation, the leased area shall be amended to pertain to the lessors' new parcels, unless the change causes considerable hindrance to the leaseholder (REFA, 554/1995, 86§). Practically the lease is transferred along with the lessor's lands if possible without major complications. Additionally, these leased lands are allocated in many cases close to the lands that the leaseholder already uses. This is done if the lessor as a landowner does not object the allocation. The length of the lease generally has an effect on how well the leaseholder's interests are possibly taken into account in land consolidation (Sulonen, 2014, p. 20, 49–50).

Cyprus

The land consolidation in Cyprus aims at improving the situation in property division originated from an anachronistic system of land tenure, such as land held in undivided form and dual or multiple ownerships (LCDoC, 2015). There are complexities on land ownership where there might be dual or multiple ownership of the land or different resource on it (Demetriou et al., 2013, pp. 3–4).

On land consolidations in Cyprus, the lease is considered a temporary situation where the lessor's, as a landowner, interests are stronger compared to the leaseholder's. In legislation,²⁰ it is stated that landowners are invited into hearing with authorities carrying out the land consolidation process. This does not include leaseholders. The legislation requires that the leaseholder's interests have to be noted, if not in conflict with the lessor's interests. Furthermore, the leaseholder's status is noted as fairly as possible, though not in the expense of lessor's status (Demetriou, 2014).

2.5. COSTS OF LAND CONSOLIDATION

Germany

The Land Consolidation Act in Germany states that the cost of the land consolidation is divided among the landowners (LCA section 19). However, the costs can be subsidised by the state (Donaubauer, 2013). In Bavaria, the costs of land consolidation are subsidised up to 80 %²¹ and the remaining expenses are divided among land owners. The landowners, who have long-term lease contracts, may have half of their costs subsidised²² (Donaubauer, 2013; Gollwitzer, 2013, LCA 19). The land owner normally passes the costs to the leaseholder by increasing the rent (Thomas, 2015).

²⁰ The implementation of land consolidation in Cyprus follows democratic procedures applied in the European Union Policy. These procedures are based on the Consolidation and Reallocation of Agricultural Land Laws from 1969 to 2003. These laws provide owners to participate in all stages of land consolidation and object them (LCDoC, 2015).

²¹ The land consolidation is funded by the state of Bavaria, Federal Republic of Germany and EU (Gollwitzer, 2013).

²² In Bavaria, if landowners have lease contracts for more than ten years, half of their costs can be subsidised (Donaubauer, 2013; Gollwitzer, 2013).

The Netherlands

The costs are mainly funded by the state. The leftover costs are divided according to how well the participants benefit²³ from the land consolidation. The leftover costs are directed to land owners and possibly indirectly to leaseholders, where the lessor can raise the rent in the limits of rent regulations (Louwsma, 2014; Zevenbergen, 2014).

France

The land consolidation is funded by the department²⁴ and the landowners. The department can use funds of the state and the European Union. The work of surveyors, evaluation of impact assessment and implementation of the procedure of land consolidation is funded 100 % by the department. The main responsibility of the other works related to land consolidation is funded by landowners, but is subsidised by 40 % (Epinat, 2014; Derlich, 2002).

Finland

The majority of the costs of land consolidation is subsidised by the state and the rest of the costs are funded by landowners (UjTL 1423/2014). Distributing of the costs to leaseholders is a challenge, because the lease periods are too short and it is uncertain if the current leaseholder is able to renew the contract. However, the lessors and leaseholders have been distributing the costs after the land consolidation among themselves (Sulonen, 2014, p. 54). In overall, there is a problem to distribute costs to leaseholders when many of the lease contracts in land consolidation areas are made for five years as on average (Sulonen, 2014, pp. 6, 43). This is common, despite the fact that legislation allows leases in agricultural lands up to 25 years (AoT, 258/1966, sections 57 and 71).

Cyprus

The costs of the land consolidation are mainly funded by the state. Landowners' share of the costs is approximately one third of the costs. The landowners cede portions of their lands to road improvements. Commonly the portion is small, 4–7 % of total owned land (Demetriou, 2014).

2.6. LESSORS' EXPERIENCES

Germany

The lessors are currently able to lease their land for sufficient income in Germany. In overall, the lessors tend to be suspicious about land consolidations and how they can transfer the costs to leaseholders. Therefore, they occasionally try to prevent land consolidation in fear of additional costs or losing lands due to new roads. In comparison, the leaseholders as land users typically recognise the benefits of land consolidation. The leaseholders are commonly those who benefit the most of land consolidation, if they do not own any land on the land

²³ These factors taken into consideration are, for example, parcel concentration, decrease of the distance to field parcels, increase of parcel sizes (Louwsma, 2014).

²⁴ Regional administrative divisions of France.

consolidation areas. Occasionally, leaseholders may feel that they lose their status on lease markets over small and adjacent parcels due to land consolidation (Thomas, 2015; Gollwitzer, 2013).

The Netherlands

The land consolidation might cause some tension between the participants, where some of the lessors become unsatisfied. It is worth mentioning that the lessors, who lease the land for investment purposes, generally are not interested in where their lands are as long as the land holds its value. However, there is no wider study on lessors' opinions (Louwsma, 2014).

France

The reactions of the lessors are mainly indifferent and rarely openly negative. The lessors tend to experience that the land consolidation is unnecessary and causes costs to them. However, the attitude tends to be temporary and changes. The lessors may propose to be left out of the land consolidation, but if this hinders the purpose of the land consolidation, such requests are typically rejected (Epinat, 2014).

Finland

The lessors tend to be suspicious towards the land consolidation and its costs. Their experiences²⁵ of the land consolidation process are indifferent or slightly positive. The experiences of different phases of land consolidation tend to follow the trend where they are either slightly positive or slightly negative. The lessors had the most positive experience from the road and ditch improvement phases and most negative experience from dividing the costs. The lessor's suspicion before the land consolidation tends to dissolve slightly after the land consolidation (Sulonen & Kotilainen, 2016, pp. 7, 8, 12 & 13; Sulonen, 2014, pp. 58–60).

Cyprus

The experience from land consolidation is overall positive. Approximately four out of five land owners have a positive experience in overall (Demetriou, 2014).

2.7. THE SITUATION IN THE BALTIC AREA: ESTONIA AND LATVIA

Due to historical reasons and large land reforms during past decades²⁶, the legislative work is in a different state in Eastern Europe compared to Western Europe. In countries such as Latvia and Estonia, there are or will be legislative changes considering land consolidation process (Sproģe, 2015; Jürgenson, 2015). This is due to recognition that there is a need for second phase of land reform involving land consolidation to decrease the fragmentation of land parcels, such as in Latvia (Micurova, 2005, p. 2).

²⁵ There are minor groups of lessors with strong negative or positive experiences (Sulonen, 2014, pp. 58–60).

²⁶ For example, there were large land privatization reforms in Latvia after 1990 (Micurova, 2005).

In Latvia, the Land Management Act (LML)²⁷ states that the forthcoming land consolidation is voluntary, where all participants must accept the project. In overall, the lessors in land consolidation have no special status over other landowners, but as landowners, they are acting as the main contacts for authorities (Sprõge, 2015). In Estonia, there was some land consolidation along with the land reform process, where the land ownership had a major role. However, there are aims to change the current legislation that possibly affects the land consolidation process (Jürgenson, 2015).

In Latvia, the recent change in the law on Land Privatisation in Rural Areas²⁸ brought some changes to land use and ownership. The act currently states that land leases should be at least five years and must be informed to the municipal authorities. Additionally, there are restrictions on who is eligible to purchase agricultural lands (Sprõge, 2015).

It is planned that the participants who will initiate the process fund these aforementioned land consolidations. However, this applies only to authorities, such as the state and municipalities. If landowners initiate the land consolidation, the cost of it is for the landowner, the state or the municipality (Sprõge, 2015).

3. EVALUATION

To evaluate the results of this research, certain factors should be displayed. Where the focus was on qualitative material, the analysis was based on qualitative methods. Additionally, the statistical data from the European Union and its member states were used as background information for the analysis. The data was not further analysed.

To evaluate the process, there were several questions to be answered, for example, why the open survey was used as the primary method for acquiring the material. The survey was designed to be open rather than structured in order to give freedom to a participant to concentrate on the given topics that are essential in the current area. The given topics were to guide the participants to answer and keep separate surveys comparable. Moreover, due to the distances, the email survey was favoured over the interview.

Due to the requirements for a survey participant, only certain types of specialists, for example, representatives of authorities, were interviewed in the survey and not, for example, the lessors. The objective was to find out such specialists who had nationwide experience to present the situation in the whole country or area, thus outlining single lessors. To cover similar areas, by surveying the lessors, a substantially wider study has to be conducted. The surveyed areas were selected based on such criteria that the results would be generalisable in the most suitable way. In addition, the survey conducted in 2013 among Finnish lessors and specialists indicated that the specialists' understanding of the lessors' status was similar to the status that lessors themselves had experienced (Sulonen, 2014).

²⁷ adopted on 1st January 2015.

²⁸ Since the 1st November 2014.

4. DISCUSSION

WHAT IS THE SITUATION OF THE AGRICULTURAL LAND LEASE IN SURVEYED AREAS?

The land lease on agricultural lands is common throughout Europe. There are factors that affect the commonness of land lease, such as current market prices, transaction capabilities, legislation and historical reasons. To be more specific, the land lease is affected by historical reasons, such as inheritance behaviour or the use of common farms and legislative differences like regulations on maximum and minimum rents per field hectare or lease periods.

The high lease prices seem to occur most likely in central Europe, especially in the North-West. In other surveyed areas of Europe, the prices for rent are lower in general.

WHAT IS THE LESSOR'S STATUS IN LAND CONSOLIDATION IN COMPARISON WITH OTHER GROUPS?

The lessor's status in land consolidation resembles the landowner's status in general (costs, hearing of participants, etc.). However, the lessor's status is unique in a way that lessors do not use their land by themselves and, therefore, benefits may be, or seem to be different to other landowners. There are special topics on land consolidation for the lessor, such as how the costs of the land consolidation are divided between the lessor and the leaseholder and what the status of the lease itself is.

Commonly, the leaseholders are not considered to have status as participants of land consolidation as lessors have. This is due to the temporary nature of the land lease. In addition, the length of the lease contract applies to how well the costs of the land consolidation can be distributed to leaseholders as land users. In areas, where the lease is common and has strong economic value, there are stronger protective rules for the leaseholder. In these areas, leaseholder's and lessor's statuses are similar.

In some cases, the allocation of the parcels might be done in respect of land use rather than land ownership, and the allocation is done if the landowner does not object it. Furthermore, in many cases the leaseholder's interests are passed on by their lessors.

The legislation for lease contracts of agricultural lands varies depending on how regulated the lease contract is between the parties. The regulations may apply only to certain types of land leases or lease contracts. For example, the land lease is more controlled in Finland in urban areas than in rural areas. Especially for field parcels without structures, the regulations allow short lease periods and oral contracts; whereas for urban plots, longer lease periods and written contracts are mandatory. On the other hand, there are strict regulations on agricultural land lease in Central European countries, such as France and the Netherlands, such as regulated rent and fixed renewable lease periods. These regulations support leaseholder's status and long-term lease contracts, thus allowing leaseholder to have some stability in land use. The stability might affect the leaseholder's interest to improve the land and to participate in land consolidation and in its costs more willingly. In countries such as the Netherlands, where the agricultural land

lease can be registered, the rights of the leaseholders are close to the right of the lessors in such cases.

HOW DO LESSORS SEEM TO EXPERIENCE THE LAND CONSOLIDATION?

Lessors are commonly indifferent about the land consolidation and suspicious, especially before or at the beginning of the process. In the initiation stage, lessors may wish to be left out of the land consolidation process. As a whole, lessors tend to remain mostly indifferent, being neither strongly negative nor positive towards the land consolidation.

The lessor's reaction is based commonly on the concerns of the additional costs of land consolidation that they cannot distribute to the leaseholder. In areas where the rents of agricultural lands are high, the lessors may consider that they already have sufficient income of the investment and do not see additional investments necessary.

The lessors acknowledge land consolidation as a good way of improving the land use, but it is not a good investment for them. Where the leaseholder directly benefits of the land consolidation as the user of the land, lessor's benefits are more indirect and may seem less compelling for the lessor. Despite the lessors being commonly suspicious of land consolidation, they do not seem to be openly negative and their attitude tends to change slightly during the land consolidation.

POSSIBLE DEVELOPMENT OF LESSOR'S STATUS

The challenge in land consolidation is typically how to distribute the costs to participants in relation to the benefits. The leaseholder generally benefits from the land consolidation as the land user, but what if the leaseholder changes. On the other hand, the lessor's benefits of the land consolidation are more indirect and do not have the immediate effects.

If the weight of the land use increases and weight of the land ownership decreases on the parcel allocation, the statuses of the participants may be different in leaseholders' favour.

5. FURTHER RESEARCH

One of the interesting topics that occurred during the research was to investigate the landowner's reasons for the land lease. There seems to be a variation on this matter in surveyed areas. Some of the reasons are based on historical, economical or other factors affecting still the current markets, but finding out the landowner's reasons for land lease remains unclear. To examine this assumption, further research is needed. The different personal reasons for land lease can occur in land consolidations and may possibly affect the lessor's interests.

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- REFA Finnish legislation: *Real Estate Formation Act* (554/1995).
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PUBLICATION
III

**Voluntary land consolidation approaches and their adaptability to
experimental farm-based land consolidation in Finland**

Sulonen, K., Kotilainen, S. Hiironen, J.

Nordic Journal of Surveying and Real Estate Research. Vol 12 / 2017.
<https://journal.fi/njs/article/view/65401>

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Nordic Journal of Surveying and Real Estate Research 12:1 (2017) 59–83

submitted on 15 August, 2017

revised on 20 November, 2017

accepted on 20 December, 2017

Voluntary Land Consolidation Approaches and Their Adaptability to Experimental Farm-based Land Consolidation in Finland

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Abstract: *There is a need to develop a voluntary and flexible Finnish land consolidation procedure that is less reliable on government funding. To fulfil these development needs, an experimental farm-based land consolidation is currently being tested in Finnish fields. This research aims to compare and evaluate foreign voluntary land consolidations with Finnish practices. The research utilises content analysis of written material and qualitative semi-structured interviews of land consolidation specialists. The study found that voluntary participation increases the commitment of the participants, but may endanger the whole project in some cases. Therefore, rules for voluntary participation (dropping-out rules, etc.) were seen as important. In voluntary processes, the government's role shifts from that of a leader to that of a facilitator, which may mean the redistribution of funding sources as well. There is a hypothesis that participants would be more willing to fund a project that is directly focused on their own issues rather than on regional issues like traditional land consolidation. The study concludes with suggestions of key points by which guiding principles or rules should be defined.*

Key words: *Finland, land consolidation, voluntary approach*

1 Introduction

In Western Europe, land consolidation is traditionally used to shape vast areas of agricultural land and as a tool for land reforms or small-scale land reallocation. The value of land consolidation is often related to the needs of the farmer to improve the efficiency of the land by reallocating the fragmented holdings in a more suitable manner. Today, land consolidation can obtain multiple different goals. For instance, participatory approaches, where the solution of the reallocation is negotiated with the right landholders, is becoming more and more common (Lemmen et al. 2012, p.11). Overall, the rural development concept has become

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broader and includes environmental awareness and other non-agricultural concerns (Varga and Bazik 2013, p. 527). New needs have emerged for other approaches along with the traditional approach of land consolidation. To complement these needs, land consolidation in Finland is developed based on customers' aims and wishes. In this context, a voluntary approach and flexibility in land consolidation are seen as key aspects (MMM 2015; Potka 2016a, pp. 12–15, 21–23; MML 2007; Ylikangas 2003, p. 25).

To comprehensively test the possibilities for the voluntary approach and flexibility, an experimental farm-based land consolidation model was introduced. The aim of this research is to supplement experimental land consolidation by investigating and providing possible aspects and adaptability problems if implemented into the Finnish experimental land consolidation. To consider the aspect in an international context, this paper provides insights on the different voluntary-based approaches in different countries and compares their major differences and similarities in relation to the traditional land consolidation model of Finland.

This study analyses a problem that can be divided into two questions: What aspects do different approaches for the voluntary land consolidation provide for experimental land consolidation projects in Finland (Q1), and how adaptable would these international approaches be in the Finnish context (Q2)? To provide an answer to the first question, suitable international voluntary-based approaches are recognised and examined. For the second question, empirical data acquired by interviews with land consolidation specialists is utilised.

2 Study design

The research uses qualitative methods as content analyses¹ to find the differences and similarities between international voluntary-based and Finnish experimental land consolidation. Since land consolidation is an international concept, it is worth exploring different approaches for the comparison. Structurally, the first section of the research describes land consolidation as a concept. Two voluntary-based land consolidation approaches were selected to represent the comparison based on the criteria explained in chapter 4.

Overall, the research is based on two major sources of data acquired by secondary and primary research. The data were acquired in two subsequent phases in order to improve the comparativeness with the material. Based on the analysis, the researcher was able to form interview topics about major differences among the selected voluntary-based approaches and their possible adaptability problems. The data acquisition in the aforementioned sections is based on analysis of available literal sources (secondary research). Because of the nature of the experimental land consolidation, there was a limited amount of written data, which is why the actual empirical data acquisition was based on interviews (primary research).

¹ Content analysis is used to interpret meaning from the content of text data, where the directed approach is to conceptually validate or extend a theoretical framework or theory. Such an approach is also labelled as a deductive approach (Hsieh and Shannon 2005).

The second section of the research portrays the aspects of different approaches for the key land consolidation specialists who have the latest field experience in experimental land consolidation. It also provides insights into the adaptability problems of presented aspects. The first phase (acquiring secondary data) consists of the analysis of literal sources, e.g., recent articles, theses, reports and memorandums related to voluntary-based approaches in land consolidation. The analysis provides material to determine the current approaches applied internationally and the current status of land consolidation in Finland. The approaches are later compared to form the set of aspects used in the interviews. During the second phase (acquiring the primary data), empirical data were collected by interviewing key land consolidation specialists involved in experimental land consolidation projects. The perspective was acquired through five interviews (*the respondents² of the survey*) conducted by phone and private meetings. The interviews were semi-structured, allowing the interviewer to adopt a conversational style guided by pre-designed themes (e.g., Kvale and Brinkmann 2008). The interviews were supplemented by personal correspondences, workshops and meetings.

The pre-defined themes that led the discussion were:

- Voluntary participation of land consolidation
- The roles of land consolidation
 - Authorities conduct and lead the land consolidation process
 - The initiative from landowners and other stakeholders
 - Active involvement of landowners and other stakeholders, e.g., co-operation and co-creation of the reallocation plan and launching workshops
- Project area and external lands
- Land banking and land exchange systems
- Land consolidation in the local development context
- Aims of land consolidation and division of costs

The limitations of the study relate to chosen methods, e.g., general limitations of qualitative research and variations of the concepts. As for qualitative research, there is generally no hypothesis for the results, and research is based on minimal pre-thoughts (Eskola and Suoranta 1998, pp. 13, 19). In this case, it is important to evaluate the adaptability of the presented aspects with minimal pre-thoughts. To avoid misconceptions and biased cases, terms (e.g., land consolidation) should be defined for the case. Furthermore, the voluntary approach has a different basis in different variations of land consolidations. In some areas, land consolidation is based on the voluntary approach since there are no immediate needs to improve cadastral outlooks. In other areas, the voluntary approach is based on chances in overall administrative policies. It is important to find approaches with a similar

² Respondents: Konttinen, Kalle. 11.4.2017. 1 h. Chief of Land Consolidations, Southern Finland at National Land Survey of Finland. Mäki-Valkama, Ismo. 16.9.2016. 1,5 h. Chief of Land Consolidations, Western Finland at National Land Survey of Finland. Oja, Hannu. 6.4.2017. National Land Survey of Finland. Pehkonen, Juho. 1 h. 17.3.2016, 12.4.2016. National Land Survey of Finland. Patana, Juha. 6.2.2017. 1 h. National Land Survey of Finland. Potka, Timo. 1 h. 23.8.2016, 2.1.2017. Director of Land Consolidations at National Land Survey of Finland.

basis of development needs.

3 Definitions of basic land consolidation concepts

3.1 Land consolidation in the Finnish context

Currently, there are two main types of land consolidation applied in Finland, a *regional land consolidation* and a *project-based land consolidation*. Land consolidations focus on ownership fragmentation without changing the ownership of the land. Regional land consolidation is most common and best resembles traditional Western European comprehensive land consolidation. Regional land consolidation is mainly applied to improve the fragmented land division of agricultural areas with large quantities of small parcels³ (MMM 2015; MML 2007). Another type of land consolidation is project-based land consolidation, which can be implemented simultaneously with large infrastructure projects to modify existing land division to ease the construction of road or railway. Project-based land consolidation operates with principles

Table 1. Finnish land consolidation phases (Regional comprehensive land consolidation) based on Vitikainen (2003, p. 162) and Vitikainen (2004).

Phase	Description
Preparation	
Feasibility studies	<i>Assessing interested landowners, mainly voluntarily.</i>
Land consolidation procedure	
Inventory and planning	
Project plan (project area), Inventory of the rights and valuation of the land.	<i>Primarily voluntary. Some areas may need to be included compulsorily to form (comprehensive) project area.</i>
Preparation of the reallocation plan.	<i>Devised by land professionals, hearing the interest of participants.</i>
Implementation	
Registration of the plan, demarcation and taking into possession of new parcels.	<i>To finalise the planning.</i>
Costs of the land consolidation.	<i>Partial state funding for the procedure and the improvement works.</i>
Conclusion	
End of the procedure	
Additional processes	
Improvement of agricultural infrastructure	<i>Improvement of the road and drainage network</i>
Governmental land acquisition	<i>Land acquisition before the project</i>
Co-operation with interest groups	<i>Interviews and procedural meetings</i>

³ The trend in the agricultural areas in Finland is the decreasing number of farmsteads and rising of the size of the average farmstead, where average parcel size is 2,37 ha (Hiironen and Ettanen 2013 pp. 10–12; Järvenpää 2017).

similar to regional land consolidation, where the party implementing the project finances the consolidation, but its aim is to reduce the effects of the project for the land division that improves it (MMM 2015; MML 2007; Uimonen 2004).

An experimental land consolidation model was implemented (a farm-based land consolidation) as an alternative for regional land consolidation. A farm-based land consolidation is a faster one to solve land fragmentation problems for farmsteads without the improvement of agricultural infrastructure, e.g., road and drainage network, implemented in a regional model (Potka 2016a, p. 80).

The land consolidation procedure in Finland is based on the Real Estate Formation Act (REFA) and presents land consolidation as a tool to improve land division and the usability of real estates (REFA section 67.1). The procedure is implemented through government organisation, the National Land Survey (NLS). The procedure, including preparation, implementation and reconstruction of the area's capital improvement (improvement of agricultural infrastructure), is conducted by cadastral authorities. The land consolidation process includes three major phases: preparation, planning and implementation. The contents of the phases are presented in table 1.

3.2 The aspects of regional land consolidation

The precondition for regional land consolidation is a strong support among the landowners. In addition, the project must be profitable (Hiironen 2012, p. 2; Potka 2016a, p. 22). The strong support has indicated that almost all the landowners favour the project. The approach may require compulsory participation for some parties to increase the overall possibilities for reallocation. The land consolidation area must form a functional entity (REFA section 69). In regional land consolidation, a comprehensive project area is formed where the parcels are reallocated. In principle, all parcels in the project area are taken into account.

The land division can be improved in land consolidation, e.g., by replacing parcels, increasing parcel size, decreasing the total number of parcels and improving their shape (Hiironen et al. 2009, pp. 9–12). Figure 1 presents a typical

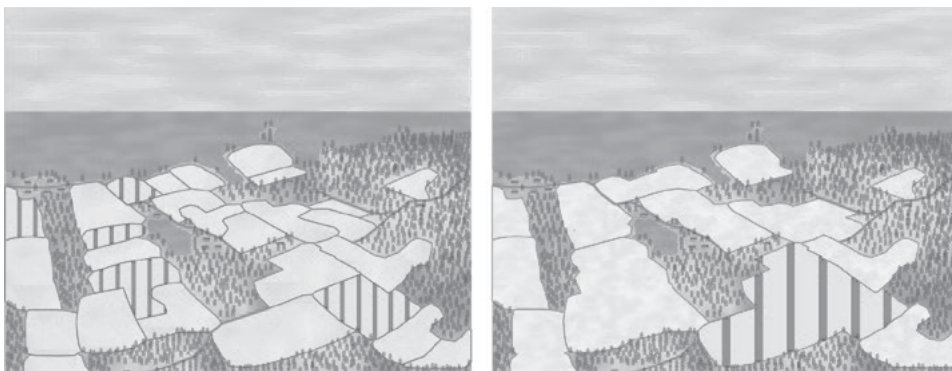


Figure 1. A typical regional land consolidation project area and its reallocation outcome from the perspective of one landowner (highlighted red pattern) (Sulonen 2014).

regional land consolidation area and outcome of the land consolidation from one landowner's perspective.

Since the turn of the millennium, customer friendliness and reducing the length of the process have been targets for the development of Finnish land consolidation (Hyvönen 2001, pp. 331–333; Hiironen 2012, pp. 58–60; Kotilainen 2009a; Kotilainen 2009b). The NLS has conducted several projects to improve customer friendliness as well as to adopt it in its guidelines for cadastral procedures during the 21st century. The challenge in land consolidation processes has been the difference between terms of customer friendliness and complete voluntary participation (Potka 2016b).

There is no state-wide land banking system in Finland, and the land exchange and reserve activity vary depending on the area. The government acquires the lands for the consolidation projects as reserves, and during the hold, it usually leases the land for a market price to local farmers. In project-based land consolidations, the land acquisition is initiated and funded by the party implementing the project, e.g., by the Finnish Transport Agency (Heinonen 2005, pp. 6–7). The activity is based on cooperation with government authorities and state funding for rural area development.

The status of state funding for land consolidation projects had different roles in the past. The possibilities for state funding of land consolidations in Finland gradually increased during the 20th century, when landowners could cover a significant portion of the costs of land consolidation from state funds (Uljas 1983, pp. 147–149; LCFA 81 24/1981). Legislative changes in the beginning of 2015 indicated a turning point. The change in the Land Consolidation Funding Act (LCFA 14 1423/2014; HE 193/2014) decreased the funding possibilities for land consolidation projects, especially for the improvement of agricultural infrastructure, e.g., road and drainage network. With the change of the REFA, improving the road and drainage situation of the region was removed from the land consolidations aims (REFA 554/1995 67§; 1424/2015).

3.3 Farm-based land consolidation in comparison to regional land consolidation

Farm-based land consolidation in Finland is an experimental approach aimed to complement the (traditional) regional land consolidation approach. The approach is based on the same structural principles as regional land consolidation (Potka 2016a). Thereby, farm-based land consolidation cannot be considered a simple voluntary land exchange, but rather can be described as a simplified version of comprehensive land consolidation with a voluntary aspect.

In 2016, NLS decided⁴ that in 11 land consolidations, new farm-based land consolidation shall be tested. The first three currently ongoing experimental land consolidations are modified versions of regional land consolidations that were started as such and later modified as experimental projects for the farm-based

⁴ The experimental projects have been presented and accepted by the Ministry of Agriculture and Forestry (Potka 2016b; Timo Potka, personal correspondence, 30 May, 2016 and 13 January, 2017).

land consolidation. The later projects will already have the experimental status at the beginning (Potka 2016b; Timo Potka, personal correspondence, 30 May, 2016 and 13 January, 2017; Juha Patana, personal correspondence, 6 February, 2017).

The farm-based land consolidation approach is based on voluntary and flexibility principles. The involvement of the participants in the process is voluntary, and the project aims are constructed with the needs of the applicants in mind (Potka 2016a; MMM 2015). Due to its voluntary nature, the project area is usually more incoherent than in regional land consolidations (Potka 2016b). All the landowner's parcels are taken into account (whole farm) when evaluating the reallocation possibilities and not just those locating in the project area (Patana 2017, p. 8; Potka 2016 b). The improvement of agricultural infrastructure, like the local road and drainage network, is not included in the farm-based land consolidation, as it is in regional land consolidation (Potka 2016b). The major differences of the farm-based land consolidation in comparison to regional land consolidation are presented in table 2.

Table 2. Major differences on the project phase of the farm based land consolidation in comparison of Finnish regional land consolidation (table 1). Based on Potka (2016a; 2016b) and personal correspondence with Timo Potka (22.8.2016) and Juho Pehkonen (17.3.2016; 12.4.2016).

Phase	Description
Preparation	
Feasibility studies	<i>Assessing interested landowners, voluntarily (limited feasible studies)</i>
Land consolidation procedure	
Inventory and planning	
Project plan (project area), Inventory of the rights and valuation of the land.	<i>Only from the lands that are voluntary included, all of the landowner's parcels are taken into account.</i>
Preparation of the reallocation plan.	<i>Devised by land professionals with participants. Participants are encouraging in co-operation.</i>
Implementation	
Registration of the plan, demarcation and taking into possession of new parcels.	<i>To finalise the planning.</i>
Costs of the land consolidation.	<i>Limited state funding, stronger role of financial contribution of participants.</i>
Conclusion	
Additional processes	
Improvement of agricultural infrastructure	<i>Improvement road and drainage network is not included</i>
Governmental land acquisition	<i>Land acquisition before the project (important)</i>
Co-operation with interest groups	<i>Interviews, procedural meetings, co-operational workshops led by authorities</i>

The characteristics of the farm-based land consolidation in comparison to regional land consolidation can be formed as follows:

- Voluntary participation in the process
- Non-comprehensive project area, parcels of the whole farm are considered if possible
- Flexibility in methods depending on the case
- Improvement in road and drainage network are not included in the process
- Minimal state funding.

3.4 Land consolidations in the international context

In the Finnish context, the term land consolidation generally refers to physical land reallocation and equivalent cadastral reorganisation of fragmented land areas. The use of both terms, land consolidation and land fragmentation, varies broadly in an international context (Van Dijk 2003; Thomas 2006b). Van Dijk (2003) classifies land fragmentation into five main categories: ownership fragmentation, land use fragmentation, internal fragmentation and the discrepancy between land ownership and use, adding (in 2005) co-ownership fragmentation as a separate type (Van Dijk 2003, pp. 15–18; Van Dijk 2005, pp. 18–19). From these categories, internal fragmentation has traditionally been the main subject of Western land consolidations (Van Dijk 2005, p. 19). The general meaning of land consolidation is to improve land division and promote the appropriate use of real estates by appropriately reallocating parcels, decreasing the number of parcels, and/or by enlarging or improving the shape of the parcels (Vitikainen 2004, p. 26; Hiironen et al. 2009, pp. 9–12). Land consolidation is often classified into rural, forestry, urban, regional or environmental land consolidations (Demetriou 2014, p. 45).

There are fundamental differences in the methodological procedure and in the legality of land consolidations (Thomas 2006b). For example, five types of land consolidations can be applied in Germany alone: comprehensive land consolidation, voluntary land exchange, accelerated land consolidation, simplified land consolidation and land consolidation in the case of permissible compulsory acquisition (Thomas 2014). On the other hand, Eberlin (2015) presents four different approaches for land consolidation: virtual (leasing to one company/farmer or joint production), market-based (leasing and buying/selling), voluntary (exchange of parcels) and comprehensive (rearrangement of parcels).

Virtual and market-based approaches are used in Eastern Europe and Asia. For example, Russia and Ukraine have minor fragmentation problems and only a little experience with land consolidation (Hartvigsen 2015, pp. 188–189, 206). Voluntary land exchanges are used in Central and Eastern European countries that had not adopted the compulsory land consolidation. In Western Europe (e.g., Germany and the Netherlands), voluntary land exchange is an alternative to comprehensive land consolidation (Thomas 2006a; Hartvigsen 2015, pp. 206, 212–216, 256, 266–269). There are cases for land consolidations based on the voluntary approach, for example in Denmark and the Netherlands. Comprehensive land consolidations are traditionally implemented in Western Europe (including in Finland), where market-based or voluntary land exchange approaches are not seen as tools that are effective enough to reduce the fragmentation.

4 Land consolidation approaches selected for comparison analyses

In this paper, two voluntary approaches were selected to provide insights for the voluntary-based experimental land consolidation in Finland. Since the experimental farm-based land consolidation aims to concentrate on a voluntary basis, the voluntary aspect was the main criteria when selecting the international examples for comparison. Furthermore, it was seen as important to look into approaches based on Western European land consolidation tradition, thus having a similar background to Finnish land consolidation. These criteria outline voluntary land exchanges. The cases with recent studies available were favoured.

The first approach is Hartvigsen's (2015) integrated voluntary land consolidation model, which focuses on the unique aspect of Central and Eastern Europe (CEE). The voluntary approach is partially based on the Danish model, where almost all land consolidations are carried out in a completely voluntary process and are based on agreements (FAO 2003; FAO 2004a, p. 21; Hartvigsen 2015, p. 40; Haldrup 2015). Hartvigsen's model provides a general structure for the basis of the national adaptation for CEE countries. The second approach is a new voluntary-based land consolidation approach used in the Netherlands. The approach especially consists of collective decision-making, where the key component is the role of co-operation and co-creation between the participants (Louwsma et al. 2014; Beunen and Louwsma 2016).

4.1 Integrated voluntary land consolidation model

Hartvigsen (2015) designed a land consolidation model⁵ (*integrated voluntary land consolidation*) for former CEE countries to resolve various fragmentation problems caused mainly by large land reforms during the past decades (Hartvigsen 2015, pp. 189–192). The land consolidation model was created since the two classical types of European land consolidations, comprehensive and voluntary, had several weaknesses when applied in the Central and Eastern European situations (Hartvigsen 2015, p. 417). According to Hartvigsen, the comprehensive land consolidation was too expensive for many CEE countries, and voluntary land consolidation alone wasn't enough to ease the fragmentation problem (Hartvigsen 2015, pp. 410–417).

Hartvigsen considers the voluntary approach important because it respects the rights of the landowners and reduces the time and costs of the project. The wishes of the landowners and stakeholders to not participate are respected, even when it would not be economically rational. In the voluntary approach, structural problems are not solved for those landowners that do not participate in the project (Hartvigsen 2015, pp. 412–413, 417). Because of voluntary restrictions, land mobility should be promoted otherwise. Methods such as land banking and two-level project areas allow more flexibility in reallocation with land exchanges.

⁵ The model is presented in a doctoral thesis done at Aalborg University 2012–2015 (Hartvigsen 2015). Hartvigsen analyses e.g. experiences gained from introduction of land consolidation instruments, and the coherence between the land reform approaches applied in 25 Central and Eastern-European countries. Seven of those countries already had ongoing national land consolidation programs while 13 of those countries had not yet an operational land consolidation program. (Hartvigsen 2015.)

A high participation rate is crucial in voluntary reallocation planning. To promote awareness of the project and its benefits, Hartvigsen states that active involvement of the individual stakeholders is important. It is important to understand the incentives of individual landowners to consider and offer solutions they will appreciate. Interviewing single landowners is an opportunity to discuss their perceptions of needs for development. To achieve this goal, a series of direct interviews of the landowners and community workshops will often help. To determine a possible initiative in many cases, it is a good idea to begin with farmers who are present in the community since they are able and willing to farm in the project area (Hartvigsen 2015, pp. 411–412). Furthermore, in Hartvigsen's model, land mobility is assessed based on landowners' interviews to determine parcels for sale, parcels for exchange or reallocation and parcels that are not included in the project (Hartvigsen 2015, pp. 413–414).

Hartvigsen's model uses two-level project areas, including the core project area and the area surrounding it as the secondary project area. Operating within two levels allows for the shifting of parcels outside the core project area, especially for those landowners who only have one or a few parcels. Controlling the process can be applied by allowing only targeted land transactions in the secondary area, which benefits the core project area (Hartvigsen 2015, pp. 414–415).

Hartvigsen (2015) states the importance of land banks in his model to ease the effects of low land mobility. The land markets are usually not solely sufficient for the development of efficient and sustainable agricultural economies (FAO 2004b). The opportunity for a land banking system is good in CEE countries since most have a large reserve of state-owned agricultural land. If the land banking system is not possible, e.g., for political reasons, it is important to offer existing state land available for land exchanges or preferably for sale (Hartvigsen 2015, pp. 415–417). Furthermore, the model utilises the structural development of farms by promoting land sales to farmers willing to increase their production, thereby decreasing the total number of landowners in the area (Hartvigsen 2015, pp. 411).

The important element in the model is the aim to integrate the allocation planning within a local rural development context. Most rural communities in CEE countries have many more development needs than structural problems caused by land fragmentation and small farm sizes that cannot be solved by land re-parcelling alone. Such needs are, for example, rehabilitation of main rural roads, renewal of irrigation systems, tourist path construction and planting of forest lines. Planning should be coordinated with the existing development plan for the community, for example at the municipal level (Hartvigsen 2015, pp. 274, 410).

The funding of the land consolidation often concentrates on the reallocation planning and registration of the agreed land transactions. Rural development needs such as roads and irrigation improvements, etc., are often left out of the funding. Additional funding is needed from different governments or institutions, which is often difficult in practice (Hartvigsen 2015, p. 411).

The major differences of the integrated voluntary model in comparison of the regional land consolidation of Finland are presented in table 3.

Table 3. Major differences on the project phase of integrated voluntary land consolidation model in comparison of Finnish regional land consolidation (table 1).
Based on the model by Hartvigsen (2015).

Phase	Description
Preparation	
Feasibility studies	<i>Assessing interested landowners, voluntarily</i>
Land consolidation procedure	
Inventory and planning	
Project plan (project area), Inventory of the rights and valuation of the land.	<i>Only from the lands that are voluntary included, two-level project area.</i>
Preparation of the reallocation plan.	<i>Devised by land professionals encouraging the participants in co-operation.</i>
Implementation	
Registration of the plan, demarcation and taking into possession of new parcels.	<i>To finalise the planning.</i>
Costs of the land consolidation.	<i>State funding is advised.</i>
Conclusion	
Additional processes	
Improvement of agricultural infrastructure	<i>Implemented local development needs</i>
Governmental land acquisition	<i>Land banking established, if possible</i>
Co-operation with interest groups	<i>Interviews, group meetings, etc...</i>

Major principal characteristics of Hartvigsen's integrated voluntary land consolidation model are (Hartvigsen 2015, p. 416)

- Voluntary participation of the landowners in the project area.
- Land professionals presiding over the reallocation planning.
- Encouragement of the active involvement of landowners and other stakeholders in a participatory process.
- Inclusion of land transactions from surrounding areas in the re-allotment planning when they benefit the outcome of the core project area (two-level project area).
- Land banking application when the land mobility is low.
- Integration of reallocation planning into a local rural development context through the elaboration and implementation of community development plans.

4.2 Participatory land consolidation approaches

The Netherlands has long traditions in comprehensive land consolidations, led by the government's initiating, preparing and implementation of land consolidation. However, a shift towards more participatory and voluntary approaches can be noted in society and governance (Beunen and Louwsma 2016, p. 2). There are

currently two participatory land consolidation approaches that are applied in the Netherlands. Landowners may either individually discuss the development with the process manager on a one-on-one basis (called *facilitated decision-making*), or the landowners are invited to participate and discuss together different possibilities for the land exchanges and development of the area (called *collective decision-making*) (Beunen and Louwsma 2016, pp. 1, 3–5). The individual approach of participants through cadastral authorities is applied in regional land consolidations in Finland. In this context, the method resembles the facilitated decision-making approach applied in the Netherlands. This paper focuses more on the collective decision-making approach, since the group discussion and development aspect are not commonly applied in Finland.

In the Netherlands, there has been a political trend to involve citizens to take responsibility for their own environment and neighbourhood instead of expecting the government to do so (Louwsma et al. 2014, p. 3). As for the responsibility to initiate the processes, there is an option for voluntary participation. Since land consolidation is based on a voluntary approach, not all the landowners are involved, which may limit the land exchange possibilities (Louwsma et al. 2014, p. 6). Notably, the role of the government is substantially different in the land consolidation approach. The government is considered a landowner among other things, and is therefore treated equally with other participants. However, for the government, the allocation aims might have more public characteristics (Louwsma et al. 2014, 5–6; Beunen and Louwsma 2016).

In the collective decision-making approach, landowners and users (farmers) are invited to discuss the new reallocation together in the beginning of the land consolidation process. All the participants take part in one or more group sessions. The major difference in the previous approach is that participants were approached individually, where in the new approach, participants try to find possibilities for land exchange and allocation together through collaborative negotiation. For instance, the group sessions cover verifying accuracy and completeness of the data, participants' wishes for the allocation, land exchange possibilities and consensus on the first allocation draft (Louwsma et al. 2014, p. 5; Beunen and Louwsma 2016, pp. 2–4).

Collective decision-making allows participants to see the complexity of the whole situation and not just their own situation as in individual discussions. However, co-operation requires open discussions about the preferences of their own situation as well, that some participants are reluctant to do. Landowners may not always feel comfortable sharing partly personal information with other actors, since this may delimit their possibilities to negotiate possible transactions and desired outcomes. The method signals the importance of trust among the group (Beunen and Louwsma 2016, pp. 7–9).

Furthermore, to increase the bottom-up initiative, an allotment barometer for rural areas has been developed to show the quality of agricultural parcel structure in a more or less homogenous area. The barometer can play an important role in the discussion about whether it is reasonable to start land consolidation, voluntary or formal (traditional land consolidation) (Louwsma et al. 2014, pp. 3, 7).

Table 4. Major differences in the project phase of participatory land consolidation approach (collective decision-making) in comparison of Finnish regional land consolidation (table 1). Based on Louwsma et al. (2014) and Beunen and Louwsma (2016).

Phase	Description
Preparation	
Feasibility studies	<i>Assessing interested landowners, voluntarily</i>
Land consolidation procedure	
Inventory and planning	
Project plan (project area), Inventory of the rights and valuation of the land.	<i>Only from the lands that are voluntary included.</i>
Preparation of the reallocation plan.	<i>co-created by landowners/stakeholders with the help of land professionals.</i>
Implementation	
Registration of the plan, demarcation and taking into possession of new parcels.	<i>To finalise the planning.</i>
Costs of the land consolidation.	<i>Limited state funding.</i>
Conclusion	
Additional processes	
Improvement of agricultural infrastructure	
Governmental land acquisition	<i>Active land bank system</i>
Co-operation with interest groups	<i>Active involvement of participant and co-creation, e.g. interviews, meetings workshops</i>

As for the land banking system in the Netherlands, the system has always been an important factor for the success of land consolidation. Even in cases without concentrated land masses, e.g., those acquired from shallow seas, dynamic land banking is the mandatory key for the realisation of multi-purpose land reallocation (Damen 2004, pp. 2–4).

In the Netherlands, the local governments point out that farmers who benefit most from a better allocation can be asked for a higher financial contribution. To a certain extent, farmers are willing to contribute to the financing of the project if they have more influence on the outcome of the process (Louwsma et al. 2014, pp. 2–3).

The major differences of the participatory land consolidation approach (collective decision-making) in comparison to regional land consolidation in Finland are presented in table 4.

Based on the aforementioned comparison, major principal characteristics of the Netherland's participatory land consolidation approach can be formed as the following:

- Voluntary land consolidation
- Different roles
 - Landowners have more responsibility for their own environment and neighbourhood
 - State is also considered a landowner
- Different methods to increase initiative and participation.

5 Analysis of adaptability challenges

This chapter presents the adaptability challenges of different voluntary land consolidations in relation to Finnish farm-based land consolidation. The adaptability challenges are analysed based on interviews with key land consolidation specialists of Finland.

5.1 Voluntary approach over compulsory approach

The voluntary approach is a key aspect connecting Hartvigsen's (2015) model, the Netherlands participatory land consolidation model (Louwsma et al. 2014; Beunen and Louwsma 2016) and the farm-based land consolidation in Finland. Since the models rely strongly on the voluntary approach, the aspect is carefully inspected in comparison to the compulsory approach of regional land consolidation.

According to Hartvigsen (2015, p. 413), the voluntary approach respects the wishes of the participants, even when they are not economically reasonable. Based on the situation in the Netherlands (Louwsma et al. 2014, p. 6), the voluntary approach sometimes limits the possibility of exchanging lands, since not all landowners are involved. Hartvigsen, moreover, specifies that the problems are not solved for those landowners not participating in the project (2015, p. 417). Such limitations need to be understood when applying the voluntary approach.

In comparison to regional land consolidation, the comprehensive approach reduces fragmentation by reorganising the land and cadastral divisions of the area completely. The outcome is definite since participation in the process is ultimately compulsory. Due to its voluntary basis, the project area in voluntary land consolidation is often more concise and incoherent, and thereby the expected outcome from the cadastral viewpoint may be less effective. However, on a small scale, the outcome may be significantly beneficial in the viewpoint of single or several farm units. For instance, a professional farmstead that acquired numerous small parcels from various landowners may benefit greatly from land consolidation conducted from its viewpoint.

According to the respondent, the commitment of the participants of the land consolidation process may be significantly greater in the voluntary approach, where the compulsory aspect is generally less favourable from participants' points of view. This viewpoint is one of the strongest advantages of the voluntary approach in regards to the acceptability of the land consolidation project. To outline the differences, the compulsory approach is based more on common good and regional comprehensive improvement, whereas the voluntary approach is based on better acceptability and improvement needs of those willing to contribute to the cause.

To summarise, in the interviews, the voluntary participation provoked comments about the extent of the concept. The respondents saw the voluntary participation of land consolidation as a principle and supportable approach in general that may inspire a better commitment among the participants. The approach was favoured among the respondents, especially since land consolidation needs the strong support of potential participants of the planned project area. However, the respondents acknowledged that if the participant withdraws from the land

consolidation process at any time, the approach is challenging and may cause the process to become non-beneficial for the rest of the participants. One participant stated that in the worst case, unconditional exit options allow participants to threaten the others. The respondents stated that the reason for leaving may be based upon feelings or bad relations with other participants. Interviewees further elaborated on the question of whether participants should be able to drop out after the process has been initiated, even if the process becomes undesirable for the remaining participants. Customer friendliness, a key aspect of Finnish land consolidations, relates the voluntary approach, where the wishes of the participants are highlighted, resting on the fundamental right of landowners to choose the use of their properties; the participants' wishes must not contradict each other. However, the definition requires equal treatment of the participants. One respondent proposed that in practice, the term "voluntary approach" could be presented as either a customer-friendly land consolidation or customer-friendly negotiation process, to avoid confusion.

Regarding farm-based land consolidation, the rules for dropping out of the process should be defined. Most of the respondents stated that the commitment is essential after the reallocation plan has been accepted, especially when the implementation of the plan has begun, since ultimately there will be cases when a participant wants to leave or join the process afterwards. To maintain the voluntary aspect, this problem may be outlined by using agreements for land transactions with participants, that are utilised, e.g., in the Danish voluntary model.⁶ The authorities and participants can make an agreement for necessary land transactions.

5.2 Roles in land consolidation

In the Netherlands, the responsibility to initiate land consolidation is increasingly up to landowners and stakeholders themselves, and furthermore, they are invited to discuss and co-operate (e.g., co-create the reallocation plan) (Louwsma et al. 2014, p. 3, 6). The roles are slightly different in Hartvigsen's (2015) model, in which land professionals preside over the reallocation planning. The initiative in Finland for comprehensive land consolidation is mostly taken by government authorities (feasible studies), whereas landowners are the party applying the land consolidation procedure. At this point, a strong support among the landowners is needed, where the majority must favour the procedure. This requirement is important, especially in comprehensive land consolidations. In the voluntary approach, the support is naturally mandatory. The cadastral authorities in Finland are the party conducting and implementing the procedure, since the role of cadastral authorities is strongly based on legislation (REFA). However, the actual planning is done in co-operation among the participants.

As highlighted by the approach taken in the Netherlands (Louwsma et al. 2014) and in Hartvigsen (2015), active involvement of the landowners and other stakeholders is encouraged to participate in the process. According to Beunen and Louwsma (2016), in the collective decision-making approach, landowners and users (farmers) are invited to discuss the new reallocation together to search

⁶ See, e.g., Haldrup (2015).

for possibilities for land exchange in a collaborative negotiation. In the previous approach, participants were contacted individually (Beunen and Louwsma 2016).

Based on the legislation, respondents saw the roles of the cadastral authorities in land consolidation as stable, and especially as facilitators of land consolidation procedures. The landowners, however, may have increased responsibility, for instance of the preparation, implementation and improvement of agricultural infrastructure. Especially in the latter case, one respondent indicated that the cadastral authority may act as advisor rather than implementer.

Several respondents in the interview highlighted that increasing the participation of landowners is a positive development, and reallocation should be done in deep co-operation with the landowners and cadastral authorities in Finland. This improves the participant's capabilities to influence the outcome. Furthermore, the respondents acknowledged that the responsibility of local development and of the initiating and planning in farm-based land consolidation may be weighted more to landowners and stakeholders from the government and its authorities. To promote the idea in practice, the cadastral authorities can encourage the participants to co-operate and co-create a land consolidation suitable for their aims among themselves. In ideal cases, the cadastral authorities may act more as facilitators for the participants rather than directors of the procedure, but in conflict situations, their roles may eventually be to direct the course of the procedure if necessary. From a legal perspective, the cadastral authority is the party implementing the plans.

To grant the farmers, landowners and other stakeholders more influence over their local conditions, the initiative and involvement should be encouraged. Generally, the respondents are in favour of a land consolidation initiative that originates from landowners, emphasising the voluntary aspect. However, the respondents present that the situation in Finland may be challenging since a great portion of landowners are non-professional actors. One respondent argued that in agricultural areas, participants usually do not have the required technology to fully comprehend the reallocation possibilities in their local area. The respondent also mentioned that some landowners may have lacked land maintenance, allowing the land to degrade and making the appropriate reallocation challenging even for cadastral authorities. In such cases, involvement of the cadastral authorities in preparing and presenting the procedure is crucial. However, some respondents noted that active farmers, young farmers and farmers who have participated in prior land consolidation projects have great potential for applying land consolidation.

In approaches where the landowners and other stakeholders have a notable role in planning and applying land consolidation, a strong social capital⁷ and trust

⁷ Social capital generally refers to the social networks between individuals or groups of individuals; however, the term has various definitions. Generally, the Organisation for Economic Co-operation and Development (OECD) defines social capital as "networks together with shared norms, values and understandings that facilitate cooperation within or among groups" (OECD 2001, p 41). There are some related studies of social capital, e.g., Haldrup (2015) has brought out the significance of social capital in agreement-based land consolidation, and Immonen (2009) has studied the significance of social capital in the Finnish context.

among landowners and stakeholders is highlighted, especially if government authorities have a minimal role in the process. Authorities may take a smaller role if the participants are capable of deep co-operation among themselves. As Beunen and Louwsma (2016) indicated, the co-operation requires an open discussion of the landowners' preferences. As in collective decision-making in the Netherlands (Beunen and Louwsma 2016), the information is partly personal and the landowners may not always feel comfortable sharing it with others since the other landowners may be seen as competitors. The aforementioned problem may appear in Finland, especially among non-professional actors like lessors (Sulonen and Kotilainen 2016).

Despite the challenges, the participants' active involvement and co-operation was seen as a positive and beneficial development, albeit a challenging one. Based on the respondents' propositions to adjust the overall situation, the authorities may provide easy tools for landowners, for instance a web-based interface or informational planning sessions, allowing participants to present self-created reallocation wishes.

Several respondents noted that communities or groups have better resources for land consolidation use as a tool to improve the agricultural situation. The key is to encourage stakeholders and representatives responsible for land use development to more intensively use land consolidation. One respondent highlighted that in Finland, a method is applied in forestland consolidations, in which the state-funded organisation representing forest owners applies and uses land consolidation as a tool to improve forest properties. In conclusion, regional stakeholders and representatives may provide solutions to the challenges in Finland, providing farmers and landowners with a better understanding of the whole complexity of the situation as in the Netherlands (Louwsma et al. 2014).

5.3 The use of the two-level project area and land banking system in the reallocation of farm-based land consolidation

It is obvious that voluntary participation brings challenges to reallocation. To extend the reallocation, Hartvigsen (2015) presents possibilities for land banking and the two-level project area. The same concepts are evaluated from the farm-based land consolidation point of view. In Hartvigsen's (2015) model, there is the core project area and the secondary project area surrounding the core area. Based on the experience of the respondents, the structural nature of the farm-based land consolidation relies more on land exchanges and external lands in comparison to a more coherent regional land consolidation area. While the need for external land acquisition and exchange possibilities seems clear, to maintain the flexibility of land consolidation, limiting the second area may be unnecessary. The flexibility in this sense allows cadastral authorities to consider the situation case by case.

Generally, land banking in the land consolidation context refers to a temporary hold of lands by the government agency in order to provide a land reserve for land exchange and allocation. Consequently, for the CEE countries, Hartvigsen (2015) states the importance of land banks in his approach, since most of the CEE countries have large land reserves. The Netherlands (Damen 2004, pp. 1–2), on

the other hand, has a long history of using land banking in the context of land consolidation. The respondents point out that in farm-based land consolidation, government acquisition and exchange of lands have great significance, allowing for flexibility in reallocation. Several respondents stated that the land exchange system is highlighted in farm-based land consolidation. One respondent stated that having a good reserve of exchange lands leads to good results in the reallocation. Furthermore, it would be convenient to promote land sales between the farmers as Hartvigsen (2015, pp. 411) proposed in the integrated voluntary model. Such actions would limit the number of farmers in the reallocation area.

5.4 Local developments in land consolidation

Hartvigsen (2015) indicates the possibilities of integrating the allocation planning in the rural development context, since most of the rural communities in CEE countries have many more development needs than just structural problems. The needs are applicable in other rural areas as well, including areas in Finland. For instance, the improvement of agricultural infrastructure caused by reallocated parcels is included in regional land consolidation in Finland. Based on the respondents' experiences, the actions correspondingly take a considerable amount of time and usually widen the group of participants. According to the respondents' experience, there are some experimental projects involving local development needs in land consolidation, for instance environmental and landscape protection, but the overall experience of the context is minimal.

The respondents saw that there is no immediate need to implement additional local development tasks into land consolidation. Since the additional local development tasks usually extend past the duration of the process and require a more coherent reallocation area and participant pool, possibilities of including additional local development tasks are limited in farm-based land consolidation. Thereby regional comprehensive land consolidation provides a better basis for such aims when compared to farm-based land consolidation.

As NLS had planned, farm-based land consolidation does not include capital improvements traditionally included in regional land consolidation, e.g., drainage and road construction (Potka 2016b). The responsibilities of local development are weighted more from cadastral authorities to landowners and farmers, allowing land consolidation projects to be conducted more quickly and generally with less funding. In such cases, the aforementioned tasks may be carried out in other processes improving local needs. Furthermore, some respondents noted that the cadastral authorities may act as consultants for the participants in such improvement works. Funding may also be directed from other government sources. However, it is possible to include local rural development aims in the project implementation to some extent if the landowners are willing to fund them.

5.5 Sources of land consolidation funding in Finland

State funding in Finland is based on the societal benefits. When direct financial support possibilities of the state decrease, other sources of funding are needed. In the Netherlands (Louwsma et al. 2014), it is reasonably assumed that farmers who

benefit most from a better allocation can be asked for a higher financial contribution to conduct the land consolidation. The respondents acknowledged that funding in farm-based land consolidation may come directly from participants, stakeholders or other groups representing them if the party has a greater possibility to determine the aims of land consolidation. As for a general statement of the respondents, the project should be economically beneficial for financiers without economic support of the state. In terms of financing, if the funding responsibility shifts more towards participants from the government, the participants should have more influence in the process and its aims.

6 Conclusion

The aim of the research was to provide insights of voluntary-based approaches in different countries and compare their major differences and similarities in relation to the traditional land consolidation model of Finland. Hartvigsen's model for the CEE countries and the Netherlands' participatory land consolidation approach (collective decision-making) were selected for comparison. The later comparison of the models was to evaluate adaptability issues of the aforementioned models or their aspects if implemented in the Finnish farm-based land consolidation.

The aspects found focus especially on voluntary participation and roles of land consolidation. The voluntary approach strengthens the roles of landowners and other stakeholders in contrast to the government in terms of local responsibility of land improvement. The decreased role of the government increases the significance of co-operation and initiative among the participants. Generally, voluntary participation was seen as a positive development since it improves the commitment of the participants. Such actions have positive effects on the acceptability of the land consolidation.

The main issue with the voluntary aspect is the extent of the definition of voluntary participation. More specifically, there is a challenge if any of the participants can unconditionally drop out of the process whenever they please. In such cases, the process may become unbearable for the remaining participants. For instance, the costs of land consolidation may exceed its economic benefits, or there may be no reasonable reallocation available. To prevent such situations, mutual rules of commitment should be defined to ensure equal treatment for all participants. To maintain the voluntary aspect, an agreement-based approach might be applicable, as in Denmark. However, regarding flexibility and co-operation principles, exceptions to the rule should be allowed with the consent of the other participants and authorities.

Cadastral authorities may legally lead land consolidation processes in Finland. They have a directing position, for example in reallocation, negotiation and decision-making. To implement the co-operative aspect with and among the participants, cadastral authorities may encourage participants to co-create the planning of the project and to devise the plan as much as they are capable. Even so, the role of cadastral authorities should continue as one of leadership in land consolidation, whether they are facilitating or directing the procedure. The overall development should focus on increasing co-operation and co-

Table 5. *The adaptability problems of presented aspects and propositions for actions used in farm-based land consolidation in Finland*

Aspect of the approach	Adaptability challenges	Proposed actions
Voluntary participation	<ul style="list-style-type: none"> – The concept of voluntary participation needs definition. When or in what situations the commitment of the participant is required. Relate to customer-friendly principles (NLS). – May improve the acceptability of land consolidation. – May limit the reallocation possibilities. 	<ul style="list-style-type: none"> – Voluntary participation of the process is implementable, but rules for exiting should be defined. – If the voluntary approach is maintained, an agreement-based approach may be applicable.
<p>The roles of land consolidation</p> <ul style="list-style-type: none"> – Authorities conduct and lead the land consolidation process. – Initiative from landowners and other stakeholders. – Active involvement of landowners and other stakeholders, e.g., co-operation and co-creation of the reallocation plan and launching workshops. 	<ul style="list-style-type: none"> – Cadastral authorities may promote co-operation and co-creation among participants in order to plan the reallocation, acting more like conductors of the procedure. However, the role of the authorities is eventually to direct the procedure. – Increasing the involvement and co-operation among participants and with authorities is a positive development. Greater significance of social capital among the participants. Should be constantly developed and encouraged in future land consolidations. – Overall, the responsibility of local development may be weighted more towards landowners and farmers. 	<ul style="list-style-type: none"> – Cadastral authorities conduct the procedure and promote the involvement and co-operation among the participants. – Participants devise the reallocation plan as far as they are able. – Ways of increasing involvement, co-operation and co-creation of and among participants should be constantly investigated.
Project area and external lands	<ul style="list-style-type: none"> – The project area in the farm-based land consolidation is often more concise and incoherent, increasing the significance of the outer layer. – The need to limit the second project area may be unnecessary. – External lands are essential for suitable reallocation. 	<ul style="list-style-type: none"> – Use of external lands for land exchanges is maintained. – Cadastral authorities may evaluate the extent of the second project area by case.

Land banking and land exchange systems	<ul style="list-style-type: none"> – Land exchange has great significance locally. – Requires funding and land reserve. 	<ul style="list-style-type: none"> – Method used in regional land consolidations is adaptable to farm-based land consolidation.
Local development and improvement of agricultural infrastructure	<ul style="list-style-type: none"> – Possibilities are numerous, but time consuming, and they require additional funding. – Is better fitted for regional land consolidations. – Improvement of the road and drainage network are not implemented into the farm-based land consolidation. – The aforementioned tasks may be conducted in processes separate from land consolidation. 	<ul style="list-style-type: none"> – Not implemented, but cadastral authorities may guide or act as consultants for participants to reconstruct the road and drainage network. <p>The process is separate from land consolidation.</p>
Financing the land consolidation	<ul style="list-style-type: none"> – State funding for land consolidation has less significance and other sources, e.g., private funding, have greater significance. <p>Investors financing the process should have higher possibilities to determine the aims of the project.</p>	<ul style="list-style-type: none"> – Non-government sources provided needed funding. – It should be investigated whether professional farmers are willing to invest in the project.

creation among participants. The overall initiative of the participants is seen as favourable, but it may become a challenge due to the various aims of professional and non-professional landowners (farmers). Groups of potential landowners and stakeholders should be identified based on their motives for land consolidations. Farm-based land consolidation is a tool for farmers and may focus just on professional farmers who wish to increase their production and are willing to pay for it. Farm-based land consolidation relies on land exchanges and external lands available to the project; these were seen as key features in land consolidation and should be part of the process. The improvement of agricultural infrastructure is included in regional land consolidation, but not in farm-based land consolidation since it requires more funding and takes time to implement.

Government funding for land consolidation has outlined its public nature. Therefore, the role of state funding is different in farm-based land consolidation, where the aim is to acquire funding only for procedural costs from the government. The key aspect is to find other sources of funding. Professional farmers or joint farmers may be more interested in investing in the improvement of their property structure if they can have more influence on the outcome. To summarise, the general view of the adaptability problems of presented aspects and propositions of recommended actions to be used in farm-based land consolidation are presented in table 5.

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HE 227/1994 Hallituksen esitys Eduskunnalle kiinteistönmuodostamista koskevan lainsäädännön uudistamisesta (HE 227/1994)

CRE Code of Real Estate (540/1995)

REFA Real Estate Formation Act (554/1995).

Change of the Real Estate Formation Act – orig. *Laki kiinteistönmuodostamislain muuttamisesta* (1424/2014)

LCFA14 Act of subsidizing the land consolidations – orig. *Laki uusjakojen tukemisesta* (1423/2014)

LCFA81 Act of subsidizing the land consolidations – orig. *Laki uusjakojen tukemisesta* (24/1981)

MO Ohjesääntö maanmittaustoimesta, tilusjako- ja verollepanolaitoksesta sekä pituus-, astia- ja painomittain vakaamisesta (15.5.1848)

PUBLICATION IV

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Sulonen, K., Kotilainen, S., Riekkinen, K.

Land Use Policy, 90, 2020
<https://doi.org/10.1016/j.landusepol.2019.104209>

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Customer-oriented approach in cadastral procedures – Case study from Finland

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ARTICLE INFO

Keywords:

Customer-orientation
Real property development
Public processes
Land use
Cadastral

ABSTRACT

This paper is presenting research on with possibilities and benefit of applying a customer-oriented approach in public cadastral procedures.

Public service providers have raised awareness towards customer-oriented approaches in their procedures during recent decades. This study discusses the relevance of adopting a new approach in cadastral procedures by presenting a new method to obtain a subdivision procedure. This is done by conducting a literature review followed by a description of this new method in Finnish local government, the city of Tampere. After that, the study presents views of customers involved in the procedure collected by interviews. The results show that customers of the subdivision process value direct contact with authorities to ensure their interests to be taken into consideration. Eventually, the study proves that new co-operative methods with and within authorities are essential as well re-evaluating organisational culture values and methods.

1. Introduction

Customer-orientation is an interesting issue in the use of public services. The issue mainly reflects on the values of the public sector, especially in comparison to the private sector. For instance, Chen et al. (2004) imply the public sector might encounter different challenges to private sector in meeting the needs of customers. In particular, fairness justice and transparency are perceived to be the ultimate principles of the public sector. According to Fountain (2001), there is a paradox where customer service techniques and tools applied to government may lead to increased political inequality, even if some aspects of services are improved.

As competition increases and customers become more demanding, service organisations recognises the need to become not only more marketing-oriented but also customer-oriented since the term is associated with market orientation (Price and Brodie, 2001). Andreassen (1994) claims that if public services can offer high utility for their users' resources (e.g. customer satisfaction), the need to deregulate or privatise public services or markets will be reduced. Altogether, satisfying user requirements is recognised as a critical success factor for organisations aiming for progress and prosperity (Todorovski and Lemmen, 2007). The recognised challenge lies in offering public services more in line with the needs of the users with fewer resources and increased user

expectations. The issue is present in most European countries, where the public sector is very large and comprehensive and the governments encounter challenges in maintaining the dynamic public sector in the future, for instance due to reduced tax revenue (Andreassen, 1994). As for example, Muggenhuber (2006) argues that increasing economic pressure demanded to focus public administration's attention on citizens' interests, advocating a customer-orientation comparable to the private sector. Furthermore, Salge and Vera (2012) promote benefits from innovative activity in the public sector for new perspectives.

Nwankwo (1995) states that many organisations have difficulties with the inappropriate vision of customers and their needs, since the service means a lot more than the delivery of a personal skill. For instance, does the organisation view itself through its customers' eyes or through its products, and does the organisation see itself as producing products or as a customer-satisfying organism? (ibid 1995). Farley and Webster (1993) and Brady and Cronin (2001) describe customer-orientation as a set of beliefs that puts the customer's interests first while not excluding those of all other interest parties. In her studies of customer-orientation in land consolidation, Wallius (2007) suggests customer-orientation was perceived to clarify the needs of the landowners, hear their wishes or opinions, and ensure the participation and co-operation of landowners, utilising local knowledge and equal and fair treatment.

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The cadastral system and its maintenance are facilitated by public administration in most countries and is also key to the economic functioning of society. One part of the system is the maintenance of the system by altering rights, restrictions and responsibilities e.g. by subdivision procedures. (See. Niukkanen, 2014). There have been similar discussions on reforming the cadastre on customer-oriented principles (e.g. Steudler, 2002; Markkula and Dipoli, 2006). Because of the need to develop new methods to maintain and improve public services, alternative voluntary approaches are being tested in cadastral processes, for instance in land consolidation procedures in the Netherlands,¹ in Central and Eastern Europe² and Finland.³ Notably in the Netherlands, the participatory approach involves strong co-operation and a co-creative element between authorities and participants (see Louwsma et al., 2014; Beunen and Louwsma, 2016).

1.1. Scope of the research

To elaborate the issue, there are discussions in Finland on how to overcome the challenges of the public sector in many perspectives for instance on improving the durability of city planning (see Ahonen, 2017) or cadastral procedures. The future of Finnish cadastral system in cadastral processes and cadastre itself are under discussion (see e.g. Riekkinen et al., 2016; Krigsholm et al., 2017) for example on how changing uses of cadastral information affects the administration dynamism (Krigsholm et al., 2018). One basis of the discussion is that in comparison with other Nordic countries the overall duration of the subdivision in Finland was clearly the longest (Eriksson, 2007).

Subdivisions are one of the most common types of cadastral procedures in general (see e.g. NLS, 2018 and Sevatal and Hegstad, 2006). However, despite their frequency in the field, this area has remained rather unstudied in cadastral sciences, to the authors' knowledge. This article aims at filling this gap by providing useful information and background for more streamlined public processes with design principles of including customer-orientation into public processes. This article contributes to the field of land administration as public administrative process by providing support for efficient changes on government-led cadastral processes, by presenting an example.

1.2. Research problem and definition

The research problem can be divided into three questions: What does customer-orientation mean in subdivision procedure? (Q1) How can the customer-orientation be improved in subdivision procedure? (Q2) What are the benefits for applying a customer-oriented approach in subdivision procedure? (Q3). The study answers the first question by analysing available literature of the topic, defining concepts to this article e.g. the customer in this case, and the second question by analysing methods used in an experimental model of subdivision in specific case. The last research question is answered by backing of the first two questions with empirical data of those customers defined in earlier.

The definition of customer connects the research on concepts related to service development on public administration and private enterprises. However, defining a customer in public processes is unstraightforward and should be examined by case. For instance, all stakeholders can be regarded as the public organisation's customers (Chen et al., 2006). In cadastral processes, there are multiple interest-parties in different roles like private landowners, land developer, utility companies, various public organisations, or citizens, etc. (stakeholders).

¹ A participatory voluntary approach in the Netherlands (see Louwsma et al., 2014; Beunen and Louwsma, 2016).

² Agreement based / integrated approaches in Denmark and Central and Eastern Europe (See Hartvigsen, 2015; Haldrup 2015).

³ Farm based voluntary approaches in Finland (see Sulonen and Kotilainen, 2016).

In this context, to gain a perspective for the study following statements can be made. The landowner or land developer may be the one who is responsible for applying the process based on their need, where neighbours or other public organisations may have diverse interests. Significantly, Todorovski and Lemmen (2007) make a distinction between external and internal cadastral data users for customer satisfaction surveys performed by Dutch Kadaster. In this perspective, our focus is on external users of cadastral services. Further, Krigsholm et al. (2018) divide external users in authoritative and non-authoritative users. An analysis of the customer identification is presented later (chapter 3.1), but in this context the customer is considered a party applying the process, outlining also authoritative-users.

2. Study design

The study evaluates methods used in subdivision procedures in relation to customer-orientation by utilising subdivisions conducted in Tampere, Finland in 2017. In this research, the main customer of the procedure is the applicant or party representing the applicant. Customer-orientation to the other interest parties of the procedure requires additional studies.

The study is divided into two phases. The first phase of the research concentrates on answering the first research question by defining concepts of customer-orientation and public subdivision procedures in this context. The data acquisition in the aforementioned phase is based on analysis of literary sources (secondary research).

The second phase of the research answers the following research questions by analysing methods used in the experimental subdivision procedure in a viewpoint of customer-orientation. Since there was only limited written data related to customer experiences available from the analysed subdivisions, themed interviews with the customers of the appropriate field were conducted to provide such data (primary research).

As in qualitative analysis, the aim of the research is to highlight possible factors affecting customer-orientation and analyse their reactions if used in actual processes. Additionally, to better understand the framework of the research, the key terms are defined for the case and the system upon which the research is primarily based is acknowledged.

The workflow diagram (Fig. 1) explains research structure in chronological order where the first phase consists at concepts of customer-orientation and public subdivision procedures for the research (Chapter 1–2 & 3–4) and the second phase an empirical study (themed interview) (chapters 5–6).

2.1. Customer interviews and analysis

To evaluate how the used methods in experimental subdivision affected customer-orientation, we interviewed customers who participated in the project. Since the data were collected primarily through interviews, open-ended questions were used (Hsieh and Shannon, 2005). The interview-frame was constructed, based on discussion themes formed into questions (semi-structured interview), where the themes were derived from the first research phase (framework) and prior customer feedback from the development project. Based on Kvale and Brinkmann (2009) the semi-structured interview provided efficient and convenient means of gathering information and allowed to disclose important facets of the customer perspectives and perceptions of subdivision. The pre-designed themes, which allowed the interviewer to adopt a conversational style during the interview, are presented in Appendix 1. As for interpretation of the data, a thematic analysis was used to examine emerging topics from the survey data. By distinguishing the content analysis from thematic analysis, their differences lay in the possibility of quantification of data in content analysis by measuring the frequency of different categories as Vaismoradi et al. (2013) suggest, where in this case the outcome was purely qualitative favouring themed analysis. Thereby, a further thematic analysis was

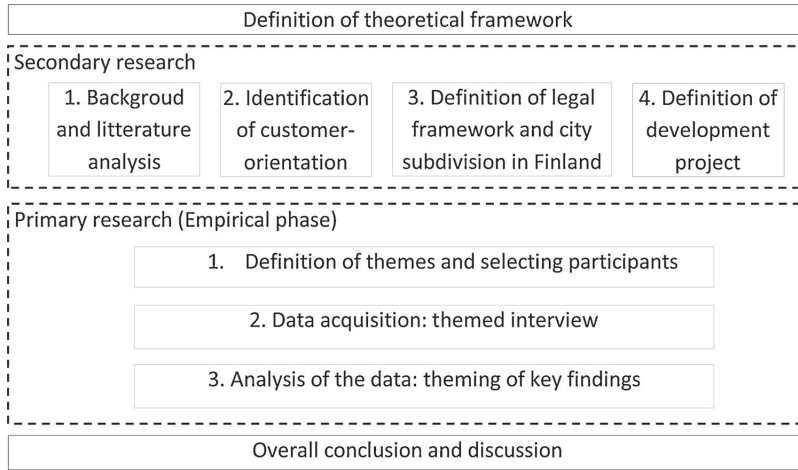


Fig. 1. The Workflow diagram of research structure.

Table 1
Different groups present in the interview sample.

Group	Notes
More experienced and less experienced subdivision applicants.	The less experienced had to establish new contacts with the authorities where more experiences usually had existing contacts with them.
Private and public representatives	Public representatives conveyed experiences of third-party land developers (<i>lease holders as their own customers</i>)
Large or medium scale landowners	Large scale landowners in the city developed generally block size or larger landmasses, where medium scale landowners generally developed partial block areas or single plot areas

used to identify key categories that summarised the interview data.

Participants were selected from the contacts of completed subdivision procedures in the city of Tampere in 2017 to ensure they had experience of both traditional and experimental procedures for the comparison of tested methods. A factor that limited the number of interviewees was that single-plot owners or small business enterprises apply or participate rarely in subdivision procedures, thus providing no compatible interviewee who participated in both subdivision models. Representatives of larger land-owners or enterprises participate more commonly in such procedures, providing qualified participants for the interview such as private construction companies, joint alliance model representatives and public communities like municipalities. The total number of eight interviews were conducted (respondents of the interview) representing eight different parties.

The majority of selected parties were companies operating in the house-building business (6 parties), but a representative from local government as a major (public) landowner and a representative from a joint alliance model for constructing a light railway system were included. The experience of the participants from the examined field varied from several to many years and also varied in terms of involvement in different types of subdivision cases. The participants were individually interviewed in their offices (separate meetings for ½-1 h) and the interviews were recorded.

The significance of including local government as landowner in the interview was to add diversity to the focus group, since they operate in many cases with leaseholders developing lands for their purposes. The local government is major landowner in the area; thereby land lease is common in the area. The sample would allow experiences of several groups presented in Table 1.

The key factor was to test out different methods in experimental process, allowing to verify and analyse customer experiences on them. In this context, selected participants represented major actors on a

studied area who required subdivision services. The single-plot owners or small business enterprises were not directly included.

3. Customer-orientation in public service

To study customer-oriented perspective in public processes, it is essential to firstly identify for instance who are the customers and how to satisfy their needs. In this perspective, the model for a customer-oriented service system (Chen et al., 2004)⁴ for the public sector and implications for customer-oriented organisations (Kohli and Jaworski, 1990) are utilised to construct a framework to define customer-orientation in public services for this case (Fig. 2).

3.1. Identifying customers

The definition of customer is a key component to define their status, needs, etc. In this context, internal and authoritative users of cadastre are not included based on Todorovski and Lemmen (2007) and Krigsholm et al. (2018) distinctions.

In the private sector, the customer is generally the party buying goods or services that the private enterprise produces. The categorisation can be identified for instance as internal-users (creating and

⁴The model for a customer-oriented service system for the public sector, including the following five-stage sequence of system design and management.: 1. customer identification – the public agency identifies its customers; 2. customer-needs survey – the public agency focuses on customer needs and customer voice; 3. service-system design – the public agency develops the service system and process to meet customer needs; 4. service delivery – the employees in a public agency deliver service to customers; and 5. recovery – the public agency has an effective mechanism to deal with customer complaints. Chen et al. (2004 p. 415, 417)

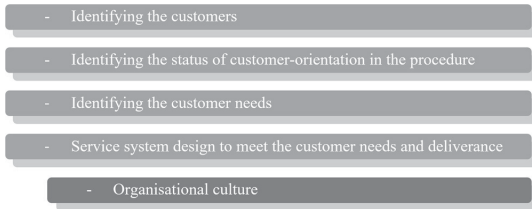


Fig. 2. The framework of customer-oriented services for this research derived from Chen et al. (2004) and Kohli and Jaworski (1990).

producing the products and services) or external-users (users of the product and services) (Todorovski and Lemmen, 2007). In the public sector, the definition of customer is more difficult or the actual term itself may be inappropriate. The challenge is that, not all customers will pay for the public services directly (Wisniewski and Donnelly, 1996).

In public processes, a perspective can be gained by examining the interest parties of the processes. For instance, the ownership right may be seen as a central right to which other types of rights may either be beneficial or restricting (see Paasch, 2012). Thereby, Finnish real-estate formation legislation defines the landowner applying the cadastral procedure (e.g. subdivision)⁵ (CRE⁶ section 6) and in some cases, the leaseholder as the participant (REFA⁷ section 22). However, the applicant is not usually the sole participant of the process. Finnish legislation defines the interest parties further by stating that the applicant and any other party whose rights the procedure immediately concerns constitute interest parties in the procedure (REFA section 17). The other interest parties involved in the procedure may therefore also have a status in the procedure.

The applicant usually has the strongest interest in conducting the procedure. The aforementioned legislation regulates that the costs of cadastral procedures are divided between the interest parties to be paid according to the benefit they have obtained from the cadastral procedure (REFA section 209). Most commonly, the party benefitting from the procedure is the applicant.

Identifying the customers in public processes is not self-explanatory and must be specified and acknowledge the strength and limitations of the specification. In this context, the applicant (of REFA) is defined as a customer who has usually has the strongest interest of completing the procedure and covers the accumulated costs. The definition excludes other interest parties who may have different needs. However, such needs may focus more on the outcome of the procedure than the methods of the procedure itself. Further studies are needed if the definition is enlarged.

3.2. Identifying the current status of customer-orientation

The customer-orientation in public sector can be seen in many ways. For instance, Fountain (2001) evaluates the problem as paradoxes of customer service in the public sector where she states the aggregation of individual preferences may weaken perceptions and the understanding of the fundamental obligations of citizens and public servants. Furthermore, Andreassen (1994) argues that, to offer high utility, the public sector must be more market-oriented, i.e. offer more differentiated services. He says that local governments' long-established practice of giving one homogeneous offer to all users is a major challenge in this strategy.

⁵ In Finnish legislation a cadastral procedure is a procedure conducted by government or local government. There cadastral procedures are defined in the Real Estate Formation Act (REFA). For instance, the subdivision is considered a cadastral procedure (REFA section 6).

⁶ Code of Real Estate (540/1995).

⁷ Real Estate Formation Act (554/1995).

In modern times, the socio-cultural environment of the (Finnish) cadastral system has changed towards a customer-oriented approach (Riekkinen et al., 2016; Krigsholm et al., 2017; Kotilainen, 2014). To inspect customer-orientation from a viewpoint of Finnish subdivision, principles are mentioned in the preparatory work of the Real Estate Formation Act (REFA). For instance, government services should be organised such that participants are not required to participate in tasks designated for authorities, and dealing with matters in the procedures is arranged so simply that citizens can usually manage to control their interests by themselves (HE 227/1994). Hyvönen (1998) suggests that the principle highlights the customers' needs during the procedures rather than the actual purpose being a form of the procedure. He says the services must be arranged from the customer's point of view in a flexible and service-friendly way.

3.3. Identifying customer needs and designing a system to meet them

Depending on viewpoints e.g. definition of customer-or local current legislation, customer needs may vary between processes. In this case, the need of the applicant of the subdivision procedure is studied.

To identify customer needs, authorities may use their experience and customer feedback to gain assumptions of them, but the outcome is arbitrary. Chen et al. (2006) imply that public organisations find it difficult to interview real customer needs and they should, for example, conduct interviews systematically, scientifically, and periodically. Price and Brodie (2001) imply it is easy to inadvertently improve performance in areas that are not important to customers or equally, improvement might be achieved, but the customer may not notice. Therefore, the voice of the customer needs to be used to frame the project in the first instance (ibid). An important source of becoming accustomed to real customer needs comes from the customers themselves. Thereby, this justifies the interview of the customers, conducted in this study.

The customer's need may derive from the overall objective, especially in chain of multiple processes. In case of Finland, according to the Land Use and Building Act (LUBA section 81) a key prerequisite for applying for a building permit in urban areas is completed subdivision of plots (areas of binding plot division). Since the procedure is required for the aforementioned tasks, a subdivision is usually initiated when there is a need to apply for new building permits, for example for new constructions or renovation projects.

Svensson (2018) describes the significance of information quality in the use of the Real Property Register⁸ in Sweden, allowing authorities to co-operate and make quick decisions, thus reducing the overall lengthy process of building housing until the residence is in place. It is therefore important for authorities to discuss the reasons why the subdivision procedures in urban areas are applied to allow better understanding of customer needs.

3.4. Service system design to meet customer needs and deliverance (implementation)

Managers in public agencies should focus more on developing processes to meet customers' service needs, since meeting such needs is the most important issue in designing any service system (Chen et al., 2006). In this approach, a new design of existing subdivision procedure (the service) is introduced. The structure and methods of the subdivision and the new design are presented later in Table 3.

In addition to system design and management, the service must be delivered to the customers, e.g. by the employees in a public agency (Chen et al., 2004). Furthermore, Chen et al. (2004, ibid) highlights the significance of fostering efficient organisational culture, though

⁸ E.g. to use cadastral parcel units as base unit to for land use or land cover related information (see. Jansen, 2006).

changing the culture may be difficult.

4. A development of subdivision procedure in the domain of local government in Finland

This section describes the methods of cadastral procedures in Finland. Subdivision is conducted solely by authorities, either by governmental authority⁹ or local authority (municipality), based on where the land is located. However, the applicant of the process is typically a land owner. The procedure differs slightly based on which authority conducts the procedure. For instance, ownership right (on land/real estate/property) is always registered by the NLS. The development process described in this context focuses on subdivision procedures conducted by a municipality (the City of Tampere). The subdivision procedure is described later in Table 1. The procedure begins when applied, mainly by a landowner or their representative¹⁰ (as customers¹¹ in this context), if they aim to alter the dimensions of their real property. The basic form of the subdivision procedure is described in Table 1.

4.1. The experimental subdivision procedure - part of development process

Because of the need to investigate possibilities for customer-oriented approaches, a development project (experimental subdivision) was launched as part of the land use development programme of the City of Tampere, Finland, at the beginning of 2017. The aim of the programme was to embrace customer-oriented values and efficient methods in public land use processes. The project utilised an experimental approach, where alternative methods aiming to improve the aforementioned values were tested in ongoing processes, thus signifying that there were parallel processes in use: experimental and traditional.

The elements tested in the experimental procedures were based on improved efficiency principles and customer needs, derived from direct customer feedback and later from short customer interviews in 2017.¹² The feedback and interviews indicated that customer needs concentrated on having an efficient and straightforward procedure that held to its timetable, so methods focusing on non-complexity and shorter duration were applied. Based on the customer needs two principles were used for designing the experimental subdivision procedure: the focusing of the applied procedure and decreasing the duration of the procedure. A more detailed description of applied methods and outcomes of the development process is presented in Table 2.

The decreasing the duration of the procedure was primarily achieved for two reasons. Firstly, by better interaction between the cadastral authorities and customers allowing them to compose needed tasks as soon as possible. Unnecessary steps were left out e.g. additional discussions, meetings in the middle of the procedure or elements of the procedure e.g. appeal periods. Secondly, shortening the waiting periods, therefore limiting the need to get acquainted to the task multiple times.

As an outcome, the duration of the average cadastral procedures in the city of Tampere, reduced from 117 days in 2016 to 17 days in 2017 as well as 16 days in 2018.¹³ The reduced duration of one procedure and increased efficiency allowed the cadastral authority to allocate

spared resources to other purposes like more complicated procedures improving the quality of the cadastre.

4.2. Methods of the experimental subdivision procedure in contrast to the traditional one

To completely highlight the differences, the traditional and experimental subdivision procedures are compared (Table 3). The comparison is constructed on the basic form of public subdivision procedure based on Mattsson's (2011) categorisation of cadastral procedures in Northern Europe.¹⁴ The subdivision procedure is divided into four phases: initial preparation, preparation within the actual procedure, cadastral decision and registration and conclusion in the form of registration of ownership.

An assessment of customer needs was the first element implemented in the experimental subdivision procedure to find out customer needs case by case. The assessment was principally carried out by contacting the customers by phone, email or direct meeting whenever possible to uncover their needs.

The forming of new real properties is the basis of subdivision procedure. Other elements like demarcations and new rights were introduced in the procedure with the customers' consent. The option was set, since it gave flexibility to the procedure.

In this context, it is essential to distinguish differences of physical demarcation (e.g. land identification and measurement) and legal demarcation (defines property rights in consent of neighbours). For instance, the mandatory legal demarcation may lead to underutilising and overdemarcation, where in particular, owners may inefficiently anticipate boundary-related litigation. In practice moving towards voluntary land titling and parcel demarcation, is a universal effort. (Arruñada, 2018).

5. Results and analysis of the customer interview

This chapter presents the results of the customer interview conducted and analyses the viewpoints of customer-orientation in both the traditional and experimental procedures.

5.1. Customer needs

To define customer needs for the subdivision procedure, landowners and their representatives operating in Tampere were asked why they applied for the procedure and what they expected from it. The participants acknowledged that the need to apply for subdivision derives from the need to apply for a building permit for the site. The need reflects the requirements in Finnish legislation in the areas of binding plot division,¹⁵ where a building permit may not be granted if the plot has not been entered in the Real Estate Register (LUBA Section 81).

There were needs concerning how the procedure was conducted. A respondent indicated the importance of having the procedure conducted as quickly as possible or at least knowing the estimate of the duration of the procedure as accurately as possible. Several respondents pointed out the importance of a fluent process and the easy reachability of authorities responsible of the procedure. The need to receive guidance from the authorities during the procedure was highlighted by multiple responses, especially when the timetable for the procedure is

⁹ The National Land Survey of Finland (NLS).

¹⁰ A party applying the procedure is mainly the landowner or leaseholder stated in Finnish Real Estate Formation Act (REFA).

¹¹ By definition in chapter 3.1.

¹² Short interviews were conducted with three selected customers to gain base data for the upcoming experimental procedure. The customers represented different construction companies (Skanska, YIT, Lujatalo) operating in the city of Tampere and various other local authorities.

¹³ In 2016, 66 cadastral procedures were conducted in the domain of the city of Tampere (applying traditional methods). In 2017, 56 and in 2018, 116 cadastral procedures applying experimental methods were conducted.

¹⁴ Mattsson compares procedures in Denmark, Norway, Iceland, Sweden and Finland. Globally, conducting cadastral procedures varies greatly based on, for example, different national legislation, historical background, etc. The system in Northern European countries involves public authorities but varies from private surveyor involvement (e.g. in Denmark) to only public surveyor involvement (e.g. in Sweden and Finland). (Vitikainen, 2004; Mattsson, 2011).

¹⁵ In the domain of the local authority of City of Tampere, binding plot division is applied in every block (LUBA Section 78).

Table 2

A description of principles of concentration on the applied procedure and decreasing the duration of the procedure and methods used in them.

Basic principle	Method	Effects
Concentration on the applied procedure.	Demarcation of borders is separated from the subdivision procedure. (Possible in urban zoned areas with a binding plot division plan, REFA section 185.1).	The demarcation can be applied later if needed.
Concentration on decreasing the duration of the procedure.	No formal convening for the procedural meeting. The participants agree on informal invitation (possible if all the participants agree, REFA section 170.2).	Affect the duration of the subdivision procedure. Affects the duration of the procedure since otherwise a formal letter needs to be sent 10 days prior of the meeting and allows better flexibility. The method is more easily obtainable if demarcation and subdivision are dealt with in different procedures.
	No 30-day appeal period after the end of the procedure (possible if all participants agree, REFA section 192.1).	Affect the duration of the procedure considerably. The agreement is more easily obtainable if method 2 is applied and the demarcation is separated from the procedure.

Table 3

The description of the subdivision procedures, traditional (current) and experimental based on Mattsson (2011).

The basic form of public subdivision procedure	Methods applied in the traditional procedure	Methods applied in the experimental procedure
<i>Initial preparation</i>	Customer applies to the cadastral authority Authorities investigate the formal criteria for the procedure	Customer applies to the cadastral authority Authorities investigate the formal criteria for the procedure
<i>Preparation within the actual procedure</i>	Measurement: demarcation of boundaries and investigation of rights Meeting with interest parties (<i>formal convening</i>)	Customer is interviewed, for example by phone, email or separate meetings, depending on the extent of matters to be discussed By default, no demarcation or assessment of new rights. (<i>Based on customer's wishes</i>) Meeting with interest parties (<i>informal convening date is agreed during the interview if possible</i>)
<i>Cadastral decision and registration</i>	Cadastral decision by surveyor (<i>related to new property unit and rights</i>) Appeal period Property unit and rights are registered. End of the procedure. Information sent to land registration authority, participants and possibly other authorities.	Cadastral decision by surveyor (<i>related to new property unit and rights</i>) Appeal period, if not agreed by participants Property unit and rights are registered. End of the procedure.
<i>Conclusion in the form of registration of ownership</i>	Land registration authority registers ownership	Information sent to land registration authority, participants and possibly other authorities. Land registration authority registers ownership

tight or if need for the subdivision procedure occurs rarely.

Customer needs can be categorised to external needs where the needs derive from other needs such as to complete a construction project, or internal needs considering the quality of the procedure.

5.2. Customer-orientation in the traditional procedure

The participants were asked how they perceived customer-orientation during the traditional procedures, for example how their needs were taken into account. The nature of the experiences differed greatly. For instance, one customer said that the procedure was not customer-oriented at all, but rather based on meeting formalities. Another said that the desire to serve customers varied depending on the personalities involved; some authorities co-operated closely with customers and others took a more formal and distant role. Most of the respondents said that they received help for the procedure eventually, if they asked for it. Altogether, experiences were dependent on the willingness of an individual authority to serve the customer and on how well the respondents were accustomed to the authorities beforehand. Better equality may be achieved by granting all the customers the ability to discuss the principles and elements of the procedure, even if they do not have direct contacts with the authorities.

Chen et al. (2004 and 2006) emphasise that successful organisation always has an embedded customer-oriented organisational culture. Therewith the lack of it may cause the service to be experienced based on a certain individual's willingness to adopt customer-oriented principles rather than the whole organisation's willingness.

Another viewpoint is that public organisation may value customer needs but employ values that are not important for the customer. Challenging the conventional wisdom of technical specialists is important with regard to how their tools and resources can be better developed to get results for customers (Price and Brodie, 2001). In perspective, one may say that the purpose of challenging the conventional ways is not to prove them wrong but to develop better alternatives in the current situation, especially in line with customer feedback.

5.3. Customer-orientation in the experimental procedure

Participants were asked about their experience of customer-orientation during the experimental procedure. The question was divided into three separate questions based on the methods used in the experimental procedures, the assessment of customer needs, concentration on applied procedure (e.g. no demarcation) and concentration on decreasing the duration of the procedure.

The respondents clearly viewed the assessment of the customer needs at the beginning of the procedure as positive and the proper kind of development following modern principles, especially if done in informal manner. Most of the respondents positively highlighted the initiative of the authorities towards customer cases where the first contact allowed the authority to be closer to the customer right at the beginning of the procedure. A prior interview with the interest parties in a broader context is carried out, for example as has been done land consolidation procedures in Europe (see e.g. Hartvigsen, 2015; Vitikainen, 2004; Sulonen et al., 2018).

At the interview, the customers were urged about their genuine need of service in their subdivision procedure to clarify whether the procedure should concentrate solely on the applied real property formation as default. In contrast in the traditional service, other tasks like demarcation, assessment of rights, etc. were mostly included automatically by authorities. Most of the respondents said that they had no need for demarcation in subdivision procedure, were able to measure the boundaries themselves and were interested in the possibility to concentrate on applied real estate formation. Some respondents clearly noted that they had no need for demarcation, since physical boundary marks typically get moved during the construction process. However, a respondent noted that they didn't have enough experience to tell if the future tenants of newly formed properties require the boundary marks and that, in any case, they apply demarcation afterwards. As a whole, multiple respondents highlighted the option to discuss available possibilities with authorities during the procedure.

The demarcation process was typically included in the traditional procedure and was not included if the customer specifically requested so on their own initiative. The method derives from a principle where the authorities may act on behalf of the participant if they feel that they should protect the participant's interests. In cadastral processes, this principle has been understood for instance as the authority's responsibility to choose which cadastral processes the applicant needs in subdivision (Hyvönen, 1998, HE 227/1994). In her presentation of transactions that are violated in the public sector, Kelly (2005) suggests that the transaction is involuntary, i.e. legally coercible. The government is typically a monopoly provider such that the citizens do not have a choice among competing products and have a limited voice in the composition of the services they receive (ibid). When studying experimental land consolidation procedures, Sulonen et al. (2018) suggest that customer-orientation relates to the voluntary approach, where the wishes of the participants are highlighted but do not contradict each other's wishes (non-coercible). In this case, allowing customers to influence the processes that should be included in the procedure involves a shift from straightforward decisions on one's behalf to a co-operative approach between the authorities and the customers.

Because of the aims of the development project, the customers were asked about the importance of concentration on decreasing the duration of the procedure. The outcome from the respondents strongly verified the need to efficiently conduct the subdivision procedure as briefly as possible. The wish to complete the procedure as quickly as possible was almost unanimous, and some of the respondents pointed out the need to have an exact timetable for the procedure. The participants connected the subdivision procedure to part of larger concept, such as starting a construction project or selling partitioned land to someone interested in constructing thereon.

As Svensson (2018) describes, modern qualification means that demands are constantly increasing, and everyone is striving to get more cost-efficient business and to use digitalisation in order to reduce planning and building process and make swift decisions. One respondent explained that market demands may have diverse needs in the near future, making it harder to predict future needs as far as overall city planning processes and the processes of building housing are concerned. The schedule for subdivision is therefore mostly tight, as the majority of respondents underlined, and the procedure should not dictate the entire project's schedule. The needs emphasise the efficient and less time-consuming subdivision procedure, allowing them to complete the general goals related to subdivision.

The participants were asked about the future development needs of the subdivision procedure. Digital development was favoured, for example to allow easy access to services. Several respondents claimed that they did not have much to say about how to develop subdivision procedure since they have already been able to discuss their needs with the authorities and felt that the procedure was sufficiently fluent at the time. Other respondents highlighted the need to have a better connection and co-operation with the authorities as well as between the

separate authorities themselves. The latter shows that the governmental, local authorities and their suborganisations¹⁶ should work efficiently together. Several respondents did consider co-operation between different authorities as favourable, especially when the authorities were able to agree on the terms of how to co-operate to advance the cause. The need for authorities to fluently co-operate is emphasised since, the subdivision was part of a more large-scale project (e.g. construction project) for customers. In such cases, they typically had to initiate several various processes within the responsibility of separate authorities. One respondent identified a problem in authorities issuing inconsistent natured statements on the same matter in subsequent phases of the overall process. It is apparent that such non-cooperation is time- and resource-consuming for customers and authorities alike. This outline a problem discussed in knowledge sharing between public organisations for better fulfilment for e.g. customer needs (See eg. Muggenhuber, 2006 & Markkula and Dipoli, 2006). Muggenhuber (2006) suggested, that public management needs knowledge exchange across organisation and inter-institutional co-operation to achieve best practice exchanges together as they do not have competitive incentive to keep them secret like commercial enterprises. Furthermore, Markkula and Dipoli (2006) describes changes in work culture require emphasising values e.g. openness, trust, collaboration and knowledge sharing between people and organisations. Moreover, lack of establishing such values can cause non-fulfilment of customer needs.

Some respondents argued that there is a need for cultural change in public authorities if the aforementioned co-operative and discursive approach is adopted with and between authorities. Several other respondents' statements backed up the viewpoint, stating that authorities should not hide behind formalities but rather be personally available and have interactive relationships with customers and other participants. The response the customer needs from the public cadastral authority may shift from, for instance, valuing the coherent and homogeneous outcome of the procedures to valuing fulfilment of customer's needs case by case, as Nwankwo (1995) contemplates. A respondent, however, acknowledged that changing the culture and way of acting is not simple and requires planning for how to conduct the change. Even so, the individual values over organisational values may actualise on inefficient knowledge exchange or only partial-optimisation of the process. Potsiou, and Ioannidis (2002) Describe more of cultural issues on lack of strong coordination for efficient public land management as for instance differing perception of the meaning of competition.

From a legal perspective, one respondent proposed a possibility of making minor modifications to outcome of the processes (city plans, plot divisions, cadastral procedures, etc.) in a flexible way rather than requiring them to repeat the overall process all over again. This option should be possible especially if all of the interest parties so agree. The suggestion was reasoned since future needs are changing rapidly, making principles drawn up at the beginning of the large-scale processes partially obsolete. The respondent suggested the principles of flexibility, smoothness and the shortening the timetable as key development ideas. This perspective conforms to Svensson's (2018) description of the need to produce quick decisions in reducing the lengthy process of building housing, since the situation in Finland follows the same trends. For instance, the average duration of the city planning process alone takes 10.3¹⁷ months in Finland, if not appealed in court (Tarasti, 2007).

In overall, there was indications that that single-plot owners or small business enterprises highlight the significance of more proactive and open relations from authorities to customers who do not enjoy prior

¹⁶ For instance, in case of the City of Tampere, there are different branches of authorities such as cadastral authorities, authorities controlling building permits, authorities responsible for city planning, etc.

¹⁷ In 2004-2005 (Tarasti, 2007).

contacts to the authorities from the responses. Some respondents, especially those from local government. However, the aspect was derived from indirect sources.

6. Discussion

The aim of this research was to analyse how customer-orientation is considered in subdivision procedure. The first research question (Q1) examined what does customer-orientation mean in subdivision procedure. To examine customer-orientation, several factors were defined such as customer identification and the status of customer-orientation in the public sector. To examine customer needs and how to deliver them, analysis methods used in the experimental procedures were employed.

The second research question (Q2) examined ways to improve customer-orientation in subdivision procedure. Customer needs were further studied by interviewing the customers participating in the subdivision procedures (traditional and experimental) of the area. Comparing customer experiences of these procedures allowed better analysis if the methods employed in experimental methods were favourable to customer-orientation.

In response to the third research question (Q3), the assessment of customer needs was considered as a favourable and key method applied in experimental procedure. The method highlighted the desired need of authorities to be more proactive and closer to the customers rather than formal and distant, especially at the beginning of the procedure. Moreover, the need for authorities to be accessible at all times was apparent, especially if the timetable of the procedure was tight. Altogether, the first contact should systematically allow various needs to emerge at the very beginning of the procedure, allowing authorities to better tailor their services to customer needs.

Another way to examine the different role of the authorities includes seamless interaction with other authorities within or outside their organisation. Such action was considered as favourable in the interviews, especially since the customer need was to complete a more comprehensive chain of procedures than subdivision alone, involving different authorities. In practice, promoting seamless interaction between different government authorities would allow obtaining necessary information or permissions to reduce unnecessary delays due to queuing times or misinterpretation of the needs.

To efficiently increase the interaction of authorities in the organisations, a cultural change favouring willingness and feasibility for change is required. This change would require the adoption of customer-oriented values as an organisation's own values rather than allowing a variety of individual values on the matter. Individual values over organisational values may actualise on inefficient knowledge exchange or only partial-optimisation of the process.

Overall, public organisations adopting customer-orientation should define their values and the status they are willing to grant to the approach. For instance, when considering customer-orientation in public services, a dilemma exists in how it is perceived and how customer-orientation affects, for example, the equality of services. Should, in this case, the organisation concentrate on upholding homogenous services or offering differentiated ones based on customer needs, or at least offer a greater variety of service options? Another question is whether actions weaken or strengthen other values like benefits for the whole community. The answer to these questions defines the organisational values.

From a perspective of the legal framework, the suggestion to allow greater flexibility in processes, if all interest parties so agree, is a fascinating issue. Since the overall process from the city plan to building housing is extremely time-consuming, the design principles applied at the beginning of the process can easily become partially obsolete by the end of the process, therefore affecting the usability of the outcome. This impacts on potential investors in the area. Possibilities to reduce the duration of the process should be further studied.

To evaluate how well the sample of participants represented the customer-group and reach maximum saturation of information there are several issues. Identifying the customers in public processes is not self-explanatory and defining the customer as applicant of the procedure has its limitations. Additionally, the definition excludes other interest parties who may have different focuses, thereby requiring further examination if this viewpoint is studied. It is possible the results may have varied if there were more participants, more specifically single or small plot owners. Their experiences were conveyed through the interviewed participants e.g. local government representatives. However, to verify the actuality of those experiences, the aspect requires further studies. The key difference between the large landowners and small landowners are the amount of investment and significance of their project for the community. However, in their point of view, the project aims are same: an investment of a large portion of their capital into a project of which they wish to have their investment returned later. The needs to have more proactive and easier to approachable authorities is more important if the customer is not accustomed to the authorities beforehand as stated in responses of the interview.

In general contribution, this article provides insights of possibilities of including customer-orientation into public processes as well as benefitting the efficiency and flexibility of the process. This result applies on areas or countries of similar conditions, especially on growing urban areas where the overall development is fast. For instance, nationally, the local governments operate under same legislation. It would be beneficial to implement and examine similar methods in elsewhere and evaluate whether the results in line of this study.

Legislation

The Finnish legislation can be accessed on the internet service Finlex.

Accessible: <http://www.finlex.fi/en/>

HE 227/1-994	Government's proposal to Parliament to reform Real Estate Formation Act" Hallituksen esitys Eduskunnalle kiinteistönmuodostamista koskevan lainsäädännön uudistamisesta"
CRE	Code of Real Estate (540/1995)
LUBA	Land Use and Building Act (132/1999)
REFA	Real Estate Formation Act (554/1995)

Acknowledgement

This research was supported by Tampere University, Civil engineering department, Finland.

Appendix 1. Themes of the questionnaire and quality analysis of selection of participants

The interview was conducted to evaluate how used methods affected the customer-orientation by interviewing cadastral surveyors from different local authorities, national authorities and customers operating in domains of different authorities.

Participants

The participants for the interview are acquired from contacts of conducted procedures (domain of the local government, the city of Tampere, Finland).

- Participants should operate on domains of multiple authorities
- Participants should have experience from traditional and experimental procedures.

Themes of the questionnaire that led the discussion

Details of the respondent & Short history of working experience
Customer needs in subdivision procedure

Customer-orientation in **traditional** subdivision procedure
 Customer-orientation in **experimental** subdivision procedure

- *Initial customer contact*
- *Concentrating on subdivision – e.g. No demarcation of borders.*
- *Concentrate on improving duration of the procedure e.g. no formal convening or appeal period*

Future development aspects and methods of customer-orientation

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