Department of Urban Studies

Real Estate Unit

Book of Proceedings

8th Malmö Real Estate Research Conference

Editor:
Peter Palm

Preface

It is a pleasure for us to present you with this book of proceedings, consisting of the scientific contributions accepted to publication at the 8th Malmö Real Estate Research Conference, at Malmö University, in May 2019. The purpose of the conference is still the same: to gather scholars from different academic disciplines working with the real estate sector.

The conference this year also hosted the Baltic Valuation Conference, gathering practitioners within the field of real estate valuation.

We would like to thank our session chairs and their assigned reviewers for their insightful and timely contributions;

Mikaela Herbert; Housing and Living

Peter Karpestam; Finance and investment

Susanna Weibull; Real Estate Law

Désirée Nilsson; Transport

Mladen Stamenkovic; Valuation

Victoria Tatti; Valuation

Lina Bellman; Valuation

Helena Bohman; Tenant and Residential Mobility

Magnus Andersson; Urban Land and Property

Ju Liu; Property Management

Peter Parker; Land Management

We are able to organize this conference thanks to generous funding from our partners; Malmö university, Samhällsbyggarna, Centrum för Fastighetsföretagande (CFFF), Institutet för hållbar Stadsutveckling, REEMOS, and Baltic Valuation Conference.

Peter Palm

Conference chair

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Housing and Living

Chaired by Mikaela Herberg

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Abstract   "Does the choice of living depend on where you live?"

(Working Title)

For many years, it has been policy in Sweden to help elderly people remain in their current homes for as long as possible. Earlier research has been performed in the USA (Gibler and Clements III, 2011) and in China (Jia and Heath, 2016), but these questions remain understudied in Sweden. Kulander (2018) showed a model of the demand for adapted houses that was designed and tested on data gathered in Gävle in 2012. The method uses a binary choice model with stated preference data. In this article, we would like to test this model on a more general basis to see whether the result is the same no matter if the respondents live in an urban or rural area. An argument is that urban areas have a higher population density and thus higher taxes, higher demands on property and greater spread in the demography. This could be set in relation to the more rural areas characterized by low population density where the younger generation move to urban areas where the jobs are, which in turn creates supply of properties higher than the demand. In order to capture the pattern of the life cycle in housing, data for this paper has been gathered in Stockholm, Vällentuna, Uppsala, Sundsvall, Vansbro, Sollefteå, Torsby, Ragunda and Överkalix during 2015. From 7000 questionnaires that has been sent responses from about 40 % persons was received. Data indicate a difference between rural and urban areas as expected.

Key Words: Housing, Elderly, stated preference

My home and my economy

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The cooperative apartment has become increasingly common in Sweden and also exists in some other countries. The turnover of cooperative apartments is high and they are sold more often than detached houses in the country. In connection with the purchase, the individual also becomes a member of a housing association and as a result of that affected by the economy of the whole association. This mirrors how individual households play an important role in the modern economy by having debt both personally and as members of a co-op housing society also taking on parts of its credit obligations.

Housing- as well as accounting researchers have highlighted how finance and accounting aspects are linked to homes and individuals. To purchase a dwelling is one of the biggest investment in a person's life and probably the financial decision that affects the private economy most of all. This transaction has still not attracted that much attention. The theoretical point of departure for this study is how in order for the purchaser to compare dwellings, the potential objects must be made comparable. Theories on Calculative Practices encircle how such a calculation is practiced and can hereby widen the understanding of home purchases from an accounting perspective. The task for the techniques is to create comparability whereby calculation is not only seen as numerical but also involves judgements. To put it simple: calculation is understood as both quantitative and qualitative.

The present study was conducted in Malmö in Sweden and consists of 17 semi-structured interviews with purchasers from the middle class. Home and individual people's housing purchases are here linked to calculative practice and accounting with the purpose to describe and understand the acquisition of a cooperative apartment. An important aspect is how purchasing a cooperative apartment also involves a membership in a coop housing association and dependence on its economy. It became evident in the study that the purchasers had calculated in the sense outlined here, and how lifestyle and feelings were important. Five factors had significance for the purchasers when they were to compare the cooperative apartments and the prices: home, moneybag, identification, the economy of the association and marketability. The study shows that the purchase of a cooperative apartment is not only a financial investment, but above all, a social investment. It also becomes clear that the most important thing for the purchasers is to feel that they have found a home.

Keywords: Calculation, Cooperative apartment, Middle class, Life style

Parent and Children Homeownership: Evidence from Tenure Conversions in Stockholm

February 2019

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Abstract

Our paper investigates whether parental homeownership and parental wealth influence children's homeownership. The issue is studied using a quasi-experimental approach based on tenure conversions in Stockholm (Sweden) and a longitudinal register database (GeoSweden) containing information about both housing properties and individuals, and in which individuals can be linked to their parents/children. In fact, over the last 20 years a great number of properties in Stockholm were converted from public rental housing into tenant-owner cooperatives. In many cases, tenants could purchase their apartments at a conversion fee below the market value, thus giving them a windfall increase in wealth. In order to study the causal effect of parental homeownership and wealth on children's homeownership, we match individuals living in public rental properties that were converted into tenant-owner cooperatives with similar individuals in similar public rental properties that were not converted, and compare the housing outcomes of their children. We find that, five years after conversion, young adults whose parents lived in a public rental property that was converted from public rental housing to a tenant-owner cooperative were much more likely to live in a tenant-owner cooperative or in a privately owned house themselves than young adults whose parents lived in a public rental property that continued to be public rental housing.

Tenancy as an alternative in lack of other options or tenancy as a lifestyle

Sylvia Lindqvist, Malmö university

Tenancy is an accommodation option that provides flexibility. It is considered to fit in all stages of life. Under the condition of a well-functioning market, the tenancy can be easily switched when the life situation changes. It can be a relatively trouble-free accommodation as it does not entail any risks. It can be convenient for people to avoid taking responsibility when something needs to be replaced or repaired. At the same time, there is an prejudice that those renting cannot afford to buy. Mobility and growth as well as financially weak households are also given as an argument for maintaining and increasing production of tenancy.

Studies with different perspectives on how tenancy affects the market can be found. Flexibility in tenancy is offering benefits not only to individuals but also to society at large. It can lead to increased mobility and growth as a consequence. Tenancy is also given as an argument for economic stability. Research shows that countries whose social values, in terms of status, equate ownership with tenancy have a lower share of homeownership. This provides a smoother and more stable price development in the housing market.

This study is going to take an individual perspective of the tenants, based on interviews, to see decisive factors for choosing to live in tenancy. This kind of study is important for creating social sustainability from the tenant's perspective when planning how to build or renovate.

LIVING WITH MY PARENTS

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Abstract

The housing market in the major metropolitan regions in Sweden can be characterized as more and more problematic for young adults to enter. To get an apartment on the rental market is very difficult with longer waiting lines as excess demand is becoming larger as a result of low housing construction together with regulated rents. On the owner-occupied housing market, the prices are so high that you either need a very high income and down payment or parents that can help you in order to enter the owner-occupied housing market. Over the last couple of years, a number of financial restrictions has also been introduced in order to bring down household debts in the Swedish society. These have been criticized to affect the young harder than other segments as they have a need to enter the market as first-time buyers.

The aim of this paper is to assess the causal link between economic conditions, housing conditions and financial conditions among young adults, using primary data on more than 2000 individuals in 2018 and 2019 in Sweden. Our main contribution is that we have a unique primary data set with information on individual characteristics such as demographics, education, income and employment status as well as information on financial skills, literacy and self-reported behaviors.

The basic modelling approach is a logistic regression model where we are trying to explain why some young adults live with their parents. We will also extend the modelling approach with logistic spatial modelling approaches.

The primary results suggest that, not surprising, that low income increases the likelihood that you are living with your parent. The same is true if you are younger within the group and if you are a high school student. We can also notice a gender effect that young males are more likely to live with their parents. We can also observe that it is more common to live with your parents in the major metropolitan regions. The model explanation power is high. The next step in the analysis is to investigate the importance of financial literacy for the likelihood of living with your parents in connection to local housing market conditions.

Keywords: young adults, living conditions, financial literacy, local housing market condition

Finance and Investment

Chaired by Peter Karpestam

A framework for modelling the revenue lag and consequences for land valuation

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Abstract

Important application of real options theories and methodologies can be found in the field of real estate development and land valuation. It is well known that the cash flows generated by an investment (e.g. in residential properties) in general does not occur at the time of the investment. We refer to this as the revenue lag. The commonly used simplifying assumption that the cash flows do occur at the time of the investment is often made in real option applications (this is e.g. done in the seminal paper by McDonald & Siegel from 1986 and in the standard Samuelson-McKean option valuation formula for land valuation presented in the textbook Commercial Real Estate Analysis and Investments by Geltner et. al. from 2014). Here we present an approach to model the revenue lag, where the cash flows occur at given deterministic times. An important application of the timing of the cash flows is how fast a residential developer can sell the homes built in a specific residential development project. The timing of the cash flows can in turn affect the theoretical land values computed from the real options model.

The way in which the cash flows is distributed to the investor over time is in many cases determined by the competitive structure of the market in which the investor acts. We investigate how the degree of competition in residential development market can be used to define the arrival of the cash flows over time.

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Do sharing economies change the cities: evidence from the rapid growth of Airbnb in the Copenhagen metropolitan area

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Abstract

This paper studies the implications of rapid growth of Airbnb on the residential mobility in the Copenhagen metropolitan area.

Despite the enormous interest for the impact of Airbnb on cities, the potential impact of a housing sharing system on the households residential sorting and the housing market in general has received little attention. In this paper we focus on the Copenhagen metropolitan area, where we identify the impact of Airbnb by exploiting significant variation in the adoption of Airbnb across city neighbourhoods for the period of nine years. We use all Airbnb listings from when it first arrived in 2012 combined with micro data derived from administrative registers for all households with residence in the Copenhagen metropolitan area distributed over 591 neighbourhoods (zip codes) within the period 2008-2016.

We first describe the evolution of the Airbnb in the Copenhagen neighbourhoods. We then analyse Airbnb's impact on residential mobility by estimating the likelihood that residents move away from their homes given the exposure to Airbnb in their neighbourhood using a duration model. We find that there is a significant negative correlation between the likelihood to move and the exposure to Airbnb, meaning that the more Airbnb is present in the neighbourhood the less likely people are to move residence. However, we also find significant heterogeneity between different groups likelihood to move when exposed to Airbnb.

Our empirical results suggest that Airbnb has a significant impact on the residential sorting in the Copenhagen metropolitan area. These findings are important not only to scholars, but also to policy makers, because they may alter the need for regulation of the home sharing services.

Keywords: Sharing economy, housing, residential sorting, administrative data.

JEL codes: D1, O3, R1, R2.

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Residential price downside risk and residential portfolio optimization

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Abstract

For both home buyers and mortgage lenders, falling home prices can result in severe financial losses. A downturn in residential markets can also result in widespread negative macroeconomic consequences. Therefore it is of great private and public interest to study the downside risks of home prices. Households and other investors can own homes in a single city or in a single region, as well as homes in several cities and regions. This paper studies the downside risks of home prices in Sweden, both in a single asset (i.e. single city or single region) context, and in a portfolio (i.e. multi-city or multi-regional) context.

In particular, this paper quantifies house price market downside risks and computes various regional allocations of home investments, using Value-at-Risk and Expected shortfall as risk measures, as well as traditional unconditional standard deviation as risk measure. We construct various regional home portfolios that are evaluated using these risk measures.

Stockholm 2019

Trails of transactions – from common benefit to international investments

Abstract for Real Estate Research Conference in Malmö, 9-10 may

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2019-03-01

Abstract

The Swedish rental market is in transition. Public housing and privately-owned rental housing have steadily decreased over the decades during waves of conversion to cooperative apartments. The rental market has moreover seen changes in ownership, where public housing stock has been sold to private rental companies, some of them often referred to as ‘slumlords’; actors with short term revenue aims and low maintenance ambitions. During the last few years, new actors has entered the scene. International venture capital firms are investing in rental housing in so-called socially deprived areas, applying specific business models for upgrading the houses and areas, increasing rents and rental policies but also claiming social responsibility. This study focuses on two of the major companies involved: Hembla (previously D. Carnegie) owned by the American investment firm Blackstone, and Victoria Park, under the umbrella of the German company Vonovia. The paper looks into how modes of financialization are operationalised by these companies, and also follows two cases of public housing estates which through diverse trails of transactions have ended up in the portfolio of the two studied international investment companies.

Keywords: Financialization, public housing, rental housing, venture capital firms

How does mandatory amortization of mortgage loans affect the housing market? Evidence from Sweden

Aleksandar Petreski*

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August 2018

Abstract

Using transactions data on apartment sales in Sweden, this paper examines the effect of mandatory mortgage amortization on apartment prices. Based on event study methodology combined with propensity score matching, we can observe negative CAARs the day after the adoption of the new measure. To the extent that house prices reflect rational expectations of future changes in fundamentals, this shows that housing market participants were affected by the new amortization rules. Coefficient of rent-to-prices shows strong negative sign, suggesting that current rent/price ratios appear to have the power to predict subsequent capital appreciation. This result also suggest that housing market in Sweden is not informational efficient. Negative and significant coefficient for interaction term between event date and rent-to-prices, suggests that market agents after the event date have become more sensitive to the changes in the rent yield.

Keywords: housing market, event study, propensity score, hedonic model, panel, spatial model

JEL codes: G10, G12, G14, G18, G28

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1 Introduction

In Sweden, the state of housing market and continuous increase of prices has received a great deal of attention. All important stakeholders, in particular the central bank, are monitoring its dynamics, trying to predict its price level, to locate its drivers and assess the effects on the economy from its price development.

House prices have risen to high levels, slowing only recently. Recent research suggests that house prices are 12 percent above long-run equilibrium ([Turk, 2016](#)). The main reasons for this trend is an increased population and slow response of the housing supply to the increase in demand, due to the restrictions on land acquisition and planning procedures at the municipal level ([IMF, 2016](#)). As pointed out in this paper, house price gains provide incentives for households not to amortize loans and to take out even larger loans relative to income, aided by longer loan maturities, mortgage interest rate deductibility and the lack of a property tax, which further propel house demand. When house prices substantially increase, homeowners can extract home equity through cash-out refinancing and home equity loans and use the proceeds for their consumption ([Li and Zhang, 2017](#); [Mian, 2013](#)).

Household debt in Sweden has been rising relative to income with new borrowers taking on increasingly high mortgage loans, thereby boosting macro-financial risks. Compared to disposable income, household indebtedness has risen from 90% in 1995 to 179% in 2015 ([Riksbank, 2016](#)). A rising share of new mortgage debtors in Sweden take out mortgages that exceed 50 % of the value of the home ([IMF, 2016](#)). According to the same report, a large percentage of loans in Sweden are not amortized at all but prolonged at maturity.

Rising housing prices and increased household indebtedness have received the attention of the both Swedish financial regulators and the Swedish Central Bank (riksbanken) and of the Financial Markets supervisory authority (finansinspektionen). Finansinspektionen adopted several macroprudential measures to reduce the risks associated with household indebtedness, while trying not to provoke counter-effects in other segments of the financial system (Appendix with measures [A](#)).

One of the last measures that Finansinspektionen has adopted is focusing on the specificity of the mortgages payment conditions, provided by the commercial banks in Sweden. Many mortgage contracts have specific credit obligation: there was no mandatory amortization in the past and a typical requirement from the creditor was to pay only the interest, not on the principal. According to [ECB \(2016\)](#), in 2014 only 60 % of households made principal payments on their mortgages. This type of contract, which is enabling creditors to keep high persistent debt are making the creditors vulnerable to shocks, such as unexpected changes in income, housing prices or interest rates. Es-

pecially highly leveraged households are found to be sensitive to economic shocks. Finansinspektionen has identified that the main risks lie with households whose mortgages exceed 50 % of the value of the property securing the mortgage.

On 1 June 2016 a new mandatory mortgage amortization rule was introduced that all new loans granted for housing purposes on or after and secured by a property, must include provisions on amortization requirements if the mortgage exceeds 50 % of the property's market value [ECB \(2016\)](#). The rule includes an option for lenders not to apply the amortization requirements in relation to loans granted to finance the acquisition of newly constructed homes. A borrower acquiring a newly constructed home would be exempt from the mortgage amortization requirements.

The intention of the new measure, as stated in Finansinspektionen memorandum ([Finansinspektionen, 2014](#)) is to directly reduce household indebtedness and to indirectly curb the demand for housing. Hence, the new introduced measure is expected to have an impact on the property prices by lowering housing demand.

Exactly this potential relationship between the non-monetary measure (mandatory amortization) and house prices is of central interest of our paper. We use both, CAAR (Cumulative Average Abnormal Return) methodology as the visual exploratory tool and price expectations model to empirically test the effectiveness of the mandatory amortization rule on the apartment prices in Sweden. If mandatory amortization influences house demand, housing prices should decrease in response, leading to a negative "abnormal return" on housing transactions, following the introduction of this measure.

To investigate this conjecture, we perform event study methodology following [Jung and Lee \(2017\)](#). In their paper they analyze the impact of macroprudential policies (limits on the loan-to-value (LTV) and debt-to-income (DTI) ratios) on housing price growth in Korea.

Our study has similar interest as mortgage amortization rule is targeting indirectly house prices via decrease of loan-to-value (LTV). Different from [Jung and Lee \(2017\)](#), which uses aggregate panel data, we apply CAAR methodology on the daily index of apartment prices which we construct in a first step built by using propensity score matching and spatial model.

Following the work of [Capozza and Seguin \(1996\)](#), we are also modeling the expectations of capital appreciation in the housing market. They show that expectations imputed in the rent/price ratio successfully predict house price appreciation rates. We use their model and adopt it for the event study by adding dummy variables to capture the effect of the measure on the change in price expectations. This is another contribution of the paper as it utilizes the price expectation model in combination with event study analysis.

We find negative CAAR the day after the adoption of the measure, which show that the introduction of the amortization rule had an impact on housing prices. One tentative conclusion that can be drawn from this finding is that the adoption of the mandatory amortization has proved to be a successful macroprudential measure to reduce the overheating of the housing market. Also, we find that the interaction between rent-to-price and time dummy for the ex-measure period is significantly negative, which implies a downward shift of house the price expectations. To the extent that house prices reflect rational expectations of future changes in fundamentals, this negative price reaction reflects change in expectations of the market agents.

The remainder of this paper is organized as follows. Section 2 gives an overview on related studies. Part 3 outlines the methodology we propose to identify the effects of the mandatory rule. Section 4 describes the volume and structure of the data that we employ. Part 5 visualizes the results from the exploratory CAAR analysis, reports the results from expectations model estimates and gives possible interpretation. Section 6 presents the conclusions from our study.

2 Literature Review

Investigating the effectiveness of the macroprudential policy measures on stabilizing house prices and housing credit, undertaken by monetary (financial) authorities, has attracted a lot of attention from research. A growing body of literature documents the use of tools other than the short-term interest rate in various countries and examines their effectiveness in damping house prices through damped credit growth.

[Borio and Shim \(2007\)](#) analyze macroprudential and monetary policy measures taken by 18 economies with the aim of influencing credit and housing prices. Using an event study methodology, they find that macroprudential measures reduced credit growth by 4 to 6 percentage points in the years immediately following their introduction, while house prices slowed in real terms by 3 to 5 percentage points. It is worth noting that this study uses macro data from several countries, while our paper employs micro data from Sweden for performing an event study.

[Kuttner and Shim \(2016\)](#) investigate the effectiveness of nine non-interest rate policy tools, including macroprudential measures, for stabilizing house prices and housing credit. Using conventional panel regressions, they found that housing credit growth is significantly affected by changes in the maximum debt-service-to-income (DSTI) ratio, the maximum loan-to-value ratio, limits on exposure to the housing sector and housing-related taxes. But, when they were using the mean group and panel event study methods they found that only the DSTI ratio limit has a significant effect on housing credit

growth. In contrast, our paper is focusing on mandatory amortization rule as the policy tool with an impact on house price appreciation.

Hull (2017) evaluates mortgage amortization requirements as a tool for reducing household indebtedness and income shock vulnerability in the long run. He finds that intensifying the rate and duration of amortization is largely ineffective at reducing indebtedness in a realistically-calibrated model. In the absence of implausibly large refinancing costs or tight restrictions on the maximum debt-service-to-income ratio, the policy impact is small in aggregate, over the lifecycle, and across employment statuses. While these findings are derived from a simulation study, our paper complements this research by providing empirical evidence from transaction data, covering the period before and after the rule adoption date, for which we find the event methodology as most appropriate in this context.

Event methodology that we use has its homebase in the finance literature where it is used to assess the impact of event surprises on stock prices. Cornerstone is the seminal work of Fama et al. (1969), in which they develop the methodology of calculating cumulative average abnormal returns (“CAARs”). In our adoption of this methodology for the housing market, instead using CAPM as the underlying equilibrium asset pricing model, we use a hedonic price model for predicting house prices. We also incorporate spatial aspects into this spatial hedonic regression model.

It would be naive if we directly compare the averages, medians or cumulative abnormal returns between this two samples due to selection bias (Angrist, 2009) which will influence treatment effects. Nanda and Ross (2009) use propensity score techniques from the treatment effects literature with a traditional event study approach to examine whether the adoption of seller disclosure laws has reduced the magnitude of the asymmetric information problem in residential property markets. Propensity score is just one of the semi-parametric and non-parametric matching methods, which helps to improve parametric statistical models and reducing model dependence by preprocessing data (Ho et al., 2017). Similarly, we use combination of these two techniques (event study and propensity score), except for that Nanda and Ross (2009) are using a quarterly panel of housing price indices, while we compare the actual and predicted median returns on the daily house prices built with hedonic and spatial model.

Hedonic model explains the house price using its characteristics. First paper that used this model is the “new theory of consumer demand” presented by Lancaster (1966). This model was further developed by Rosen (1974), who argued that estimation of the value of particular attributes indirectly carries information about the outcome of supply and demand changes. Since hedonic models represent industry standard in estimating housing prices, we have no doubt to use them to get predicted prices, which we later

compare with real prices, in order to get abnormal returns.

Spatial dependence of characteristics and values coupled with incomplete information make spatial dependence of the regression residuals almost inevitable. Ignoring this phenomenon represents one of the most common geographic errors ([Thrall, 1998](#)). Rather than eliminating the problem of spatial residual dependencies through models using complicated functions of many variables, spatial statistical methods typically keep simple models of the variables and augment this with simple models of the spatial error dependence. Alternatively, spatial techniques may use spatial lags of the dependent and independent variables to reduce spatial error dependence [Dubin et al. \(1999\)](#). In the recent literature, hedonic models are combined with spatial techniques in order to improve estimation and prediction of house prices.

The effect of macroprudential measures on real estate market has been examined empirically in many studies. The majority of studies are assessing the impact from the macro perspective, using panel or vector autoregressive models. [Crowe et al. \(2013\)](#) and [Cerutti et al. \(2017\)](#) find that macroprudential policies including LTV regulation are the best way to tame a real estate boom. However, macro-level studies does not take into consider regional or local conditions on the real market and this is the gap that our paper is trying to fill.

Conversely, there are authors that assess the impact from the micro perspective using detailed transaction based data sets. [Jung and Lee \(2017\)](#) offer an empirical assessment of the impacts of macroprudential policies – LTV and DTI limits on housing prices in Korea, by using an event study methodology with a disaggregated dataset. They find that DTI limit plays important roles in stabilizing housing prices than LTV limit. The loosening of both DTI and LTV limits boosts house price growth whereas the tightening only of DTI limits reverses it.

In addition, there has been a growing amount of literature examining whether macroprudential policies are effective in mitigating financial cycles and improving welfare using general equilibrium models. [Chen \(2016\)](#) using a DSGE model designed to Sweden, show that tightening of demand-side macroprudential policies such as LTV regulations, amortization requirements, and tax deductions for mortgage interest payments are more effective than monetary policy in reducing household indebtedness, and have smaller negative impacts limiting the consumption feasibility set of households.

Our contribution in this field of research is that we combine several approaches in order to assess the impact of macro prudential measures on housing prices across regions. We combine the CAAR methodology with propensity matching and use spatial analysis to create daily house prices. Then we apply event study on the obtained daily index of house prices to test our research propositions. We also use expectations model

and we adopt it for the purpose of event study. In this way we can observe the effects of the non-monetary measures on the house prices in Sweden, not only on the national level, but also on regional level.

3 Methodology

To understand the impact of mandatory amortization on housing prices, we perform an event study similar to [Jung and Lee \(2017\)](#) and we model expected price changes using rent-to-price (rent yield), as in [Capozza and Seguin \(1996\)](#).

3.1 Exploratory event study

The aim of the event study is to visually examine whether housing prices after the event date (date of adoption of mandatory amortization rule) display abnormal returns (i.e. returns in excess of their expected return). To this end we study the population of transaction prices, where sellers/buyers sells/buy before or after the event date. We consider the transactions before the event date as control group, while the others as treated group.

We test several event dates, including the day of announcement of intended measure and the day of the adoption of measure. We define the estimation window from the first day to the days: (-120, -90, -60, -30 respectively,) relative to the event day. Implicitly we assume that, for example, returns more than 30 days prior to the event are not influenced by the event itself.

Before we employ CAAR methodology, we use propensity score matching, as it can help to reduce the bias from non-linear selection on observables. In this way the comparison of average impact is performed using similar treated / control observations, homogeneous in the terms of the likelihood of experiencing treatment (selling/buying after the adoption of the measure). The observations on rental transactions are assigned to treatment and control groups, based on a highly nonlinear relationship between observable controls and the transacting with reference to event date. We consider only a single dichotomous causal (or treatment) variable, which takes a value of 0, if the transaction is before the event date (it is untreated and serve as control) and 1, if the transaction is after the event date (receives the treatment).

In the process of data matching, the observations are selected, duplicated, or selectively dropped from our data, and it is done without inducing bias. The propensity score, defined as the probability of receiving the treatment given the covariates, is a key tool. There are many methods that offer this preprocessing: exact, sub-classification, nearest neighbor, optimal, and genetic matching. In our analysis we use nearest neighbor matching.

Further, we employ the CAAR methodology for assessing the impact of event (adopting mandatory amortization rule) on the prices. The algorithm for calculating the CAARs is:

- Fit the model for the period before the event, using log of the transaction prices and use the fitted model on the data for the period after the event to predict the prices in this period,
- Calculate the median daily prices, using predicted prices and realized prices from each transaction. This helps eliminate idiosyncrasies in measurement due to particular stocks.
- Knowing daily predicted and realized prices, calculate daily returns on predicted and realized prices,
- Calculate daily abnormal returns (“ARs”) for the period after the event, as the difference between daily returns on predicted and daily returns on realized prices,
- Sum the average abnormal returns over the T days in the event window (i.e. over all times t) to form the cumulative average abnormal return (CAAR).

The particularity of this paper are the models used to fit the transactions data. We employ hedonic and spatial model to estimate house prices, before and after event date (date of adoption of mandatory amortization measure).

When modeling the data, we start from the ordinary form of the hedonic model to estimate the log-price y_h in period t of a dwelling h and we include time as the trend:

$$y_h = \alpha + Z\beta + \tau t + \varepsilon_i \quad (1)$$

where y_h is an $H \times 1$ vector with elements $y_h = \log(p_h)$, Z is an $H \times C$ matrix of characteristics (some of which may be dummy variables), β is a $C \times 1$ vector of characteristic shadow prices, τ is scalar of daily log-price change and t is $T \times 1$ vector with time periods. Finally, H, C and T denote respectively the number of dwelling, characteristics and time periods in the data set.

Finally, we use spatial Spatial autoregressive model (SAR) in predicting prices, as in [LeSage and Pace \(2009\)](#), adding a time trend t as well:

$$y_h = \alpha + Z\beta + \rho W y_h + \tau t + \varepsilon_h \quad (2)$$

where W is spatial weights matrix and ρ is a scalar that measures the average locational influence of the neighboring observations on each observations.

3.2 Expectation model

In addition, we expand the analysis and try to test the market expectation using the principles from finance, precisely dividend discount model. Similar to the stock market, where the changes in the dividend yield (dividend-to-price) and other market information should be reflected in the stock prices in the market, in the property market the changes in the rent yield (rent-to-price) and other market sensitive information should be incorporated in the stock prices in the market.

Empirically, firstly [Miller and Modigliani \(1961\)](#) showed that equity prices are efficient with respect to the information on dividends and that dividend policy does not affect share value. Later, [Black and Scholes \(1974\)](#) and [Miller and Scholes \(1978\)](#) have shown that it is difficult to detect any difference in risk-adjusted returns between high and low dividend securities.

However, several studies addresses the issue of informational efficiency in the housing market . [Mankiw and Weil \(1991\)](#) in their paper empirically prove that home prices appear to rise contemporaneously rather than in advance of predictable events, thus empirically rejecting efficiency. Similarly, many others ([Hamilton and Schwab, 1985](#); [Meese and Wallace, 1994](#)) also examine the efficiency of real estate markets in general, and the rationality of expectations of price appreciation in the housing market using dividend ratio or present value models.

We follow the work of [Capozza and Seguin \(1996\)](#), in which they test the role of expectations in housing market using dividend model. They claim that if the information about existing rent/price ratios has been efficiently impounded into housing prices, then the rent/price ratio should have significant predictive power for future capital gains. In the competitive markets total risk-adjusted expected returns will be equal across urban areas. If there are differences in expected total returns across urban areas, then capital should flow to those areas with higher expected returns, thereby increasing current price levels and decreasing future expected total returns. Because expected total returns are the sum of the dividend or rent yield and an expected appreciation rate, urban areas where rent/price ratios are high should have lower expected appreciation. Formally, they model the expected return on housing:

$$ETR_{it} = \frac{R_{it}}{P_{i,t-1}} + \frac{E\Delta P_{it}}{P_{i,t-1}} \quad (3)$$

where TR_{it} is the total return to housing in area i over time period t , R_{it} is the level of rent in area i over time period t , P_{it} is the price of housing and E is the expectation operator.

$$\frac{E\Delta P_{it}}{P_{i,t-1}} = ETR_{it} - \frac{R_{it}}{P_{it}} \quad (4)$$

Following the same methodology, because expected appreciation rates are not observable, we need to use realized, rather than expected capital gains. We use the change in the median log prices to capture realized gains:

$$\log(P_{it}) - \log(P_{i,t-1}) = ETR_{it} - \frac{R_{it}}{P_{i,t-1}} \quad (5)$$

Capozza and Seguin (1996) use census data disaggregated by metropolitan areas to analyze decadal appreciation rates. They exploit disaggregated data on cross-sectional variations of appreciation rates arguing that: supply and demand factors in real estate markets vary from locale to locale, the number of usable observations and hence, the statistical power of our tests are increased and third, they circumvent a number of potentially troublesome time-series problems encountered in the literature investigating the predictive power of dividend yields (Goetzmann and Jorion, 1993).

In our paper, we also use data disaggregated by areas (Swedish municipalities), but we adopt their model to capture the effect of the macroeconomic measure. So, we expand the model by adding dummies to distinguish the period before/after the event and we add dummy to include interaction effect between separated periods and rent-to-prices variable:

$$\log(P_{it}) - \log(P_{i,t-1}) = ETR_{it} - \frac{R_{it}}{P_{i,t-1}} + \delta(D_t - D_{t-s}) + \gamma(D_t - D_{t-s}) + \frac{R_{it}}{P_{i,t}} \quad (6)$$

In order to avoid measurement error on rent-to-price ratios and house prices, since we use rents and prices from different periods and apartments, we use fitted values on these variables. In the first stage, we fit rent-to-price ratios and house prices using hedonic models. Then, in the second stage we use fitted values for rent-to-price ratios and house prices and estimate the final model using both linear static panel estimator.

4 Data

We use public data published on Swedish property web sites, on concluded sales of apartments through public bidding from the area of inner area of Stockholm, Vstra Gotaland and Skane (Appendix B).

Then using event methodology we use only Skane data that cover the period of almost 2.5 calendar years on daily basis from 2015-02-01 to 2017-07-28. Starting number

of transactions is 8204 transactions, but after cleaning the outliers we work with sample of around 8186 transactions. When we further preprocess data, we were modeling using the sample between 2,500 and 3,200 transactions of matched data (by propensity score). The data on particular transaction includes: municipality, address, date of transaction, latitude, longitude, floor in the building, year of building, number of rooms, size of the apartment and final sold price per m2.

When we were assessing influence of the rent-to-prices on property prices, we use bigger data set with around 25,600 transactions covering the period from 2015-07-01 to 2017-07-28. Finally, when we aggregate the data on the municipal level, we work with 17 x 24 wide panel (n=17 municipalities, t=24 periods).

5 Data analysis

5.1 CAARs

Estimation of the hedonic model, with and without control by propensity score, show that negative CAAR after the date of adoption.

We tested several estimation windows with 3 different cut-off dates: 180 days before the adoption of mortgage amortization rule (2016-01-02), date of announcement of the decision by FI (2016-04-20) and 30 days before the adoption of mortgage amortization rule.

Table 1:		
start of train period	end of train period /start of test period	end of test period
2015-03-02	2016-01-02	2017-06-25
2015-03-02	2016-04-19	2017-06-25
2015-03-02	2016-06-01	2017-06-25

We have estimated hedonic models using final price per m2 (Annex D).

Estimated coefficients for the premium are significant except for “the floor” of the apartment. Premiums are higher for larger and older apartments, but smaller for apartments with more rooms. Estimated coefficients for the prices are all significant. Prices are higher for the apartment on higher floors and with more rooms. Price per m2 falls for larger and older apartments.

Calculated CAARs from the hedonic models show negative CAARs (Figure 3). It should be noted that in some models in the far end of the data, the CAARs not just reversed back, but they even enter the positive territory. It possibly could mean that there was some new positive surprise or that model fundamentals have changed, so we have to take into consider only the shorter end of the CAARs.

Figure 1. Price per m2 CAARs using hedonic model

Figure 2. Price per m2 CAARs using spatial model

We have estimated spatial models using final price per m2 (Annex D). Calculated CAARs from the spatial models show negative CAARs (Figure 2).

Estimated coefficients for the CAARs on prices are significant, except for the year of building of the apartment. With the increase of the apartment size, price per m2 decrease. As the floor of the apartment is increasing, the price per m2 is also increasing. Coefficient of the spatial autocorrelation is significant and positive, with values around 0.81. Residual correlation is small ranging between 0.02 and 0.06. AIC for the spatial model is far smaller than for the linear model.

5.2 Expectations

For the purpose of the estimation of the expectation model, we arrange the data in panel format, having data for $n=17$ municipalities and $t=24$ periods (Appendix E).

In order on rent-to-price ratios and house prices, since we use rents and prices from different periods and apartments, we use fitted values on these variables. In the first stage, in order to avoid measurement error, we fit rent-to-price ratios using following semi-parametric spatial model with location function :

$$\left(\frac{R}{P}\right)_h = \alpha + Z_h\beta + f(X_h, Y_h) + \varepsilon_h \quad (7)$$

where Z is the $H \times 3$ matrix of apartment characteristics (year of building, apartment floor and number of rooms) and location function $f(X, Y) = X + Y + XY$ using X, Y coordinates of the geographical location of the apartment.

We also fit house log-prices $y_h = \log(P_h)$ using similar semi-parametric spatial model with location function:

$$Y_h = \alpha + V_h\beta + f(X_h, Y_h) + \varepsilon_h \quad (8)$$

where V is the $H \times 5$ matrix of apartment characteristics (year of building, apartment floor, number of rooms, rent and auction premium between starting and final apartment price) and location function $f(X, Y) = X + Y + XY$ using X, Y coordinates of the geographical location of the apartment.

We check the effectiveness of the fit and we observe that the spatial model capture appropriately the rent-to-price ratios and prices on the municipal level, as adjusted R-squared varies between 0.3 and 0.7. Next we calculate median log price (and median rent-to price) as the aggregate apartment log price (aggregated rent-to price) for that municipality.

Then using fitted values, we estimate relationship between fitted log prices and fitted rent-to-prices using static panel estimators. We use four types of estimators (pooled, between, fixed effects and random effects estimator). Hausman test results rejects the null hypothesis of consistency in the favor of fixed effects model.

As can be seen from the summarized table in Appendix F, coefficient of rent-to-prices shows strong negative sign (except for the between estimator). In the fixed-effects model, coefficient is negative and significant (-5.478), suggesting that current rent/price ratios appear to have the power to predict subsequent capital appreciation. Hence, 1% increase in rent yield should result in a less than 6% decrease in required capital gains. This is not so far from the theoretical value of -10, and the difference could be due to many factors (measurement errors, use of gross rents).

It is interesting to see that although the coefficient for the post-event period is positive, it is insignificant in all models. This might mean that time trend of increase in prices has weakened and its direction become heterogeneous across regions.

If we consider interaction term between event date and rent-to-prices, we can observe that its coefficient is negative and significant (for pooled and fixed effects estimator). This result for the interaction term suggests that market agents after the event date have become more sensitive to the changes in the rent yield. Considering the results from fixed effects model, 1% increase in rent yield should result in approximately 7.5% decrease in required capital gains ($-5.5\% - 2\% = -7.5\%$), higher than previously expected 5.5% decrease. Put it differently, this might prove the measure has changed market expectations about future growth in house prices, which in the end should reflect on the real levels of the house prices.

suggesting that maybe market expectations about future growth

6 Conclusion

Our results show that the mandatory amortization rule as macroprudential measure has an effect on the housing prices.

We find negative CAARs after the day of the adoption of the measure. To the extent that house prices reflect rational expectations of future changes in fundamentals, this negative price response implies negative prospects in the underlying housing market as perceived by market agents.

Coefficient of rent-to-prices shows strong negative sign, suggesting that current rent/price ratios appear to have the power to predict subsequent capital appreciation.

This result also suggests that housing market is not informationally efficient.

Also, having price change after the event date, and not after the date of announcement of the measure, is another empirical proof already seen in other papers, now for the case of Sweden, that house prices appear to rise contemporaneously rather than in advance of predictable events (date of introducing mandatory amortization measure).

Negative and significant coefficient for interaction term between event date and rent-to-prices, suggests that market agents after the event date have become more sensitive to the changes in the rent yield.

We can observe that the effects of the introduced mandatory rule are probably moving in this order: changes in market expectations as the first effect and change in the prices, as the manifestation of the changed market perception (the second effect) probably in the later phase, since observed price changes are heterogeneous across regions and still insignificant.

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Appendices

A Appendix - Previous measures

Table 2: Timeline of adopted macroprudential measures

Measure	Implementation
Maximum LTV ratio, 85 percent	October 2010
Risk-weight floor for mortgages, 15 percent	May 2013
LCR regulation, including in euro, U.S. dollar, and total	January 2014
Pillar II capital add-on 2 percent for the four largest banks	September 2014
Risk-weight floor for mortgages, 25 percent	September 2014
Systemic risk buffer 3 percent for four largest banks	January 2015
Counter-cyclical capital buffer activated at 1 percent	September 2015
Amortization requirement	June 2016
Counter-cyclical capital buffer raised to 1.5 percent	June 2016
Counter-cyclical capital buffer raised to 2.0 percent	March 2017

B Appendix - Real estate data summary for Sweden

	county	price	avgift	rent_to_price	size
1	Skåne län :7336	Min. : 705	Min. : 1	Min. :0.000002	Min. : 10.00
2	Stockholms län :8015	1st Qu.: 18462	1st Qu.: 2566	1st Qu.:0.008590	1st Qu.: 43.00
3	Västra Götalands län:9692	Median : 37000	Median : 3404	Median :0.018222	Median : 59.00
4		Mean : 46990	Mean : 3494	Mean :0.032583	Mean : 58.69
5		3rd Qu.: 76177	3rd Qu.: 4270	3rd Qu.:0.038031	3rd Qu.: 75.00
6		Max. :200000	Max. :11981	Max. :1.040941	Max. :227.00

Summary of real estate data for Stockholm

	county	price	avgift	rent_to_price	size
1	Skåne län : 0	Min. : 35762	Min. : 1	Min. :0.000002	Min. :10.00
2	Stockholms län :8015	1st Qu.: 77222	1st Qu.: 1964	1st Qu.:0.005379	1st Qu.:35.00
3	Västra Götalands län: 0	Median : 88281	Median : 2635	Median :0.006947	Median :47.00
4		Mean : 88640	Mean : 2843	Mean :0.007272	Mean :49.82
5		3rd Qu.:100000	3rd Qu.: 3506	3rd Qu.:0.008663	3rd Qu.:66.00
6		Max. :200000	Max. :11981	Max. :0.021961	Max. :99.00

Summary of real estate data for Vastral Gotaland

	county	price	avgift	rent_to_price	size
1	Skåne län : 0	Min. : 705	Min. : 100	Min. :0.000427	Min. :10.00
2	Stockholms län : 0	1st Qu.: 15469	1st Qu.:3006	1st Qu.:0.015185	1st Qu.:50.00
3	Västra Götalands län:9692	Median : 29630	Median :3719	Median :0.023387	Median :61.00
4		Mean : 31316	Mean :3794	Mean :0.046479	Mean :59.71
5		3rd Qu.: 45647	3rd Qu.:4465	3rd Qu.:0.047514	3rd Qu.:74.00
6		Max. :132353	Max. :9035	Max. :1.040941	Max. :99.00

Summary of real estate data for Skone

	county	price	avgift	rent_to_price	size
1	Skåne län :7336	Min. : 1353	Min. : 125	Min. :0.001053	Min. : 11.00
2	Stockholms län : 0	1st Qu.:13767	1st Qu.: 2935	1st Qu.:0.022998	1st Qu.: 52.00
3	Västra Götalands län: 0	Median :19828	Median : 3690	Median :0.034412	Median : 64.00
4		Mean :22195	Mean : 3808	Mean :0.041879	Mean : 67.03
5		3rd Qu.:28815	3rd Qu.: 4520	3rd Qu.:0.051899	3rd Qu.: 80.00
6		Max. :86047	Max. :10904	Max. :0.457067	Max. :227.00

C Appendix - Measurement error of the rent-to-price

D Appendix - Hedonic and Spatial models

Hedonic model on final price per m2

price per m2	30 day before adoption date			72 days before adoption date			180 days before the adoption date		
	start of train period	end of train period /start of test period	end of test period	start of train period	end of train period /start of test period	end of test period	start of train period	end of train period /start of test period	end of test period
	2015-03-02	2016-06-01	2017-06-25	2015-03-02	2016-04-19	2017-06-25	2015-03-02	2016-01-02	2017-06-25
	Estimate	Pr(> t)		Estimate	Pr(> t)		Estimate	Pr(> t)	
(Intercept)	10,3505	0,0000	***	10,2579	0,0000	***	9,7656	0,0000	***
time_dummy	0,0004	0,0000	***	0,0004	0,0000	***	0,0004	0,0000	***
floor	0,0148	0,0000	***	0,0165	0,0000	***	0,0123	0,0000	***
year of building	-0,0001	0,5473	*	-0,0001	0,6693	,	-0,0002	0,4758	
rooms	0,0363	0,0005	***	0,0400	0,0001	***	0,0412	0,0002	***
size	-0,0044	0,0000	***	-0,0046	0,0000	***	-0,0046	0,0000	***
....									
Adjusted R-squared:	0,8105			0,8246			0,8276		
	Control	Treated		Control	Treated		Control	Treated	
All	3842	3479		3424	3897		2585	4736	
Matched	3057	3057		3117	3117		2456	2456	

Spatial autoregressive model on final price per m2

price per m2	30 day before adoption date			72 days before adoption date			180 days before the adoption date		
	start of train period	end of train period /start of test period	end of test period	start of train period	end of train period /start of test period	end of test period	start of train period	end of train period /start of test period	end of test period
	2015-03-02	2016-06-01	2017-06-25	2015-03-02	2016-04-19	2017-06-25	2015-03-02	2016-01-02	2017-06-25
	Estimate	Pr(> t)		Estimate	Pr(> t)		Estimate	Pr(> t)	
(Intercept)	2,0727	0,0000	***	2,0912	0,0000	***	2,1541	0,0000	***
time_dummy	0,0004	0,0000	***	0,0004	0,0000	***	0,0004	0,0000	***
floor	0,0123	0,0000	***	0,0118	0,0000	***	0,0092	0,0003	***
year of building	0,0003	0,1335		0,0003	0,0965	.	0,0003	0,1363	
size	-0,0024	0,0000	***	-0,0023	0,0000	***	-0,0024	0,0000	***
rho	0,8236	0,0000	***	0,8219	0,0000	***	0,8169	0,0000	***
residual autocorrelation	0,0445	0,0010	***	0,0471	0,0010	***	0,0648	0,0010	***
AIC for spatial model	176,3			184,4			377,5		
AIC for linear model	4050,4			4172,3			2456,0		
Number of observations:	3057			3117			2456		

E Appendix - Panel data summary

Variable		Mean	Std. Dev.	Min	Max	Observations
log price	overall	9.790318	.6846341	7.763971	11.45043	N = 408
	between		.6701175	8.644189	11.38172	n = 17
	within		.2122336	8.605543	10.8167	T = 24
model price	overall	22937.45	19263.85	2354.234	93941.95	N = 408
	between		19562.27	6016.479	87771.95	n = 17
	within		3168.494	11751.77	36671.25	T = 24
estimated rent-to-price	overall	.0543205	.0445445	.0066138	.4132406	N = 408
	between		.0378277	.0072063	.1445332	n = 17
	within		.025182	-.0563926	.323028	T = 24
rent-to-price * event dummy	overall	.0282661	.0368167	0	.2399473	N = 408
	between		.0180139	.0040943	.0709535	n = 17
	within		.032393	-.0426874	.2055232	T = 24
post-event period	overall	.5833333	.4936119	0	1	N = 408
	between		0	.5833333	.5833333	n = 17
	within		.4936119	0	1	T = 24

F Appendix - Static panel analysis

Table 3: Effect of rent-to-price ratio on the expected price change

	(1) Pooled β / SE	(2) Between β / SE	(3) Fixed effects β / SE	(4) Random effects β / SE
<i>Estimated rent to price</i>				
est_r2p	−5.041*** (0.415)	0.734* (0.391)	−5.478*** (0.428)	−1.423*** (0.344)
<i>Post event period</i>				
period_dummy	0.023 (0.032)		0.024 (0.032)	0.020 (0.038)
<i>Interaction:rent to price x event period</i>				
r2p_after	−1.882*** (0.472)	−1.308 (0.822)	−2.019*** (0.474)	−0.759 (0.541)
Constant	0.332*** (0.061)	0.015*** (0.005)	0.359*** (0.031)	0.105*** (0.028)
Observations	408	408	408	408
LR chi2	213.401			44.386
F		3.211	76.943	

Real Estate Law
Chaired by Susanna Weibull

Human rights and tenure security in the Swedish residential tenancy legislation

Haymanot Baheru

The Swedish legislation for residential tenancies has historically been closely tied to the idea of tenement rights, i.e. the idea of treating the home the tenant has established in the rented dwelling as a home worth preserving. Ideas of tenement rights derive from the social rights movements in the first half of the last century. The case law from the ECtHR has developed a tenure protection within the human rights paradigm. The protection is considered to be an inherent part of the right to respect for home, proclaimed in Art. 8 ECHR.

Unlike the tenure protection prescribed by Ch. 12 in the Land Code, the tenure protection from the human rights paradigm in Swedish tenancy law provides protection to a wider circle of residents as it departs from the need to protect the individual and his/her attachment to the home. Most importantly, the establishment of the protected position is not conditioned by attaining the privileged position of being a contractual partner.

The presentation will discuss common grounds and areas of divergence between the two simultaneously applicable paradigms, as well as challenges to the Swedish rental market.

The presentation is based on the article in JT 2018/19 no. 1, p. 67 ff. titled (in translation): “The convention based tenure security: application of Art. 8 ECHR”.

Förhållandet mellan fastighetsbildningslagen och regeringsformens egendomsskydd vid tvångsvis marköverföring

1. Inledning

När tvångsvisa ianspråktaganden av fastigheter kommer på tal förs tankarna inte sällan till situationer där stat eller en kommun exproprierar hela eller en del av en fastighet. Något som ibland faller i glömska är att tvångsvisa omfördelningar av äganderättsstrukturen till och utformningen av fastigheter även kan genomföras med stöd av fastighetsbildningslagens (FBL) regler kring fastighetsreglering.¹ Det kanske främsta kännetecknet för dessa fastighetsregleringar, som bl.a. innebär att markområden kan överföras från en fastighet till en annan utan stöd av överenskommelse, är att tvångsmomentet utövas mellan *enskilda rättssubjekt* i form av fastighetsägare. Det sagda kan sägas innebära en viss diskrepans gentemot ianspråktaganden som sker med stöd av expropriationslagen eller någon annan fastighetsrättslig speciallagstiftning, där det ofta – men absolut inte nödvändigtvis – är fråga om offentliga rättssubjekt som tar i anspråk och överför äganderättigheter från enskilda till det allmänna.

En stötesten vid tvångsvisa marköverföringar som successivt blivit synliggjord är hur stort mått av tvång som i egentlig mening kan utövas av en fastighetsägare gentemot en granne med stöd av fastighetsbildningslagen. Denna oklarhet bottnar i det faktum att FBL:s skyddsvillkor som är gällande vid tvångsvisa marköverföringar saknar – till skillnad från många andra fastighetsrättsliga speciallagstiftningar som legitimerar tvångsförvärv – en tydlig avvägningsregel mellan enskilda och allmänna intressen.² I avsaknad av en sådan avvägningsregel som balanserar det allmänna intresset av att omfördela markresurser gentemot den enskildes intresse av att få behålla sin egendom kan det ibland – inte helt oväntat – uppkomma marköverföringssituationer där graden av det allmänna intresset framstår som relativt svagt. Detta väcker i mer tveksamma fall frågetecken ur rättskänslsynpunkt, men även och framförallt,

¹ Se härom främst 5 kap. FBL som rör fastighetsreglering.

² Jfr Peter Ekbäck Krav på väsentlighet, lönsamhet och utformning vid tvångsförvärv av mark och rättigheter – en analys av gällande skyddsvillkor SvJT 2008 s. 688 ff. som argumenterar för att ett s.k. väsentlighetvillkor, likt det som återfinns i exempelvis 7 kap. FBL och i anläggningslagen, borde införas även i 5 kap. FBL som reglerar marköverföringsfallen.

sett till egendomsskyddet i regeringsformen vars lagtext bl.a. stadgar att ingen ska behöva avstå sin egendom förutom när egendomen behövs för ett *angeläget allmänt intresse*.³

Just det nämnda förhållandet mellan FBL:s regler vid tvångsvisa marköverföringar och regeringsformens egendomsskydd var föremål för en HD-prövning under hösten 2018.⁴ Frågan i målet var om fastighetsbildningslagens skyddsvillkor vid tvångsvis marköverföring genom fastighetsreglering uppfyller egendomsskyddets och Europakonventionens krav på att det allmänna intresse som finns för att genomföra en åtgärd *ska stå i proportion* till den enskildes intresse av att få behålla sin egendom orörd. Uppfyller fastighetsbildningslagens skyddsvillkor i befintligt skick denna avvägning eller fordras en från fastighetsbildningslagen extern och fristående prövning där det allmänna intresset balanseras gentemot det enskilda?

2. Översikt av FBL:s förutsättningar vid marköverföring

Om jag som fastighetsägare vill utöka arealen av min fastighet skulle jag kunna vända mig till min granne och träffa en frivillig överenskommelse om att ett visst antal kvadratmeter genom en fastighetsreglering ska överföras från grannens till min fastighet. I det fall min granne vägrar gå med på en försäljning skulle jag i egenskap av fastighetsägare ändå kunna få markområdet överfört till min fastighet genom en *tvångsvis fastighetsreglering* vars förutsättningar utreds och prövas av lantmäteriet. En tvångsvis fastighetsreglering i form av en marköverföring kan dock enbart ske om FBL:s villkor till skydd för allmänna och enskilda intressen är uppfyllda.

De allmänna intressen som ska beaktas vid fastighetsreglering finns i FBL:s tredje kapitel och gäller vid såväl tvångsvisa som frivilliga fastighetsregleringar, dvs. de ska alltid prövas. Bestämmelserna innehåller bl.a. de allmänna krav som från samhällets sida uppställts på en fastighets utformning och funktioner samt mer specifikt utpekade allmänna intressen som samhället ansett som skyddsvärda vid all typ av fastighetsreglering.⁵ Om något av tredje kapitlets villkor inte är uppfyllda kan en yrkad fastighetsreglering – inklusive marköverföring – inte genomföras utan lantmäteriet måste i så fall ställa in förrättningen.

Från de s.k. allmänna lämplighetsvillkoren framgår det bl.a. att en yrkad fastighetsreglering ska leda till att fastigheten sett till *belägenhet, omfång* och

³ 2 kap. 15 § RF.

⁴ Se *NJA 2018 s. 753*, "Parkfastighetsmålet".

⁵ Se Peter Ekbäck, Fastighetsbildningslagen och fastighetsbestämning. Om fastighetsbildningslagen m.m. 2012 Stockholm s. 23 ff. Återges nedan som Ekbäck 2012.

övriga förutsättningar är varaktigt lämpad för sitt ändamål.⁶ Hur prövningen sker på detaljnivå styrs med andra ord av *vilket ändamål* som föreligger hos fastigheterna som ingår i den yrkade åtgärden. Faktorer som alltid är viktiga att beakta och som även följer av lagtexten är att fastigheternas utformning och arrondering ska vara lämpliga samt att fastigheten får tillgång till nödvändiga vägar utanför sitt område. Om en ny utfartsväg fordras till en allmän väg får dock fastighetsregleringen inte genomföras om den förorsakar en väsentlig olägenhet för trafiken på den allmänna vägen.⁷

Vidare så får en yrkad fastighetsreglering inte genomföras om den strider mot en detaljplan eller områdesbestämmelse samt inte genomföras på ett sätt så att syftet med vissa naturvårdsföreskrifter motverkas.⁸ Om området där fastighetsregleringen äger rum inte är planlagt får åtgärden inte heller genomföras om den försvårar områdets ändamålsenliga användning, föranleder olämplig bebyggelse eller motverkar en framtida planläggning av området.⁹

Vid fastighetsreglering där fastigheterna är jord- eller skogsbruksfastigheter finns vidare speciella skyddsregler som blir gällande vid fastighetsregleringar som berör sådana fastighetstyper.¹⁰ Bakgrunden till dessa skyddsvillkor torde bäst kunna ses som att det finns ett allmänt intresse av att utforma jord- och skogsbruksfastigheter på ett sätt som gör att effektiviteten och lönsamheten bevaras och inte tar skada på ett sätt som skulle kunna vara ofördelaktigt sett till bl.a. rikets möjligheter till självförsörjning av det som dessa fastighetstyper i någon mening producerar.¹¹

I FBL:s femte kapitel finns villkoren till skydd för enskildas intressen. Dessa villkor kan ses som en gräns för hur stora inslag av tvång som kan utövas av en fastighetsägare gentemot en annan fastighetsägare utan stöd av överenskomelse men med stöd av fastighetsbildningslagen.¹² Skyddsvillkoren i det femte kapitlet är dock dispositiva vilket innebär att de – till skillnad mot det tredje kapitlets villkor – enbart prövas när det är fråga om tvångssituationer.¹³

Ett första krav som dessa villkor ställer upp är att alla tvångsvisa marköverföringar måste leda till en *positiv netto nytta*, vilket regleras genom det s.k. båtnadsvillkoret.¹⁴ Att regleringen ska leda till en positiv båtnad kan förenklat sägas innebära att fastigheternas marknadsvärdeförändringar ska vara större än

⁶ Se 3 kap. 1 § FBL.

⁷ Se 3 kap. 4 § FBL.

⁸ Se 3 kap. 2 § FBL.

⁹ Se 3 kap. 3 § FBL.

¹⁰ Se 3 kap. 5–7 §§ FBL.

¹¹ Jfr Ekbäck 2012 s. 48 ff.

¹² Se a.a. s. 116 f.

¹³ Se 5 kap. 18 § FBL. Ett undantag från detta är det s.k. opinionsvillkoret som alltid måste prövas om det aktualiseras.

¹⁴ Se 5 kap. 4 § FBL.

kostnaderna för sakägarna att genomföra marköverföringen, dvs. åtgärden ska generera en vinst.

Ett andra krav som uppställts är att den sökande fastigheten måste *förbättras* genom marköverföringen.¹⁵ Förbättringsvillkoret kan kortfattat sägas innebära att den sökande fastigheten sett till dess ändamål, genom tillskottet av mark, i någon mening måste förbättras sett de funktioner som normalt fordras för en sådan fastighetstyp. Noterbart är att prövningen om en förbättring sker ska utgå från någon form av normaliserat förhållande, dvs. utan hänsyn till den tillfällige ägarens mer personliga behov av att genomföra regleringen.

Vidare så finns det även krav på att det inte får föreligga en allt för stor opinion gentemot en yrkad reglering om denna har påkallats av någon annan än sakägare.¹⁶ Fastighetsregleringen ska även ske i den omfattning som avses med ansökan samt, om flera alternativa utföranden av regleringen står till förfogande, så ska det alternativ väljas som innebär den minsta olägenheten utan att en oskäligen försämring av lönsamheten inträffar.¹⁷ Det finns även ett generellt förbud mot att överföra markområden där det på markområdet finns byggnader som inte har ett endast obetydligt värde.¹⁸ Genom det s.k. *fastighetskyddet* får regleringen inte heller medföra att fastigheten efter genomförandet är mindre lämpad för sitt ändamål samt att fastighetens s.k. graderingsvärde inte får ökas eller minskas i en sådan omfattning som innebär att en avsevärd olägenhet uppkommer för fastighetens ägare.¹⁹

Om villkoren vid tvångsvis marköverföring systematiseras inses att det inte finns någon regel som direkt väger och sätter det allmänna intresset av marköverföringen som sådan i förhållande till det enskilda intresset av att få behålla sin egendom orörd.

3. Kort om RF 2:15 och förhållandet gentemot FBL före HD:s avgörande

Enligt egendomsskyddet i regeringsformen ska alltså ingen fastighetsägare kunna avtvingas sin egendom förutom när det behövs för att tillgodose angelägna allmänna intressen. Vad som på en detaljnivå är ett angeläget allmänt intresse är dock inte helt klarlagt. Förarbetena till regeringsformen talar här något svävande om att vad som i en viss situation är ett angeläget allmänt intresse till syvende och sist "... *måste* [...] *bli föremål för en politisk värdering*

¹⁵ Se 5 kap. 5 § 1 st. FBL.

¹⁶ Se 5 kap. 5 § 2–3 st. FBL.

¹⁷ Se 5 kap. 6 § FBL.

¹⁸ Se 5 kap. 7 § FBL.

¹⁹ Se 5 kap. 8 § FBL.

*där hänsyn då även måste tas till vad som är godtagbart från rättssäkerhetssynpunkt i ett modernt och demokratiskt samhälle.”*²⁰

I propositionen framhålls det även att uttrycket om angelägna allmänna intressen *anknyter* till egendomsskyddet i Europakonventionen,²¹ där det från det första tilläggsprotokollet bl.a. framgår att ingen ska berövas sin egendom förutom i det allmännas intresse. Ett led i prövningen, som följer av Europadomstolens praxis för området, av om ett tvångsvist egendomsavhändande är förenligt med konventionens egendomsskydd är att det ska göras en balansering – proportionalitetsavvägning – mellan graden av det allmänna intresset av att genomföra egendomsöverföringen kontra den enskildes intresse av att fortsatt behålla sin egendom orörd.²² Det räcker alltså inte i konventionens mening med att egendomsöverföringen ska ske för ett allmänt intresse – den måste även stå i proportion till intrånget i den enskildes äganderättssfär.

Proportionalitetsavvägningen ska vidare göras som ett trestegsförfarande:²³ 1) är det aktuella ingreppet ägnat att tillgodose det *avsedda ändamålet*? 2) är det aktuella ingreppet *nödvändigt* för att tillgodose det avsedda ändamålet eller finns det andra mindre ingripande alternativ? och 3) står den fördel som det allmänna vinner *i rimlig proportion* (proportionalitet i strikt mening) till den skada som ingreppet förorsakar den enskilde?

Under utredningsarbetet vid reformeringen av regeringsformen och som föranledde propositionen anförde Fri- och rättighetskommittén att tvångsvisa marköverföringar enligt FBL faller under egendomsskyddets krav på att tvångsöverföringen måste vara av ett angeläget allmänt intresse.²⁴ Kommittén menade vidare att de fastighetsrättsliga lagstiftningar som medger ingrepp i enskildas egendom genom sina respektive avvägningsbestämmelser uppfyller egendomsskyddets krav på angelägna allmänna intressen; några förändringar av skyddsreglerna i respektive lagstiftning för att nå upp till kravet på angelägna allmänna intressen behövdes därför inte göras.²⁵

Denna inställning delades även av regeringen som i propositionen, i enlighet med kommittén, slog fast att inga förändringar av gällande lagstiftningars skydds- eller avvägningsregler var nödvändiga.²⁶ Kravet på att ett egendomsavhändande måste ske för ett angeläget allmänt intresse samt uppfylla proportionalitetsavvägningen enligt Europakonventionen var alltså båda vid tidpunkten

²⁰ Se prop. 1993/94:117 s. 48 f.

²¹ Se a.st.

²² Se allmänt om proportionalitetsprincipen i Karin Åhman, Egendomsskyddet: Äganderätten enligt artikel 1 första tilläggsprotokollet till den europeiska konventionen om de mänskliga rättigheterna 2000 Uppsala s. 361 ff.

²³ Se t.ex. RÅ 1999 ref. 76.

²⁴ Se SOU 1993:40 del A s. 64 f.

²⁵ Se SOU 1993:40 del A s. 235 f.

²⁶ Se prop. 1993/94:117 s. 16 f.

för propositionen uppfylla inom ramen för de prövningar som gällande tvångslagstiftningar då fordrade.

Det sagda innebär för fastighetsbildningslagens del att de villkor som finns till skydd för enskilda intressen i det femte kapitlet ansågs uppfylla såväl kravet på angelägna allmänna intressen som de krav som Europakonventionen uppställer för att ett egendomsberövande ska kunna legitimeras. Någon från fastighetsbildningslagen extern och fristående prövning i graden av en yrkad marköverförings allmänintresse eller om marköverföringen står i proportion till det enskilda intresset fordrades alltså inte vid denna tidpunkt.²⁷ Det kan även noteras att regeringen i propositionen särskilt uttalar att egendomsskyddet i regeringsformen inte utgör något hinder för tvångsvisa marköverföringar enligt fastighetsbildningslagen givet att marköverföringen sker för ett angeläget allmänt intresse.²⁸

Förhållandet mellan fastighetsbildningslagens skyddsregler vid tvångsvisa marköverföringar och egendomsskyddet i regeringsformen var efter grundlagsändringen föremål för prövning av HD i ett servitutsmål.²⁹ HD kom då fram till att grundlagsändringen inte påverkar prövningen vid fastighetsbildningar i en mer restriktiv än vad som var gällande före reformeringen.³⁰ Slutsatsen från redogjorda förarbeten och praxis kan alltså sammanfattas som att inga externa villkor från fastighetsbildningslagen var nödvändiga att pröva vid tvångsvisa marköverföringar, dvs. om fastighetsbildningslagens villkor var uppfylla skulle marköverföringen kunna genomföras utan stöd av överenskommelse.

4. Bakgrund till det aktuella målet och underinstanserna

En ägare till fastigheten A yrkade hos Lantmäteriet om att överföra 210 kvadratmeter från grannfastigheten B till den egna fastigheten A. Ägaren till B motsatte sig överföringen varav det blev fråga om en tvångsvis marköverföring från B till A utan stöd av överenskommelse. Vidare så är A en fastighet för bostadsändamål medan B är en större fastighet som har en parkliknande trädgårdskaraktär och är belagd med bebyggelseförbud enligt en detaljplan.

²⁷ Se dock Bertil Bengtsson, En problematisk grundlagsändring, SvJT 1994 s. 923 ff. som, före NJA 1996 s. 110, flaggade för att den reformerade grundlagen potentiellt innebär en mer restriktiv tolkning av FBL:s skyddsregler.

²⁸ Se prop. 1993/94:117 s. 49 f.

²⁹ Se NJA 1996 s. 110.

³⁰ Det kan noteras att NJA 1996 s. 110 gällde ett servitutsmål där 7 kap. FBL blev gällande. Detta kapitel innehåller en väsentlig avvikelse jämfört med det femte kapitlet i att det även innehåller ett väsentlighetsrekvisit. Denna diskrepans var dock inget som HD tog i beaktande i sin bedömning av FBL:s förhållande till 2 kap. 15 § RF.

Bakgrunden till den yrkade marköverföringen om 210 kvadratmeter var att den skulle förbättra möjligheterna till parkering och vändning av fordon på den egna fastigheten. Syftet var alltså att *förbättra* den befintliga trafiksituation på fastigheten, dvs. det var redan med befintlig fastighetsutformning möjligt att parkera enstaka bilar samt, förvisso med vissa svårigheter, möjligt att vända fordon. Marköverföringen skulle dock göra att dessa funktioner förbättrades.

Lantmäteriet såg inget hinder i fastighetsbildningslagens skyddsvillkor, utan beslutande om att marköverföringen skulle genomföras i enlighet med yrkandet. Förrättningen överklagades till mark- och miljödomstolen som fann att det ytterligare marktillskottet till A inte var en nödvändighet sett till 3 kap. FBL och att förbättringsvillkoret i 5 kap. 5 § 1 st. FBL därför inte var uppfyllt. Mark- och miljödomstolen beslutande därför att marköverföringen inte kunde genomföras utan stöd av överenskommelse.

Mark- och miljööverdomstolen bedömde att inga hinder förelåg för marköverföringen sett till FBL:s regler, men att överföringen skulle komma att strida mot såväl 2 kap. 15 § RF som första tilläggsprotokollet i Europakonventionen. Mark- och miljööverdomstolen uttalade i domskälen att marköverföringen förvisso förbättrar fastigheten A, men att överföringen inte når upp till den grad av allmänt intresse som fordras enligt de båda egendomsskydden. Även denna dom överklagades och fick alltså prövningstillstånd i HD.

5. HD:s prövning jämte korta kommentarer

5.1 Huvudfrågan i korthet

Den övergripande frågan för målet är vilka förutsättningar som är gällande vid tvångsvisa marköverföringar enligt fastighetsbildningslagen. Räcker det att skyddsvillkoren i 5 kap. FBL är uppfyllda eller fordras även en extern prövning gentemot egendomsskyddet i 2 kap. 15 § RF och det där uppställda kravet på att överföringen måste ske för ett angeläget allmänt intresse samt stå i proportion till den skada som åsamkas den enskilde?

5.2 Fastighetsbildningslagens förhållande gentemot regeringsformens egendomsskydd – nytt rättsläge

Det enda av skyddsvillkoren som direkt var föremål för prövning i HD var förbättringsvillkoret. HD konstaterar mycket kortfattat att marköverföringen skulle ge den sökande fastigheten ett ökat utrymme för parkering och vändning av fordon. Den yrkade marköverföringen anses därför uppfylla kravet på att en förbättring måste ske hos den sökande fastigheten. Alla andra skyddsvillkor i

såväl det tredje som det femte kapitlet i FBL anses inte utgöra något hinder för överföringen.

I enlighet med rättsläget efter NJA 1996 s. 110 hade marköverföringen kunnat genomföras med stöd av enbart fastighetsbildningslagen. Dittills har det alltså räckt med att pröva FBL:s villkor ensamt för att avgöra om en tvångsvis marköverföring är förenlig med egendomsskyddet i regeringsformen. HD:s tillåtlighetsprövning stannar dock inte här, utan man menar att även en extern och särskild proportionalitetsavvägning måste göras mellan det enskilda och allmänna intresset av åtgärden.

Det kan noteras att den praxis från Europadomstolen som proportionalitetsprincipen i dessa sammanhang bygger på redan existerade vid lagstiftningsarbetet om egendomsskyddet. HD anför i domskälen att principen efter denna tidpunkt har kommit att bekräftas genom ett stort antal avgöranden och att den även fått genomslag inom den svenska rättsutvecklingen på ett sätt som innebär att den ska prövas i det enskilda fallet: ”*Som avspeglas i rättsfallet NJA 2013 s. 350 är det inte längre ifrågasatt i svensk rätt att principen måste ges genomslag i det enskilda fallet.*” (se p. 20)

Vidare anför HD i domskälen att det *numera står helt klart* att samma proportionalitetsprincip följer av egendomsskyddet i 2 kap. 15 § RF.³¹ Man anför att rättsutvecklingen för svenska förhållanden även i andra avseenden gått i en riktning innebärande att grundläggande fri- och rättigheter numer ”... *ges en konkret inverkan på rättstillämpningen.*”³² (se p. 21).

HD:s slutsats för fastighetsbildningslagens varande i förhållande till 2 kap. 15 § RF är att dess skyddsvillkor *inte längre* uppfyller de krav på proportionalitet som *över tid* utvecklats inom svensk rätt. Förutsättningarna för att kunna genomföra en tvångsvis marköverföring utan stöd av överenskommelse har med andra ord förändrats så till vida att egendomsskyddet för dessa fall fordrar en proportionalitetsbedömning i det enskilda fallet. HD uttalar i detta avseende i sina domskäl att det tidigare rättsläget som följde av NJA 1996 s. 110 numer är överspelat:

Det synsätt som har utvecklats i svensk rätt över tid innebär alltså att egendomsskyddet kräver en proportionalitetsbedömning i det enskilda fallet, något som har fått genomslag på ett flertal rättsområden. Den utvecklingen, som kommit till uttryck i flera rättsfall under 2000-talet, leder till att den slutsats som i rättsfallet NJA 1996 s. 110 drogs om tillämpningen av fastighetsbildningslagen får anses överspelad. Innebörden av senare praxis är i stället otvetydigt att det måste göras en prövning i det enskilda fallet av proportionaliteten mellan allmänintresset av ett tvångsförfogande och den enskildes egendomsintresse. (se p. 22)

Som redogjorts för ovan ska proportionalitetsbedömningen göras i ett trestegsförfarande. HD uttalar här att fastighetsbildningslagens bestämmelser som är

³¹ HD refererar här till RÅ 1999 ref. 76, NJA 2014 s. 332 p. 19 och NJA 2017 s. 999 p. 15.

³² HD refererar här till NJA 2014 s. 323 och NJA 2017 s. 503.

gällande vid tvångsvis marköverföring i viss utsträckning, men inte fullt ut, uppfyller kravet om proportionalitetsavvägning i det enskilda fallet. Det är enligt HD särskilt tydligt vad gäller det tredje ledet i prövningen om marköverföringen utgör proportionalitet i strikt mening då aktuella regler, enligt HD, inte innehåller någon sådan avvägningsregel (se p. 24).

Mot bakgrund av det sagda måste en från fastighetsbildningslagen extern och fristående proportionalitetsavvägning göras där det allmänna intresset av att genomföra överföringen balanseras gentemot den enskildes intresse av att behålla sin egendom (se p. 25). Här kan även noteras att HD uttalar att kraven om ändamålsenlighet och nödvändighet *i stort sett beaktas* redan genom prövningen av fastighetsbildningslagens bestämmelser, men att detta alltså inte är fallet med proportionalitet i strikt mening som istället fordrar en särskild och extern prövning (se p. 27).

5.3 HD:s bedömning i det aktuella fallet

HD konstaterar att de funktioner som kan ställas på en bostadsfastighet kan utgöra ett angeläget allmänt intresse, vilket tillgång till parkering i skälig utsträckning anses utgöra. Aktuell fastighet har dock redan i befintligt skick tillgång till parkering i viss utsträckning och möjlighet till att vända bilar, dock med en något begränsad svängradie. Fastighetens befintliga funktioner förbättras alltså, men marköverföringen tillför inte några nya funktioner till bostadsfastigheten. HD konstaterar mot bakgrund av detta att kraven på ändamålsenlighet och nödvändighet med en mycket liten marginal är uppfyllda för den yrkade marköverföringen. (se p. 27)

När det gäller det tredje ledet i proportionalitetsavvägningen, den om proportionalitet i strikt mening föreligger, uttalar HD att den avstående fastighetens ägares intresse främst ligger i att inte behöva utsättas för tvångsvisa avhändanden av sin egendom. Det som HD ger mest vikt i avvägningen framstår med andra ord vara det enskilda intresset av inte behöva avstå sin egendom tvångsvis. När HD balanserar detta enskilda intresse gentemot det allmänna intresset av att förbättra den sökande fastighetens parkerings- och vändningsmöjligheter kommer man fram till att det senare är *mycket lågt* och att marköverföringen, trots att ersättning skulle komma att utgå, skulle medföra ett *oproportionerligt intrång i ägarens egendomsskydd*.³³ (se p. 28) HD:s slutsats blir därför att den yrkade marköverföringen kommer i konflikt med egendomsskyddet i regeringsformen och att den med anledning av detta inte kan genomföras. (se p. 29)

³³ Noterbart är att Lantmäteriet beslutande om en ersättning om 1,2 miljoner kr för de 210 kvadratmetrarna vilket ägaren alltså inte ansåg vara tillräckligt mycket för att låta överföringen äga rum.

6. Vad innebär det nya rättsläget?

Det nya rättsläget som det aktuella HD-avgörandet gett upphov till är onekligen intressant från flera perspektiv. Den mest konkreta förändringen torde häri bestå av att *förutsättningarna* för att kunna genomföra en tvångsvis marköverföring med stöd av fastighetsbildningslagen har förändrats. Det räcker inte längre med att enbart pröva om en yrkad marköverföring uppfyller skyddsvillkoren i FBL:s tredje och femte kapitel, utan nu fordras även en från fastighetsbildningslagen extern och fristående prövning gentemot regeringsformens egendomsskydd i form av en proportionalitetsavvägning mellan allmänna och enskilda intressen. Det räcker med andra ord inte att en yrkad marköverföring uppfyller FBL:s villkor – den måste även efter en från FBL fristående prövning uppfylla kravet om angelägna allmänna intressen i 2 kap. 15 § RF.

Att HD underkände att FBL:s skyddsvillkor ger uttryck för en balans mellan det allmänna intresset av att genomföra en viss åtgärd gentemot den enskildes intresse av att ha kvar sin egendom orörd torde dock inte framstå som speciellt märkvärdigt.³⁴ I det fall HD alternativt inte fällt marköverföringen hade regeringsformens egendomsskydd framstått som ett starkt skydd på pappret, men som i praktiken inte existerar för den enskilde när det kommer till äganderättsöverföringar av fast egendom i det allmännas intresse.

En komplikation som följer av det nya rättsläget är dock *när* det allmänna intresset av att genomföra en tvångsvis marköverföring genom fastighetsreglering når över tröskeln och trumfar det enskilda intresset av att få behålla egendomen orörd, dvs. när föreligger proportionalitet i strikt mening? För detta finns det ingen magisk formel att ta till, utan det blir som i många andra sammanhang en bedömning från fall till fall. En aspekt som torde ges viss tyngd i en sådan avvägning är om fastigheten redan har den befintliga funktionen som marköverföringen syftar till att förbättra eller om marköverföringen alternativt tillskapar en helt ny funktion som är nödvändig för att fastighetens ska kunna utnyttjas ändamålsenligt. Det förra var förhållandet i HD-avgörandet där fastigheten som skulle tillföras mark redan hade möjlighet till parkerings- och vändningsmöjligheter, men dessa var något snålt tilltagna och skulle förbättras vid en tillförsel av viss mark. För detta förelåg inte proportionalitet i strikt mening enligt HD. Frågan är dock om utfallet hade blivit ett annat om fastigheten helt saknat möjligheter till parkering och vändning av fordon på den egna fastigheten.

Oavsett hur man ser på det sagda om angeläget allmänt intresse och proportionalitet i strikt mening vid de situationer som kan aktualiseras vid marköverföringar enligt FBL så kommer det nya rättsläget troligen innebära vissa svårigheter för Lantmäteriet som är den myndighet som tillämpar och prövar

³⁴ Det som i efterhand framstår som mer märkligt är att man såväl under lagstiftningsarbetet av egendomsskyddet som i NJA 1996 s. 110 ansåg att FBL till fullo uppfyllde kravet om angeläget allmänt intresse.

reglerna i praktiken. För de fall där en marköverföring sker i syfte att anpassa en fastighet till en detaljplan torde dock regeringsformens egendomsskydd alltid vara uppfyllt då hänsyn till såväl allmänna som enskilda intressen redan skett genom detaljplaneprocessen.³⁵ En detaljplan ska ju som bekant inte antas om det enskilda intresset skadas i för stor utsträckning – då får planen istället göras om eller helt slopas.

Svårare blir dock bedömningen gällande när en marköverföring når upp till att vara ett angeläget allmänt intresse och utgöra proportionalitet i strikt mening när marköverföringen *inte* sker i syfte att genomföra en detaljplan. Här skulle det vara önskvärt att Lantmäteriet tog fram riktlinjer för hur förrättningslantmätarna ska förhålla sig till och bedöma åsyftade situationer för att undvika något som kan liknas vid ”frukostförrättningar”.³⁶ Om sådana riktlinjer inte tas fram torde det finnas en risk för att magkänslan blir styrande när balansakten mellan allmänna och enskilda intressen ska avgöra om en tvångsvis marköverföring kan genomföras, vilket skulle vara en olycklig följd av att tvångsvisa marköverföringar med stöd av fastighetsbildningslagen numer även fordrar en fristående prövning gentemot grundlagen.

Marc Landeman

³⁵ Jfr t.ex. 2 kap. 1 § PBL.

³⁶ Det ska alltså i likhet med domarens roll inte spela någon roll vad lantmätaren ”åt till frukost” för utfallet av prövningen. Det torde dock finnas en risk för att proportionalitet i strikt mening ibland kan få en innebörd som bestäms av magkänslan hos lantmätaren i frånvaro av tydliga riktlinjer för hur denne ska förhålla sig till frågan.

Accessibility adaptations in multi-unit buildings – The Swedish approach to achieving universal accessibility in an aging housing stock

Dr Elisabeth Ahlinder

Abstract

The Swedish legal framework regarding accessibility is primarily based on the regulations regarding accessibility that can be found in the Planning and Building Act (PBL) and the Housing Adaptation Grant Act (HAGA).

PBL imposes technical requirements with respect to all newly construction of buildings. According to PBL, the physical environment in the common areas of a building, indoors as well as outdoors, and in the separate apartments generally are to have good accessibility for persons with reduced mobility or ability to orientate.

PBL, however, does not provide any technical requirements with respect to older buildings. Since the majority of the multi-unit buildings in Sweden are over 40 years old, the technical requirements of PBL do not govern most residents Sweden, are not binding and therefore not enforceable. For example, it is not possible to require that the owner of an older building increase the general accessibility of the building to meet the standards as laid down in PBL.

The Swedish approach to achieve universal accessibility in the older part of the housing stock is based to a large extent on public grants and economic incentives, rather than imposing requirements on the owners of multi-unit buildings. HAGA aims at reducing financial obstacles and economically-based objections as to making accessibility adaptations. The grants cover adaptations that an applicant might need within the apartment. This can be, for example, handrails in a bathroom, adjustments needed to get in or around the building's inside and/or outside common areas. Such can be, for example, the instalment of an automatic entrance door, a ramp to enter an outside playground accessible only by steps, or the articulation of surfaces.

The public grant is a fundamental part of the Swedish approach and political policy with regard to universal accessibility. Together with the technical requirements for new buildings, the national aim of the political policy is to achieve the UN goals laid down in the Convention on the Rights of Persons with Disabilities (CRPD), to create equality of opportunity and the possibility of full and effective participation and inclusion of disabled persons in society. Making independent living possible for as many persons with disabilities as possible is a fundamental part of achieving this aim.

The fundamental basis for this approach is generally perceived to be efficient. It has not been substantially questioned or debated. However, whether relying on economic incentives is an efficient approach and a sufficient measure to reduce the current issues of lack of accessibility in a vast majority of the housing stock and achieve the aim of universal accessibility can be questioned.

A fundamental challenge with the Swedish approach is that it does not provide tenants or owners of apartments in older multi-unit buildings with any legal rights as to having the necessary adaptations and adjustment work done. The governmental grant is conditioned upon

a formal written consent by the owner of the building allowing the applicant to make the adjustments in the building. If the owner of an older building declines a request from a tenant or a tenant owner as to making accessibility adjustments in or around the building, the tenant or tenant owner will not be able to receive any governmental grant and is not entitled to make the adjustments.

The unwillingness of a building owner to make adjustments, or to allow adjustments to be made, even at the expense of the public, is a palpable issue in Sweden. The problem however is not perceived to be comprehensive. The fact that some owners do not give their consent to accessibility adjustments also is not considered a matter of substantial relevance for the possibility of achieving the general aim of enhancing the accessibility of the national housing stock. Above all, it has not been considered justified to interfere with the general principle of freedom of ownership to achieve this goal more quickly.

This project aims to discuss and analyse the Swedish approach to achieving universal accessibility in the older part of the multi-dwelling housing stock. Particularly, the possibility for persons living in multi-unit buildings organized as cooperative housing associations to apply for public grants and be able to make necessary accessibility adjustments to the common areas of the building are examined. The purpose is to address and explore whether the Swedish approach to accessibility adaptations in the older part of the housing stock by public grants and economic incentives is an expedient and well-balanced measure for achieving the aim of universal accessibility. The current political and legal stances towards accessibility arguably heavily emphasize the protection of the property right of the building owner. This approach neglects recognizing accessibility as a human right and the necessity to balance this right against other rights and competing interests, such as the property rights of the building owner.

The French experimentation with the framing of rents in tense urban contexts - The development of rent data -

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Preliminary result:

Context. - In the case of residential leases, rents are in principle freely fixed. However, in order to improve access to housing and social mix in tense urban areas, by acting on excessive rents and containing the increase in abusive rents observed in these areas, and thus preserving the purchasing power of the French population, the French legislator intervened, on the occasion of Law n° 2014-366 of 24 March 2014 on access to housing and renewed urban planning, in order to regulate rents. More precisely, it concerns municipalities included in areas of continuous urbanisation of more than 50,000 inhabitants where there is a significant unbalance between housing supply and demand, leading to serious difficulties in access to housing throughout the residential park. Under Decree No 2017-1198 of 27 July 2017, these municipalities are those included in the list annexed to Decree No 2013-392 of 10 May 2013, i.e. the municipalities subject to the annual tax on vacant housing. In tense areas, the prefect shall set each year, by decision, on the basis of data provided by the local rent observatory, a reference rent, an increased reference rent and a reduced reference rent, expressed by a price per m² of living space, by housing category and by the geographical sector. Article 17-I of the Law of 6 July 1989 provides that the increased reference rent may not be set at an amount 20 % higher than the reference rent, while the reduced reference rent may not be set at an amount higher than the reference rent less 30 %. On the basis of these rules, it is intended that the initial rent will be capped at the increased reference rent. The measure was tested in Lille and Paris, but the prefectoral decisions were contested and finally cancelled, which called into question the frameworks that had been planned. At issue was the scope of the decrees, which concerned only certain areas of the municipalities and not the municipalities themselves, a distinction that was not considered in conformity with the 2014 law by the administrative tribunals and then by the courts of the second degree. The french legislator then intervened again on the topic, during the recent law n° 2018-1021 of 23 november 2018 on the evolution of housing, development and digital technology, known as the ELAN law.

The rent framework applies both to leases regulated by law n° 89-462 of 6 July 1989, i.e. contracts concerning the rental of the main residence (more than 8 months in the residence under the terms of article 1 of the 1989 law), and to new mobility leases (leases of less than one year granted). Thus, all these contracts must include the amount of the rent, its payment terms and conditions, as well as any adjustment rules, the reference rent and the increased reference rent, corresponding to the category of housing and defined by the prefect in the tense areas referred to in article 17, I of the law. However, the law does not apply to short-term leases, such as Airbnb, which made it a contested system from the beginning and still does today. The Economic Analysis

Council, attached to the Prime Minister, had already indicated in the ALUR law that, given the risks of inefficiency in the private rental park, it was necessary to experiment with pilot areas before the system became general. This is the approach that the legislator took in 2018. The system now proposed secures the possibility of experimenting with rent control in sectors within an area. The legislator is pragmatic because, within the same zone, different realities can coexist (Illustration during the presentation).

I- A framework conditional on a reliable data collection system

Rent framing implies a reliable system for collecting rent data. The French system is not complete, but is being built step by step. As the Court of Auditors points out in its 2016 report, "the process initiated since 2012, even if not yet completed, appears to be rich and deserves to be resolutely pursued.../.... Everything must therefore be done to preserve this dynamic and ensure the sustainability of the observatories already created or planned".

A- Creation of local rent observatories

Article 48 of the 2014 law requires the creation of local observatories for rents approved by the State to enable the collection of the necessary data, within the framework of an otherwise uniform system that is at least more reliable of the data, and automated. A break is thus made with the multiplicity of data collection mechanisms in this area, even if the diffuse character persists. The approval by the State of these local rent observatories is essential for the implementation of rent control in the municipalities concerned. Therefore, the creation of approved OLL is required in so-called tense areas. However, this development of OLL doesn't imply any obligation for the local authority to set up a rent control system. Decree No. 2014-1334 of 5 November 2014 on local rent observatories, the procedures for communicating and disseminating their data upon the creation of the Scientific Committee for Rent Observation, and an order of 10 November 2014 were adopted.

1°- The need for creation

2°- The content of the creation

B- A delicate implementation

At the end of 2017, the network of observatories included 28 operational organisations in 30 urban agglomerations. However, only four local rental observatories are approved: Olap for Paris and its urban area, ADIL du Nord for the city of Lille, ADIL de l'Orne for the urban area of Alençon, ADIL de l'Ile-et-Vilaine for Rennes métropole. Two are located outside the rental control zone (Alençon and Rennes) and two in the control zone (Paris and Lille where the control was set up respectively as from 1 August 2015 and 1 February 2017). The situation is essentially linked to the composition of the bodies requesting approval and in particular the lack of representation of landlords, tenants and managers within them. The situation is linked to the diversity of nature and

composition of organisations with the status of rent observatories. In practice, the observatories (approved or not) are run by the departmental housing information agencies and urban planning agencies). 11 are managed more precisely by urban planning agencies. However, according to article 16 of Act No. 89-462 of 6 July 1989, "Approval is granted only to observatories whose statutes ensure balanced representation of landlords, tenants and managers within their governing bodies and the presence of qualified personalities within these bodies", while urban planning agencies don't have this kind of governance, despite the close links they have with public and private actors in the sector. The legislator's objective was, on the occasion of the law of 23 November 2018, to adapt the rules to allow the approval of urban planning agencies. Accreditation is important because it requires real estate professionals to transmit information on rents to the observatories. It thus allows a better availability and reliability of rental data in a given territory. However, the judgments annulling the prefectural decisions of 17 October 2017 for Lille and 28 November 2017 for Paris have led to new considerations on the scope of the framework. This question has an impact on the scope of observation and accreditation, which must correspond to the framework scope in order to have the relevant data. Within a tense territory, various realities can be observed. The legislator in 2018 therefore moved towards a finer system of supervision, by identifying sectors within tense territories and stimulating the initiative of local public actors.

1°- Practical difficulties

2°- Legal adaptations

II- A framework conditional on an effective system of sanctions

Despite an existing corrective mechanism, the Lille and Paris experiences have shown the gap that can exist between expected and actual effectiveness.

A- Means of efficiency

As early as 2014, a corrective measure was put in place in tense areas in the event of a discrepancy between the amount of rent charged and the high or reduced amount. A rent reduction action may be initiated by the tenant if the amount of rent fixed in the lease contract, excluding the amount of the rent supplement, if any, is higher than the high rent. This base rent may therefore be contested by the tenant either during the initial lease or, if he or she has not done so, at the time of renewal. The exclusion of the contestation of the rent supplement is explained by the fact that it must take place within three months of the signature of the lease. If it has not been at that time, it can no longer be at the time of renewal. Conversely, a revaluation action may be initiated by the lessor if the rent is lower than the median reference rent minus. In both cases, either party may offer a new rent to its contracting partner, at least six months before the end of the contract for the landlord, and only five months for the tenant, in order to block the possible reaction of the landlord who would notify a leave to avoid suffering a rent reduction. The tenant may contest an action for a rent revaluation by producing references for neighbourhood rents, the minimum number of which is always three or six in municipalities belonging to an agglomeration of more than one million inhabitants. In the event of disagreement between the parties on this readjustment, an amicable

procedure is provided for settling the dispute before the departmental conciliation commission before the judge is seised, all before the end of the contract within strictly defined deadlines. In the event of a rent increase, a mechanism to spread this increase over time is also provided for.

1°-Action in reduction of the rent

2°- Action in rent revaluation

B- Discussed effectiveness

According to a survey carried out in July 2017 by the association Consumption, housing and living environment on the framing of rents in Paris and Lille, 61% of the rent framing system was respected in Paris and 63% in Lille. The investigation does not allow for a very detailed analysis in that it does not take into account cases in which there may have been a legal rent increase linked to a rent supplement. However, the authors of the survey point out a more diversified reality, depending on whether the landlord is a natural person directly managing his dwelling or a professional agent, also depending on the size of the dwelling. For example, the compliance rate is 73% when the property is managed by a professional and only 50% when it is managed directly, even 44% in Paris against 58% in Lille. Finally, the figures tend to show that the higher the apartment, the higher the compliance rate: 68% for the four rooms and only 59% for the studios... The legislator, in 2018, therefore decided to strengthen the coercive measures, with a penalty proportional to the category of landlord: natural or legal person. It would probably be necessary to add a reflection on the modalities and automaticity of control.

1°- Quantified results of French experiences

2°- Reinforcement of civil measures

Lost in Translation: The Challenge of Institutional Factors in Comparative Studies of Transaction Processes and Costs on the Housing Market

Ola Jingryd & Peter Palm

WORKING PAPER! PLEASE DO NOT CITE!

1. Introduction

As any researcher who has ever undertaken one can attest to, comparative studies entail challenges, pitfalls and obstacles from conception to completion. Some obstacles are easy to foresee, such as language barriers and the (un)availability of easily accessible sources. Indeed, the feasibility of any intended comparative study very much hinges on the researcher's ability to access and understand the right sources. However, there are other, perhaps less obvious obstacles to overcome in order to succeed with the undertaking and produce valid findings. Suppose, for instance, that a researcher sets out to compare state subsidies of some kind between countries. In their home country, the subsidy takes the form of a cash payment, i.e. a monthly allowance. Suppose further, however, that the search for an equivalent allowance in the country or countries of comparison yields nothing, leading the researcher to draw the conclusion that the country or countries in question do not have any subsidies of the studied kind. However, the conclusion may well be mistaken, as the subsidy could take the form of a tax break instead of an allowance (cf. Bogdan, 2003). Thus, the researcher runs the risk of looking in the wrong place and drawing invalid conclusions as a result.

Apart from that, and other obstacles related to the researcher's contextual limitations and their effect on the researcher's understanding of the gathered information (cf. Jingryd, 2012, pp. 38-45, and Öcür & Nelken, 2007), one challenge seems to tower over the rest: the diverging institutional contexts. The word "institutional", here, is used in a fairly broad sense, to denote legal, economic, cultural and other related factors that give particular meaning to data from a particular country. For instance, the Swedish Land Code does not prescribe any mandatory intervention by third parties for the validity of a real estate conveyance. The buyer is obliged to seek title registration at the Land Registry, but its function is merely declaratory. This may lead a researcher to conclude that buyers and sellers in Sweden are not afforded legal assistance, as buyers and sellers in civil law countries where the notary intervenes to draw up the deeds and advise the parties. Again, this is a mistaken conclusion, as 90 per cent of all residential real estate conveyances in Sweden are accomplished through real estate brokers, who are legally required *inter alia* to draw up the deeds and give advice. By the same token, the lack of mandatory intervention would seem to invite the conclusion that there are no transaction of that kind, but since the market voluntarily involves brokers to such a large extent, the typical Swedish conveyance must be said to entail such costs.

In Palm et al. (forthcoming) we examined and compared the transaction processes and transaction costs in residential real estate conveyances in Sweden and Croatia. In doing so, we faced challenges in making viable comparative analyses. We set out to conceptualize the real estate conveyance process, creating a model into which we attempted to squeeze the data from both countries. In

short, it was never going to be as straightforward as that. For instance, the Croatian process involves a pre-contracting phase, which is ultimately due to the fact that a binding sale is only accomplished upon notarization. In Sweden, a binding sale is accomplished once both parties have signed the contract of sale, making pre-contracting redundant. The example is a simple yet effective illustration of 1) how the legal framework conditions the functioning of the market, 2) how the comparative researcher must take the legal framework in each studied country into account, and 3) the danger of adopting a narrow *praesumptio similitudinis* (presumption of similarity).

This aim of this paper is to use the Sweden and Croatia comparative study as a case study, to highlight and discuss the inherent challenges facing the comparative researcher.

2. A Closer Look at the Challenges of Comparative Studies

[Here, the difficulties involved in comparative studies are described in more detail, as well as the theoretical framework.]

- The legal families (civil law, common law, Scandinavian “barbarian” civil law)
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- Functionalism v. culturalism

Functionalism essentially rests on the assumption that legal rules and institutions do not exist for their own sake but to fulfil some need, perform some function, in society. While not necessarily causally linked to that assumption, it has also been assumed that most societal needs are the same on a functional level in different countries, giving rise to what has become known as the *praesumptio similitudinis* – the presumption of similarity. Therefore, it has been held amongst functionalists, when comparing legal orders, while the legal rules and institutions may not be equal on a superficial level, there will be a *functional equivalent* to be found.

Functionalism has received criticism, among other things on the grounds that the aforementioned assumptions are “Eurocentric”. It has been asserted that all countries or cultures cannot be assumed to have the same needs, and that one must understand the legal culture of the “other” country in order to properly study it. This school of thought has been labelled *culturalism*.

- Lasser, Jacobsson – “bli bekant med den främmande rättsliga kulturen”
  - “Close reading” of the language and discourse of the foreign legal system
    - Literary methodology
  - Obtain a sympathetic understanding of the foreign legal system
    - Jfr. Weber “

- *Brand, s. 415 f.* Borrowings from Corpus Iuris Civilis [or indeed the Code Civil] may not be connected at all to the social and economic context in the host country. In many instances, they will therefore not be indicative of the social and economic reality in those countries.

3. The Sweden and Croatia Study

[Here, the comparative study is summarized, and the challenges of making comparative analyses discussed using the Sweden-Croatia study as an example].

3.1 A Summary of the Study

Table I. Fees and Taxes in Croatia and Sweden¹

		Croatia		Sweden	
Phase	Fees and taxes	Seller	Buyer	Seller	Buyer
Marketing	Real estate agent's fees	2%	2%	2%	0
	Marketing fees	0	0	150 Euro	0
Pre-contracting and Contracting	Legal fees	0	€345 – 413	0	0
	Appraiser fee	0	€176	0	0
	Bank mortgages fees	0	€135 – 406	0	€30
	Stamp duty, mortgage	0	0	0	2% (of mortgages) €40 adm.
Registration	Stamp duty, ownership	0	0	0	1,5%
	Land registration fee	0	€34	0	€90
	Capital gains tax	0	0	22% (of profit)	0
	Sales taxes	0	4%	0	0
	Legal fees	0	0	0	0
Total		2%	6% + €690 – 1,029	2% + €150	3,5% + €160

3.2 The Swedish and Croatian Legal-Cultural Contexts

- Croatia: a civil law legal culture with an Eastern European legacy. Civil law notaries at the center of important transactions such as real estate conveyances.

¹The table shows which party is obliged to pay the different fees and taxes. However, it is debatable to which extent that party is also the one to ultimately bear the cost. As Varian (1999) points out it is dependent on supply and demand elasticity.

- Sweden: a Scandinavian civil law legal culture, characterized by pragmatism and the desire to promote trade, with a minimum of formalism. Free assessment of evidence in courts, no “pleine foi”

3.3 The real estate market and its characteristics

The real estate market has certain characteristics that distinguish it from other markets. These different characteristics, in turn, have implications on how the real estate market function.

Heterogeneity All real estate is heterogeneous. Two parcels cannot be identical, only similar to each other in terms of building style, building year and size. Regardless of how similar to each other, at least they will differ in terms of location, the plots on which they stand. Each unit is thus unique, and therefore two units cannot be considered exact substitutes for each other.

Fixed location Real estate is immobile, with each property fixed in location. This distinguishes real estate from other goods, as unlike other commodities it cannot be moved to locations of high demand or from locations with low demand. In turn this has implications for the efficiency on the market and with which individual properties may be used. Furthermore, the fixed location also implies a great sensitivity to changes on the local market and sensitivity for externalities that will play a significant role on the price of the property.

Large values Real estate is traded at large values. In relation to average incomes the prices of properties, including residential properties, are relatively high. Most buyers, therefore, are required to depend on the credit market to purchase a property. As a result, the cost and availability of credit directly affects demand for property. Moreover, costs and the availability of credit also affect the supply side, since new construction is also dependent on the availability of credit, thus making the pricing of new construction directly dependent on the cost of credit.

Durability Real estate is more durable than most other commodities. Most buildings are old, and new properties are developed to last for many years to come. This imposes constraints on the market, since it is not possible to make marginal changes in the amount of properties in response to marginal price changes. This, in turn, will affect market efficiency.

Government Intervention The fact that the real estate market consists of durable goods, at fixed locations, representing large values, government intervention is practically inevitable. For example, it becomes an easy target for taxes and fees as the property cannot be moved. Furthermore, government intervention is politically motivated, particularly with respect to housing. Intervention may be direct or indirect, and directed towards either the demand or supply side or both. It can take the form of rent control for housing or subsidies of certain buildings. Another governmental instrument on the real estate market is planning control. This indirectly determines the amount of land available, the use of available land, and the use of buildings. Overall, government intervention in real estate markets influences the market efficiency.

Inelasticity of supply and demand New development of real estate takes time and the supply can, therefore, in the short run be characterised as fixed. Furthermore, regarding supply there are constraints as to how the market can react to price changes. Due to zoning and planning procedures, government intervention, and the relatively long construction period required there will be a lagged response to the market demand. The demand for housing on the other hand is not very responsive to price changes, since housing as such is a necessity for all where no substitutes exist. The implication of this inelasticity of supply and demand of housing is that the market does not readily adjust to prices as an efficient market would.

Transaction costs In addition to the relatively high price of housing, participants on the real estate market incur relatively high transaction costs. These costs may be in the form of money or time. Compared to other commodities, the sale of real estate and housing is encumbered by high transaction costs. In addition to the price of the house, various statutory fees and taxes, fees to professionals, such as real estate agents, notary's, and inspectors must be encountered. In addition to these costs, the completion of a real estate conveyance may take months.

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Transport

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Exploring the Governance of Inclusive Transit Oriented Development: A Case Study of Malmö

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Abstract

Transit-oriented development (TOD) is growing in popularity for creating mixed-use, walkable, dense communities with access to high quality transport, and has consequently been viewed as one of the most sustainable urban development forms. However, it is unsure if TOD has always translated to a better quality of life for residents as such development may cause displacement and exclusion of low-income households and fracturing of mixed-income neighborhoods. When implementing TOD projects, these issues need to be well considered to achieve TOD goals in an inclusive way. Good governance is a key concept to actualize such inclusive TOD along with finance and design of TOD projects. Awareness of institutional agreements, policy alignment, public participation, and transparency and accountability are key concepts included in good governance. The objective of the study is to examine the inclusivity of TOD in Malmö, Sweden from the perspective of governance. The study provides empirical evidence on the governance principles framework for inclusive TOD (Lane 2017) and explores what is and what is not aligned to the selected framework, what is new and what falls outside the framework. This study may contribute to stimulate timely discussion and critical feedback and to influence ongoing debate on emerging issues of inclusivity of TOD. The case study is structured by 31 semi-structured interviews and two focus group discussions (with six respondents). Interviewees included seven public sector representatives, two urban planning experts, one civil society organization representative and 27 residents of Malmö. Interview responses were analyzed against the governance principles framework. The findings of the study identify and discusses: (i) the role of political will to make TOD more inclusive; (ii) public participation to encourage inclusivity in TOD; (iii) organizational structures of the organizations involved in TOD planning and implementation; (iv) integration of transport and other urban planning policies; (v) autonomy of local actors involved in TOD planning and implementation; and (vi) local context as an important factor. The study concludes that implementation of governance principles depends on the local context of an area under study, hence incorporation of locally specific contexts to the governance principles framework is highlighted. The study also proposes to create a balanced approach for public participation, local level autonomy, and communication among local, regional, and national actors for effective implementation of inclusive TOD.

Keywords: Transit-oriented development (TOD); Inclusive TOD; Governance principles framework; Malmö.

1. Introduction

Cities have expanded significantly in recent decades due to the process of urbanization. A drastic increase in the use of private cars over public transportation is becoming a noticeable

issue with the ongoing urbanization. This issue is inter-related to many consequences including air pollution, traffic congestions, and global warming (Sung and Oh 2011; Shirzadi, Babakan et al. 2015). In the case of most developing countries, existing public transportation services are unsuccessful because land use characteristics are not well considered in planning and designing public transit. A mutual relationship exists between transportation and land use as transportation networks have an impact on land use patterns and land uses affect travel demand (Waddell et al. 2007; Yim et al. 2011; Shirzadi, Babakan et al. 2016). The integrated planning and development of public transport, other modes of transport, and land use is recognized as an effective mechanism to achieve long-term public transport goals of functionality and competitive capacity (Hrelja 2015). Therefore, transportation and land use should be considered in relation to one another to efficiently address urban planning from the perspective of sustainable development (Babakan and Talea 2015; Cervero 2001; Singh et al. 2014).

In order to achieve sustainable urban planning, several models have been developed. Among these models, Transit Oriented Development (TOD) has achieved some success (Cervero 2004; Cervero and Dai 2014). According to Schlossberg and Brown (2004), Transit Oriented Development (TOD) is a planning approach that integrates land use and transport planning. TOD is considered one of the sustainable urban development forms as its compact, mixed-use, and pedestrian-friendly development centered around transit stations that encourages the use of public transportation and reduces the use of automobiles (Cervero 2004).

TOD is growing in popularity while much of the focus on the concept is about innovative design and environmental benefits (LeRoy 2006). TOD in and of itself does not guarantee a higher quality of life for residents - displacement and gentrification as a result of development may possibly cause inequality and exclusion, while the benefits only realized for higher-income residents (Mu and de Jong 2012; Lane 2017). Specifically, this can be caused through increased property values and rising cost burdens (Hersey and Spotts 2015). In order to realize the vision of sustainable transportation and communities, TOD must be implemented in an inclusive manner.

With few exceptions, inclusive TOD is not how cities are being built at fast pace. Instead, roads and suburbs are expanding endlessly (ITDP 2015). Literature has shown that successful implementation of inclusive TOD has so far been limited to selected project areas in the United States and systematic adoption of the inclusive principles of TOD has been limited (Lane 2017). Even in countries known for strong strategic planning, such as France, there is a wide gap between theory and practice, and governance is often identified as the main barrier to converting strategic planning objectives into effective action (Liu and L'Hostis 2014).

Good governance has been recognized as one of the vital elements if future TOD is to be inclusive. Lane (2017) identified that inclusive TOD can be achieved through integrated and interrelated processes and tools in three areas: (i) design, including technical aspects (standard key implementation objectives of inclusive TOD – walk, cycle, connect, transit, mix, densify, compact, shift (ITDP 2015)); (ii) finance, including structuring and management of financial and other assets (resources are needed to plan a TOD and inclusivity of TOD depends on availability of capital with terms and conditions that make the development financially feasible (Hersey and Spotts 2015b)); (iii) governance (see Figure 1).

The deductive case study was conducted in Malmö, Sweden with an objective to examine the inclusivity of TOD from the perspective of governance. The study provides empirical evidence on the governance principles framework for inclusive TOD (Lane 2017) and explores what is and what is not aligned to the selected framework, what is new and what

falls outside the framework. This study may contribute to stimulate timely discussion and critical feedback and to influence ongoing debate on emerging issues of inclusivity of TOD.

2. Governance Principles

Based on evidence on the critical role that governance plays in determining societal well-being, it is becoming a ‘hot’ topic (Graham et al. 2003). According to Graham et al. (2003) governance is the interactions among structures, processes, and traditions that determine how power and responsibilities are exercised, how decisions are taken, and how citizens or other stakeholders have their say. It is essentially about accountability and power relationships. In order to make sure that traditional freedom is being enjoyed and citizens are involved in determining the matters of public interest, governance focuses on how power is exercised among the different sectors or interests in society. For establishing good governance mechanisms, principles of good governance were established by Talvitie (1994), the United Nations Development Program (UNDP 1997), Graham et al. (2003) and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP 2006).

Sustainable urban development, being a matter of public interest, requires governance principles to be exercised. When sustainable urban development or sustainable cities are considered, the policy contexts are in place but the extent to which governments can address urban sustainability challenges remains a question (Bulkeley and Betsill 2005). This indicates an impoverished conception of governance and implementation of its principles.

Inclusive TOD delivers the economic, social, and transport benefits of TOD to all residents (Lane 2017) and prioritizes social equity as a key component of TOD implementation (Pollack and Prater 2013). Poverty reduction, environmental protection, tax-base efficiency, and making TOD a promising community development strategy are some of the benefits offered by inclusive TOD (LeRoy 2006). Failure to acknowledge the need for inclusion in the planning and implementation of TOD among urban development processes can lead to negative outcomes for community members (Lane 2017). Inclusive TOD addresses the negative concerns linked to TOD by ensuring that community members are involved in a meaningful way throughout the development process. Involving community members can lead to prioritizing project goals/outcomes that meet the community’s stated needs and mitigate the forces of displacement through design, finance, and government mechanisms in order to retain a diverse ethnic and socioeconomic community (Lane 2017).

According to Lane (2017), making TOD inclusive requires the prioritization and implementation of governance principles i.e. clear institutional arrangements, policy alignment, public participation, and transparency and accountability (see Table 1).

Table 1. Governance Principles Framework for Inclusive TOD, Adapted from Lane (2017)

S.No.	Governance Principles	Definitions	Sub Categories
1.	Clear institutional Arrangements	Refers to relations among public actors (and occasionally private or public/private partnerships) and their relative autonomy in policy, planning, and funding	Common Goals
			Decentralization
			Institutional Capacity

2.	Policy Alignment	Refers to the interrelatedness and appropriate orientation of various public policies that guide and direct certain sectors (for TOD: housing, transport, urban development, land use, and finance) and scales of governance (vertical alignment across national, state, local levels). How these policies relate and interact is essential to the success and sustainability of inclusive TOD because its objective is a broad holistic vision of urban development.	Cross-Sectoral Integration
			Incentive Alignment
3.	Public Participation	Refers to the opportunities open to citizens (such as voting, public hearings) to have a role in the governing and decision-making processes in their neighborhood development process, their city, and beyond.	-
4.	Transparency and Accountability	Refers to the ability of citizens and civil society organizations to access information about key aspects of urban development and their capacity to hold public and private institutions responsible for actions taken.	-

3. Malmö as a Case Study

Based on the framework selected for the study, empirical data was collected during the case study performed in August 2018, in Malmö, Sweden. The details are as follows:

3.1. Malmö's Description

Malmö is the largest city of Sweden's southernmost province, Skåne, and is situated on the Öresund strait separating Sweden and Denmark. It is connected across the strait to Copenhagen, the capital of Denmark, by 8 km of bridge and 4 km of tunnel (Matthiessen 2000). This connection makes Malmö an important transit point from Sweden to Denmark, and through Denmark to the rest of Europe. Malmö is Sweden's third largest city after Stockholm and Gothenburg, with a population of approximately 330,000 (Statistics Sweden 2018). It is Sweden's fastest-growing city, with population growth of approximately 5,000 (1.5 %) in 2017 (Malmö City 2018). Malmö is multicultural, with about a third of inhabitants foreign-born, from 182 countries. It is also a young city, with 48 % of inhabitants under the age of 35.

Since transition from post-industrial decline in the 1970s through economic crises in the 1990s and 2008, Malmö has struggled with social unrest (Anderson 2014). Unemployment in Malmö is high compared to Sweden's other large cities, with over 10 % of the population (16-64) unemployed in 2016. Malmö's welcoming of immigrants has helped regrow the population after economic decline, but ethnic tensions have also risen. New developments in the Western Harbour (formerly home to the city centre's industrial shipyard) and Hyllie (greenfield development south of the city centre) have led to gentrification, accelerating urban segregation between these areas and lower-income suburban districts.

However, Malmö has also been conscious of addressing its challenges, and has incorporated the guiding principles of creating a sustainable city into its a comprehensive plan. Public administration in Sweden is on the national, regional, and local (municipal) levels. Although shared goals are set on the national level, municipalities may determine how to achieve these goals independently. Each municipality in Sweden develops a comprehensive plan including policy, land use, and implementation plans (Green et al. 2017). Figure 2. shows the planning system in Sweden. The organization of the Malmö city government is shown in Figure 3.

Figure. 2 Planning structure in Sweden (MLIT 2014).

Figure 3. Organisation of Malmö city government departments (Malmö City 2018).

3.2. Malmö's Relevance

Malmö was selected as a case study for the three following reasons:

First of all, the city has recovered from recession and population decline through transformation in terms of economic structural changes (Takahashi et al. 2018). The city faced a lot of hardships, followed by the transformation of local industries. Due to the loss of employment opportunities in the manufacturing companies and shipyards, the population of Malmö declined from 266,000 in the 1970s to merely 229,000 in 1985 (Statistiska Centralbyrå'n 2015). Prompted by the socio-economic crisis in the 1990s caused by major job losses, the first integrated local development strategy in Malmö (Vision 2015) was developed. It provided a vision statement of how Malmö should look in 2015. The strategy helped in guiding the city's revitalization by setting out business, environment, city-builders', cultural, social, and youth visions. The strategy was part of a broader renegotiation of local and national level responsibilities regarding the labor market, skills-training, and social assistance (Bevelander and Broomé 2009). The city shifted its dependence from heavy industries to knowledge-based businesses (Malmö Stad 2016). Hence the development in Malmö is new

and the city has the ambition to be a world leader in sustainable urban development. However, it remains a challenge for Malmö to achieve a socially balanced city where everyone can enjoy good conditions for life (Comprehensive Plan for Malmö 2014). Recent developments in Malmö will allow us to trace exclusion during the development process in a better way.

Secondly, Malmö reached a population of approximately 300,000 inhabitants between 1990 and 2008. Only 23% of this number lived in Malmö for the whole of this period. The city serves as an arrival area or transit place for some people and temporary residence for students. Apart from being a transit area, as a result of harsh conditions in the labor market and increased income differences, social polarization or segmentation is very prominent (Stigendal and Östergren 2013). In this way the difference between inclusion and exclusion coincides with segregation (Stigendal 2011). Based on analysis of income, occupation, accommodation, family status, and education, there are very few resource-strong areas in Malmö. A large portion of Malmö is characterized by inhabitants with low income levels and inhabitants born outside the Nordic countries. Only 2% of Malmö's population lives in the resource strong areas and the majority of Malmö's population therefore lives in resource-poor areas (Stigendal and Östergren 2013). As mentioned in the introduction, such kinds of populations are vulnerable to displacement caused by development and exclusion.

Finally, Smedby and Neij (2012) assessed governance for sustainability, with specific focus on institutional capacity, in Sweden. In the study, constructive dialogue was considered as institutional capacity building. The best result was seen in Malmö, where constructive dialogue led to a shared sustainability agreement. This shared agreement was later applied in the development of new construction sites. Keeping in mind the results of this study and institutional capacity being one aspect of governance principles framework being used in our study, Malmö can be seen as a good place to explore whether other governance principles are being adequately employed.

3.3. Case Study Methodology

As the definition of governance indicates that it is a mechanism or process, investigation of it requires on-site observation and data collection. Hence our study explored the case of Malmö in depth, using Lane's (2017) framework, collecting empirical evidence on what is happening on ground. Case study method (Yin 1994) was used to explore the inclusivity of TOD in the Malmö area. In order to collect empirical data based on the governance principles framework, 31 semi-structured interviews and two focus group discussions (with six respondents) were conducted in August 2018. Interviewees included seven public sector representatives, two urban planning experts, one civil society organization representative and 27 residents of Malmö. The stakeholder types were identified based on the framework selected. Table 2. shows the details of the interviewees. Community members (Malmö residents) were selected randomly from 3 different transit nodes. See details in Table 3. and Figure 4. The framework given by Lane (2017) was used to explore the perceptions of stakeholders regarding the inclusivity of the TOD in Malmö. Table 1 provides the detailed framework with governance principles and their sub-categories.

Semi-structured interview and focus group discussion were used to collect data from the stakeholders. Interview questions and discussions were based on the governance principles framework. Additionally, the questions were kept open-ended for more flexible approach in interviews (Yin 1994).

Table 2. Details of the Case Study Interviewees

No. of Interviewees	Symbol	Organization	Stakeholder Types
Focus Group (3)	A	Trafikverket (Swedish Transport Ministry)	Public Sector Representatives
Focus Group (3)	B	Malmö Stad (Malmö City)	Public Sector Representatives
1	C	K2 (The Swedish Knowledge Centre for Public Transport)	Public Sector Representative
2	D	Malmö University	Experts
1	E	Resenärsforum (Traveller's Forum)	Civil Society Organisation Representative
27	F	Malmö Residents	Community Members

All the interviews were conducted in English, as respondents (from Sweden) and interviewers (from Japan) were fluent in English. Each interview lasted for 35 to 45 minutes as guidelines were provided before starting each interview.

All the interviews were audio taped and transcribed. Data collected was coded manually by the authors. The analysis adopted the deductive approach to qualitative data analysis (Miles et al. 2014; Elo and Kyngas 2008). Categorization matrix was developed based on the framework selected for study and all the data was reviewed for content coded for correspondence with or exemplification of the already identified categories (Polit and Beck 2004). Codes which were not fitting in to any categories were isolated and analyzed following the principles of inductive content analysis (Miles et al. 2014). The results are presented in the next section.

Figure 4. Location of Transit Nodes from where Community Members Selected for Interview

Table 3. Details of Community Members Selected for Interview

Station	No. of Respondents

Hyllie	11
Triangeln	8
Malmö C	8
Total	27

4. Results

Based on the four categories of governance principles for inclusive Transit Oriented Development (TOD), data was collected and analyzed. Table 4. gives an overview of the summarized keywords and phrases, from the interview, which supported and did not support the governance principles framework. Figure 5. gives a visual representation of categories, sub-categories under the categories and key information identified via interviews.

Table 4. Overview of summarized key words and phrases, from the interview, against the governance principles framework (Lane 2017)

Category	Sub-Categories	Key Words/Phrases from Interview Data	Supporting	Not Supporting
Clear Institutional Arrangements	Common Goals		Clear objectives of TOD; Beneficial to everyone; Shared vision (at various levels of public sector); Clear public institutional relationships.	Conflict of interest between different tiers of public actors; Ambiguity regarding shared responsibilities; Political will; Lack of consumer focus.
	Decentralization		Clear public institutional relationships; Drawbacks of autonomy at local level/Decentralization or local level monopoly; Autonomy of local actors.	Centralization/Lack of local level autonomy.
	Institutional Capacity		Expertise.	Lack of knowledge regarding policies/processes/procedures.
Policy Alignment	Cross Sectoral Integration		Integration of various public policies regarding urban planning; Public-Private collaboration.	Alignment of agendas for Public-Private collaboration; Lack of integration in various public policies regarding urban planning.
	Incentive Alignment		Incentivizing Public-Private collaboration.	-
Public Participation	Public Participation		Information vs Involvement; Public involvement in long-term planning; Lengthy process of public participation.	Lack of incentives for public participation; Tick box approach to public participation; Lack of consultation during implementation; Lack of incentives for public participation; Lack of community involvement in TOD planning and implementation; Complex organizational structures; Strong political influence (Social Democrats).

Transparency and Accountability	Transparency and Accountability		Access to Information; Use of raw/deserted land for TOD; Citizens' right to hold government accountable.	Weak accountability.
Local Context	Local Context		local context and community involvement; Local context to consider inclusivity of TOD.	-

Following sections 4.1 – 4.5 explain the results of interviews against each category, presented in Table 4 and Figure 5.

4.1. Clear Institutional Arrangements

Data regarding clear institutional arrangement category was collected under 3 sub-categories i.e. common goals, decentralization and institutional capacity.

4.1.1. Common Goals

According to public sector representatives, the objectives and vision of TOD are clear (A and B, Table 2), as the comprehensive strategic plan provides clear guidance for long-term agreement between state and municipality. The major principles are: Densify – grow inwards; Urban concentration at public transportation nodes; Arterial roads to be converted to city streets; Green corridors and connections. And objectives are: Urbanization – growing region and city; Comprehensive plan – for dense, mixed, green and short distance city – urban development; Considering all aspects of sustainability; Holistic approach on transport and urban planning; Improve connectivity (A, Table 2). The long-term planning is based on four-stage basic principles: (a) Re-Think; (b) Optimize; (c) Re-Build; (d) Build New. Many politicians want to start from principle 3 and skip the first two steps (B, Table 2). Public sector representatives highlighted the role of political will in guiding the TOD planning and implementation process. “What we also deal with is people not only here on a planning level, it’s also politicians, and they might have other objectives... That’s just the way it is, and they say to that, the people working in their offices, we want this, and then I come with this. You can understand, it gets sometimes tough.” (B, Table 2). The civil society organization representative also mentioned: “If you read the papers... Yes... Political will is aligned to promoting inclusive TOD”. One of the experts (D, Table 2) mentioned that civil servants at the national level are working very closely with politicians so what they do is very much aligned to the will of politicians. However, many issues are kept under the radar or not brought up.

Public sector representatives (A, B, C, Table 2) clarified that there is an administrative structure in place to implement the plans, however one of the urban planning experts mentioned, “TOD planning and implementation process is complex and involves a lot of actors. And there has to be an alignment between overall comprehensive plans and the regional transportation plans. So, there is a need for continuous coordination and dialogue, not only to make a strategic vision in overall comprehensive plan but also to follow up with the local plan to make sure that it gets implemented (D, Table 2). It was also mentioned that it is not always guaranteed that the comprehensive plan is fully implemented because there might be conflicts of interest between various public actors, at various levels. And sometimes public actors are unclear about their responsibilities, specifically when the responsibility is shared (D, Table 2).

Interviewees from public sector highlighted that TOD in its current form is beneficial to all segments of the society. “I think, in Malmö, integrated public transport and urban planning in its current form is beneficial for all segments of society.” (B, Table 2). However, the working on the issues of transport (a lot of architects and engineers), but they are not thinking about the travelers. We are a little bit critical to things because they are talking about the bus and stations but not the travelers. And they are not talking with the travelers.” (E, Table 2).

4.1.2. Decentralization

The public sector representatives highlighted that the local public sector bodies/authorities are not autonomous any more (five years ago they were autonomous in terms of schools and healthcare planning only but not in land use planning). Everything is very centralized. Local authorities were never autonomous in terms of land use planning. Sweden has a three-tiered plan or urban development. There is the strategic plan for the whole country and then there is a regional plan at a regional level and then comprehensive plan at the municipality level. But at the municipality level they don't have any land use planning. The comprehensive plan is not legally binding (A, Table 2). One of the experts mentioned that local public actors are autonomous to some extent (D, Table 2).

From the interviews it was clear that public sector representatives highlighted the value of having local level autonomy and regional thinking, but they also mentioned that too much decentralization poses a threat of local level monopoly. “Between Malmö and some of the small landowners, we've had problems getting through with these four-lane, four-track construction, but it's a very strong monopoly for the local government to do what they want to do with their surface... Which we think is a problem, because if we plan a railway line it's usually a very large effect, a very large distance, but the local government just see their station, their area.” (B, Table 2).

4.1.3. Institutional Capacity

Public sector representatives (A and B, Table 2) agree that professionals working on TOD planning are experts in the field. An urban planning expert (D, Table 2) conceded that such professionals would be experts in their field (of transportation or urban planning) but perhaps not TOD specifically as a discipline. The expert also highlighted that although policies and processes are documented, actors in the sector may sometimes lack knowledge from failing to access these resources.

4.2. Policy Alignment

Data regarding policy alignment category was collected under 2 sub-categories i.e. cross-sectoral integration and incentive alignment.

4.2.1. Cross Sectoral Integration

Among public sector representatives, it was acknowledged that significant effort has been made to integrate transportation and urban planning policies. “Policies regarding various aspects of urban planning are integrated.” (B, Table 2). Public sector representatives (A, Table 2) pointed out that actors from different departments and levels of the government are aware of the relevant policies and plans from other departments and levels, indicating an effort to align policies across different departments and scales. Another public sector representative (C,

Table 2) noted that although transportation laws were made in isolation in the past, in 2012 a law was passed to integrate transport planning with other urban planning. An expert (D, Table 2) offered a contrasting view that although there has been an effort to coordinate and integrate policies and processes, there are institutional boundaries and conflicts of responsibility that inhibit this. The expert pointed out that actions at the national level aren't integrated with regional planning processes and local land use planning processes - these processes could be more integrated, and government agencies are looking to find solutions to this, but it remains a challenge.

4.2.2. Incentive Alignment

Public sector representatives and experts agreed that there are challenges in managing public and private planning partnerships for TOD. A public sector representative noted that it can be a challenge to foster collaboration between the public and private sector where goals may differ (traffic management versus profit, for example) (A, Table 2). However, cooperation with the private sector is key, as transport is run by private companies (who bid for government contracts), and land use planning is implemented by private developers (C, Table 2). In many cases, logic can be aligned between both the public and private sector for TOD - for example, the TOD objective of densification is aligned with the commercial interests of developers, but of course this must be achieved in balance with provision of facilities such as schools and green areas (D, Table 2). In Malmö, public-private collaboration is incentivized, and incentives are aligned to the needs of the private actors. According to the urban planning expert, "Malmö has been pretty open e.g. IBM wanted regional offices and they were having negotiation with IBM to approach them and encourage them to come. So they are helping to find them suitable places for offices/land for their businesses." (D, Table 2).

4.3. Public Participation

It was very obvious from the interviews that public participation is weak, and is not actively incentivized (A, D, E, Table 2). The information regarding planning processes and implementation is disseminated amongst the public but they are not involved in these processes. As a representative from public sector mentioned, "By law, we don't have to go and ask people, but we always do a presentation, particularly if we know this is going to be a political thing, or a thing for the local, for the people itself" (A, Table 2). Political influence has a role in discouraging public participation, as the civil society organization representative mentioned, "The social democrats are very strong, and they think they have all answers... And they think they represent all the people... Maybe they are right, in some perspectives, because it had been democratic." (E, Table 2).

When it comes to implementation, public consultations are organized to disseminate information, but it is more of a tick-box approach. As one of the experts said, "So often, just a few people come to these meetings. Often males, above 50. I have been to number of those just because of my professional interest and there were 20 people. No young people. Usually there is a presentation by the planners. Perhaps not so much information and everyone can make comments." (D, Table 2).

Urban planning experts also mentioned that even the process of public display requires weeks and months and the process of public participation is lengthy and bureaucratic (D, Table 2). Interviewees also claimed that often people don't know that contracts regarding decision making on urban planning exist. Most of the contracts are publicly accessible but sometimes there is a lack of awareness that such documents exist so people will not go and ask for them.

Figure 5. Visual Representation of Categories, Sub-categories Under the Categories and Key Information Identified via Interview.

Another challenge for public participation, which was highlighted during the interviews, is that the organizational structure of the organizations involved in TOD planning and implementation is complex and it is very hard for people to understand, specifically the integration of organizations. The civil society organization representative mentioned that even the people working within the organization don't usually care about the structures (E, Table 2). This was evident from the answers received from the community members e.g. one community member highlighted, "I don't know about the exact process" (F, Table 2). Interviewees also mentioned that public participation is not incentivized (A, D, E, Table 2) and it was very evident from the fact that 15 out of 27 community members were completely unaware of public participation in TOD planning and implementation process.

4.4. Transparency and Accountability

It was mentioned by the interviewees that information on the key aspects of urban development is easily available and accessible by the public (A, B, D, E, F, Table 2). As one of the community members (Malmö resident) mentioned, "Yes, the information is available easily, like, on websites, on the buses, new train routes in the stations." (F, Table 2).

Interviewees also agreed that citizens and civil society can hold public and private institutions responsible for actions taken regarding urban development. One of the experts mentioned that national law dictates that planning processes must leave space for appeals (D, Table 2). However, the scale of accountability depends on the area as in poorer areas people either don't have awareness or they are not courageous enough to be comfortable with the accountability process. One of the experts mentioned, "In Lund, too many people file petitions, protests, appeals, etc. whereas in poorer areas, like Malmö, people don't engage as they don't know they're allowed to, or they don't know how or feel comfortable to - a socioeconomic element (D, Table 2). Highlighting Malmö area, the civil society organization representative said that consumers are very strong about renting houses, renting cars and other rights but not in transport. "I must say accountability is pretty weak." (E, Table 2). This was supported by the interviews with the community members where 15 were completely unaware and 4 of them mentioned that they can generally hold public and private actors responsible for their actions so this might be applicable to the urban development as well (F, Table 2).

4.5. Local Context

Local context, as a new category, was identified during the interviews as it was mentioned many times by the stakeholders. As in Malmö's local context, public sector representatives, experts and community members, considered TOD as good, as it was introducing change. In Malmö, change in terms of TOD, is perceived as good because of its history of economic and population decline (D, Table 2). One of the residents said, "This place (Triangeln Station) was just an empty space.". Another resident mentioned, "I think most of the development is in the new areas so, it did not push locals out but it created more space for people. There was nothing here before and in this context this development is a good thing to have." (F, Table 2).

5. Discussion

Based on the governance principles framework (Lane, 2017) interviews were conducted to sketch out the governance landscape in Malmö area – including interviews from various stakeholders – as it relates to inclusive TOD. The results of the case-study identified six broad findings concerning the governance of TOD. These findings are discussed below.

Study highlighted that, in Malmö, political will or influence has a role in shaping the objectives of urban planning and development and in discouraging public participation in urban development processes. The contextual consideration for city politics assumes greater significance if the issue under consideration is under development and growth (Lewis 1996). This informs the history of Malmö, where recovery from recession and population decline made immediate development necessity. Economic restructuring can make government institutions dependent on political forces beyond their control (Lewis 1996). As public participation is a long process, involving people takes time, and in this case the need for development was and is immediate. Political forces transformed the city into a creative city of knowledge in a relatively short time span. Cooperation between politicians and civil servants, highlighted by one of the experts, might not make the TOD inclusive but it might have helped in accelerating the process of development.

If public participation will be overly encouraged, that might slow down the process of development in Malmö. Residents of Malmö, who were interviewed, were very satisfied with urban development in Malmö because they wanted change and development in the area. Most of them mentioned that the newly developed areas of Malmö were completely deserted before these developments. The purpose of public participation is to ensure that the urban development process is inclusive and there are no conflicts arising out of that process. If that purpose is being achieved without going through the lengthy process of public participation and people are happy about the developments happening in the area, then there is no need to invest material resources and time in the process. There might be a need for public participation once Malmö develops completely. In that case, the management and operation of public participation process might need improvement as during one of the interviews, it was highlighted that a tick-box approach is taken to conduct public participation processes. Including community groups (public) early in the TOD process can serve as a conflict-mitigation measure and may “increase the likelihood that the end result is sustainable” as a long-term durable outcome (Wood & Brooks 2009). Community support is crucial to maximize TOD opportunities (Mouritz & Ainsworth 2016)

The organizational structures of the organizations involved in TOD planning and implementation are complex. This does not only reduce public participation but also complicate the processes for the actors involved in planning and implementation. Due to the complexity, these actors don't read or access all the resources on structures and processes. Thus, this has an impact on institutional capacity as considering governance arrangements fully requires an understanding of the structures and processes of organizations involved in setting and implementing land use policy and transport policy, as well as the relationships established with entities that exist outside of the government bureaucracy (Legacy et al. 2012).

A contrasting view was observed when stakeholders were asked about the integration of transport and other urban planning policies. It was not clear whether the policies are aligned or not. Literature (Stead and Meijers 2009) highlights how policy integration can translate into implementation on the ground. Stead and Meijers (2009) also stated that achievement of more integrated policies is dependent on many factors that encompass individuals in the organizations, organizations, culture of the organizations, processes, instruments, and politics.

In case of Malmö, the study revealed that local actors are not autonomous when it comes to TOD planning and implementation. TOD planning and implementation is very centralized. As Carlton and Fleissig (2014) state, TOD projects are heavily impacted by upstream decisions. Managing these decisions can be difficult for local actors. Centralization can lead to a division of responsibilities and funding mandates, making it difficult for local actors to manage cross-cutting sectoral policies such as TOD (Stead 2008). It was identified, during the interviews, that too much autonomy for local actors is also linked to local-level monopoly and that might

not be good for the implementation of inclusive TOD. In the case of transport planning in Cambridgeshire, giving autonomy to the local actors does not appear to provide a solution to promoting urban sustainability for, despite these additional powers, there has been a reluctance to put such measures in place (Bulkeley and Betsill 2005).

Contrasting views were also observed when stakeholders were asked to give their opinion regarding integration of urban planning and transport policies. Stakeholders mentioned that now they are encouraging the integration of transport and urban planning policies and they naturally can't be made in isolation. However, an urban planning expert shared an opposing view. This made it unclear that whether the urban planning and transport policies are actually aligned or not. In terms of TOD, the integration of policies highlights the nuances of synergies and trade-offs between sectors (Hersey and Spotts 2015b).

The need for open communication between local, regional, and national actors was identified during the interviews, in order to make sure that the development plans get implemented. Lack of alignment between local and regional actors can lead to the problems in delivery of TOD. A study by Legacy et al. (2012) also highlighted that a lack of sharing and communication as procedural governance can lead to issues related to implementation of land use and transport integration policies. An expert pointed out that complexity in the number of actors and scales in implementation of TOD means that there is a need for "continuous coordination and dialogue" to ensure that overall comprehensive plans are aligned with the eventual results of the implementation of local plans. The challenge of achieving this goal was highlighted. Although structures are in place to implement plans, given conflicts of interests between actors and across scales and a lack of clarity in responsibilities, the goals of TOD planning are not always reflected in implementation. Good relationships between actors and alignment of planning and goals across scales of government were highlighted as critical success factors in TOD implementation by Thomas and Bertolini (2015), and the failure of such as a key impediment in successful transport planning implementation by Joseph (2004).

Public sector representatives and experts agreed that professionals working on TOD planning are experts in their fields of transportation and urban planning. A representative of a civil society organisation concurred that professionals working on issues of transport are experts in fields such as architecture and engineering, but that this technical focus means that there is an overemphasis on technology. This focus on technology and infrastructure (e.g. buses and stations) rather than consumers (e.g. travellers) can be out-of-step with the goals of inclusive TOD.

Local context was highlighted as an important factor in the inclusive implementation of TOD by many stakeholders. Public sector representatives, experts, and community members perceived TOD in Malmö as beneficial to all due to the area's history of economic and population decline, and the focus of TOD on greenfield development in the area. In other areas, TOD has been viewed negatively from the perspective of inclusiveness due to, for example, increases in housing prices (Rayle 2015). This has been observed in TOD projects such as in San Diego, CA (Duncan 2011).

6. Conclusion

Transit-oriented development (TOD), recognized as a sustainable urban development solution, has been successful in creating mixed-use, walkable, dense communities with access to high quality transport. But TOD might not equate to better livability and quality of life, as it can lead to displacement and exclusion of low-income households and mixed-income neighborhoods. Developing TOD in an inclusive manner can mitigate these negative outcomes. Inclusive TOD provides an opportunity for cities and communities to develop in a more

sustainable way. The implementation of inclusive TOD requires attention not only to finance and design but also to good governance including: institutional agreements, policy alignment, public participation, and transparency and accountability.

The governance principles framework was used to explore inclusivity of TOD in Malmö. A combination of deductive and inductive approaches to qualitative study was used to do an in-depth analysis of inclusivity of TOD in Malmö. 37 stakeholders, including public sector representatives, experts, a civil society organization representative, and community members, were interviewed.

Local context was highlighted as an important factor in the inclusive implementation of TOD by many stakeholders. Local context should be considered, and added to the governance framework, during the exploration of inclusivity of TOD in any area. The results and discussions of this study may contribute to stimulate timely discussion and critical feedback and to influence ongoing debate on emerging issues of inclusivity of TOD. This study is limited to only one area i.e. Malmö. Exploring the inclusivity of TOD, qualitatively, based on governance principles framework in other areas will help in further validating the results of this study, identifying the limitation of the current study, and exploring new aspects of governance.

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Paper Title: Impacts of land value capture for new public transit in Sweden: a case study of the Lund tram

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Abstract

The development of sustainable public transit systems undoubtedly poses a key challenge to urban decision-makers worldwide. In the wake of austere budgetary policy, land value financing is increasingly seen as a promising complementary financing source. In Sweden, development-based land value capture (LVC) is now applied to leverage revenue for new public transit infrastructure. Recent research has revealed both potentials and risks with LVC. The coupling of transit planning with urban development potentially improves the conditions for transit-oriented urbanization. Since LVC provides incentives to increase land values through densification, the model may contribute to enhance the efficiency of public transit systems. However, there is a risk for rent increase which would make access to public transit increasingly dependent on income. Moreover, LVC commonly requires flexible planning and negotiations with multiple stakeholders, at the expense of increasing administrative burden and transaction costs. The processes risk becoming less transparent and more influenced by lobbyists. Furthermore, as revenues are tied to the notoriously swinging property market, they are more difficult to foresee.

Using the case of a partly LVC-financed new tram line in Lund in south Sweden, we analyse 1) how the land value capture tools are applied, 2) how various stakeholders are involved, and 3) how the financial model could influence the shaping of new development from which revenue is leveraged. Preliminary results reveal that scope and techniques of leverage varies significantly between privately and publicly owned land. Plans are made flexible as to enable negotiations over development rights, which are agreed upon through contracts with varying degrees of transparency. While the model appear to have influenced densities only to a limited degree, negotiations and plans indicate new demands, e.g. in type of buildings, functionalities and aesthetic quality of public spaces. The paper also addresses the question of how the financial model alters the conditions for future transit planning, and highlights the question of whom should benefit from investments in public infrastructure.

The Option Value of Transport Services

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Abstract

Are there option values of transport services? Option value is the value risk adverse individuals attach to goods or services that they *might* use. In the context of transport this translates into a willingness to pay to keep transport services available that that might never be used. A few studies have tried to answer this question through various stated preference methods, but the question is so far answered. In this paper, we set out to present the empirical work that has been done with regard to transport services, and then discuss how option value can be linked to accessibility more generally. By combining a general measure of accessibility with housing sales in the Scania-region we then solicit the value property owners in Scania attach to having several transport modes available to them, even if the absolute level of accessibility remains the same.

Keywords

Option Value; Accessibility; Real Estate Value; Public Transport.

Classification codes

R40, R41, R31, H43

Actor-institution Dynamics and Challenges in Shrinking Transit Megacity Tokyo: A case study of transit suburbs in the Tsukuba Express region

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Abstract

The Tokyo Metropolitan Area (Tokyo) is the first megacity in the human history that is about to start losing its population. Suburban areas of Tokyo have already started losing their population, and its speed gradually accelerates. Together with the population decrease, it is projected that Tokyo's suburban areas in particular will experience a rapid increase of old population. Under such a rapid and massive demographic change, the urban dynamism and spatial structure of Tokyo inevitably shrinks. We consider that this shrinkage – as a major exogenous shock – as a change of the ground rule for urban-transport planning within the megacity. Since decades ago, institutions for urban-transport planning in Tokyo are based on the firm belief across planning actors that Tokyo continues expanding in terms of its population and geographical size. However, the ground rule – the expanding Tokyo – is now gradually changing to the *shrinking* Tokyo. What would this exogenous change of ground rule affect the current and future urban-transport planning in Tokyo? A few number of works approaching to this question from the perspective of gradual institutional change by considering features unique to Tokyo such as scale of the shrinkage, diversity of planning actors, and urban dependency on transit. Thus, research objective of this study is to understand how institutions and their actors for urban-transport planning are influenced by and gradually responding to the shrinkage of Tokyo by taking the uniqueness of Tokyo into consideration. Especially, we will pay careful attention to how the gradually changing ground rule – from expansion to shrinkage – causes latent friction between the current mode of institutions and the changing reality of urban-transport integration for the shrinkage. As a case, this study uses the Tsukuba Express line and 11 administrative (cities and wards) areas adjacent to the line. The study conducted 11 different semi-structured interviews with 25 urban-transport planners and private experts to capture and analyze the institution-actor dynamics that would potentially induce gradual changes of the institutional framework for urban-transport planning towards the urban shrinkage. The collected interview materials were transcribed and analyzed by a mixed institutional theory as well as text-mining methods. [The study is ongoing thus findings and conclusions are pending here]

Keywords: Shrinking cities; Tokyo; megacity; TOD; institutions; actor-institution dynamics; transit suburb; megacity; depopulation; aging population.

1. Introduction

The Tokyo Metropolitan Area (hereafter, simply Tokyo) is the first megacity ^[i] in the human history that is about to start losing its population (United Nations, 2015). The population of Tokyo Metropolis – the urban core of Tokyo – is projected to reach its peak (13.9 million) in 2025, then gradually decrease to 11.7 million by 2060 (Tokyo Metropolitan Government, 2016). Overall, distant suburban areas (30-50 km distance from the center of Tokyo Metropolis) of Tokyo have already started losing their population since 2010, and suburban areas close (20-30 km distance) to Tokyo Metropolis will start losing their populations around 2025 (MLIT, 2018; Nakano, 2018). In addition to the depopulation, Tokyo is about to confront rapid aging population (MLIT, 2018). It is projected that Tokyo's suburban areas in particular have started experiencing a rapid increase of old population (Naganuma, Arai, & Esaki, 2006; Satoh, 2019). So, Tokyo's suburbs are the frontline of losing population while aging. Under such a rapid and massive demographic change, the urban dynamism and spatial structure of Tokyo inevitably *shrinks* (Aiba, 2015; Architectural Institute of Japan, 2017; Ohno & MPF (Metropolitan Forum), 2016). We consider that this shrinkage is a change of the *ground rule* for any types of socio-political game played within Tokyo: commercial activities, social welfare, education, healthcare, taxation, and etc. Urban-transport planning is not out of the list.

During the period of massive urbanization towards suburban areas during 1960 and 1990 (Nakano, 2018, p. 28), laws, regulations, rules, or *institutions* – “humanly devised constraints that shape human interaction” (North, 1990, p. 3) – for urban-transport planning in Tokyo were based on, implicitly or explicitly, the firm belief across planning actors that Tokyo *continues expanding* in terms of its population and geographical size (Ikuta & Sutoh, 2012). In the urban planning arena, the Area Classification method (*Senbiki Seido*) introduced by the City Planning Act in 1968 epitomizes such a mindset. This institutional method allows city planners to designate Urbanization Control Areas (*Shigaika Chousei Kuiki*) where new urban development is regulated to avoid unchecked sprawl. Asano (2017, p. 15) thus explains that this institution is “a dynamic system based clearly on an increasing population”. The transport planning arena was in a same – or probably worse – situation. As Yoshida (2014) illustrates, the transport planning at that time was all about how to respond to an immensely increasing demand for commuting ridership from rapidly expanding suburbs to central business districts in Tokyo. Due to the lack of a comprehensive intuitional framework for the transport planning (Yoshinaka & Enomoto, 2017), transport planners relied heavily on the urban-planning institutional tools, which was dominated by the expanding mindset. The nexus of institutions and actors, including both designers and enforcers, that were based on the paradigm of “expanding city” formed the current palm-and-fingers spatial structure of Tokyo – the largest and most consistent transit-dependent megacity in the world (Chorus & Bertolini, 2016).

However, the ground rule – the expanding Tokyo – is now gradually changing to the *shrinking* Tokyo. We can observe intuitional struggles against the shrinkage. Deregulation of the Area Classification method in 2000 ^[ii] was a starting point of intuitional changes of the urban-transport planning arena induced by the slowing speed of the urban expansion (Asano, 2017). The introduction of the Urban Facility Location Optimization Planⁱⁱⁱ (*Ricchi Tekiseika Keikaku*) in 2014 ^[iv], which intends to promote a public-transport-based compact (compact-network) city (Hatakeyama, 2017; Yoshinaka & Enomoto, 2017), was a clear milestone of the intuitional changes towards potential urban-transport problems from the shrinkage. What would the shrinkage – the change of the ground rule, and actor-institution responses to it, affect the current and future urban-transport planning in Tokyo?

Japanese researchers approach to this question in different ways. Ohno (2016) proposes the “Fiber City” concept aiming at managing the shrinkage by redirecting flows of spatial activities through adjustment of the urban fabric of Tokyo. Aiba (2015) criticizes the current urban-planning intuitions based on the conventional center-zoning mindset, and instead proposes a holistic-layer mindset of the urban planning (pp.155-166). Matsutani (2015) approaches to the question from an economic-demographic standpoint, and cautions that Tokyo will fail to maintain its urban-transport infrastructure due to the shrinkage. Ikuta and Sutoh (2012) approaches to the shrinking cities in general from through a comprehensive study on the institutional framework for the urban planning. They emphasize the importance of updating conventional urban-planning institutions based on the expansion mindset to those considering the shrinking logics (p.1); and coordination between different actors inducing the local residents (pp.1, 26). A compilation of papers edited by Architectural Institute of Japan (2017) is, perhaps, the most comprehensive study on the shrinkage from the intuitional perspective. The complication illuminates important actor-institutional issues: spatial structures once

generated by the expanding mindset intuitions now create institutional infeasibility to promote urban compactification; the importance of reframing the actor-institution dynamics (*e.g.*, including local residents to the planning process); wisely optimizing a combination of the existing institutions to different local contexts; and redefining the lifestyle (Architectural Institute of Japan, 2017). In addition, one of the paper in the complication points out that there is a persistent lack of an integrated perspective of public transport and land use in the planning arena in Japan (Yoshinaka & Enomoto, 2017).

When it comes to the international urban-transport literature, there is a solid body of literature on the shrinking cities/towns (*e.g.*, XXX; XXX; XXX to be selected later on). The shrinkage of cities or towns are common, long-standing, worldwide phenomenon (Galster, 2019; Großmann, Bontje, Haase, & Mykhnenko, 2013). Großman et al (2013) categorize driving force of the shrinkage into (mainly exogenous) factors: (i) political transformation, (ii) industrial transformation, (iii) economic fluctuation, (iv) demographic change, (v) massive immigration to major cities, (vi) sprawling, (vii) war, (viii) natural disasters, and (ix) oversupply of residential properties. In addition to exogenous driving factors, Haase et al (2016) emphasizes the importance of analyzing the shrinkage as an urban process interacting with the actor-institution dynamics at different decision making levels and arenas (p.97). Like Ikuta and Sutoh (2012), Galster (2019) points out that traditional institutions for the urban planning, such as zoning, structural code, and building permits, have a little capability to control the shrinking cities/towns under declining economic incentives (pp.363-364). Overall, the international literature suggests that the shrinkage is a complex process interacting not only with exogenous but also with endogenous factors underpinned by the actor-institution dynamics, and it challenges the conventional institutions for the urban-transport planning. However, we need to be careful to apply findings from these researches to the case of Tokyo. This is due to huge contextual differences between the cases of ordinary-scaled towns/cities and that of Tokyo in terms of demographic dynamism, socio-economic structure, geographical scale, and complexity of institutions and organizations for the urban-transport planning. As North (1990) points out, the context of a case matters in the actor-institution analysis. So, in this research, we will pay attention to three contextual features that are unique to the shrinking megacity Tokyo:

- *Scale of the shrinkage*: The shrinkage of Tokyo is massive in terms both of demographic and geographic aspects. In 35 years, approximately 2.2 million population will disappear only within Tokyo metropolis. This shrinking trend is projected to happen, despite heterogeneously, within the entire Tokyo, which covers approximately 9,000 km² land area. Such a huge scale phenomenon could create a number of actor-institutional issues across different levels and different social domains.
- *Diversity of planning actors*: Transit lines in Tokyo cover large geographical areas and often go through different administrative areas. This complicates the actor-institutional coordination across different urban-transport planning actors.
- *Strong dependency of urban spatial structure on transit*: Spatial pattern of populated areas in Tokyo underpinned clearly by the spatial structure of transit lines. Historically speaking, urban development of Tokyo coevolved with the spatial extension of transit lines from Tokyo Metropolis to its suburban areas (Yajima & Ieda, 2015). Accordingly, the proximity to transit services almost always play a pivotal role in people's decision-making processes in different aspects: commuting habits, residential selection, and appraising real estate values. Thus, a perspective to incorporate both urban and transport, commuter trains in particular, factors (urban-transport perspective) is necessary for the study of the shrinking Tokyo.

Research objective of this study is to understand how the actor-institution dynamics for urban-transport planning in Tokyo endogenously responses to the shrinkage, which is a long-term but whole-scale exogenous change of the socio-economic foundation of urban-transport planning. Especially, we will pay careful attention to how the changing ground rule – from expansion to shrinkage – causes latent friction between the current mode of actor-institution dynamics and the changing reality of urban-transport integration under the ongoing shrinkage. In order to achieve this objective, we set three research questions:

1. What is the current recognition of the shrinkage of Tokyo across different actors working for, or relevant to, the urban and transport planning?
2. How does the current institutional setting shape the actor coordination dynamics in the urban and transport planning arenas regarding the shrinkage?
3. How does the actor-institution dynamics currently response to the gradually-progressing shrinkage, and what gaps, challenges, and/or opportunities for the future are identified?

The structure of this paper is as follows: firstly, we review a set of actor-institutional theories in order to set a theoretical framework for our analysis on the shrinking Tokyo. Secondly, we elaborate our methods, case, and data while relating them to our theoretical framework. Then, we display results from the processed empirical materials, and move to our analysis and discussions on the results. Finally, we conclude the whole discussion while stating limitations of the research and further research opportunities.

2. Theoretical Framework of Actor-institution Analysis:

2.1. Theory for the gradual endogenous change of the actor-institutional dynamics

Despite variants of their definition, institutions could be simply defined as formal and informal *rules* to regulate behavior of actors within a certain political-economic arena. By definition, institutions always interact with different actors such as rule designers, rule enforcers, and even actors outside of a particular institutional framework (third parties). This ontological view – institutions *as a regime* – coined by Streeck and Thelen (2005, p13), portrays a picture of institutions that is not a static social entity but dynamic social interactions between different types of actors and rules. In this research, we call these complex interactions as *actor-institution dynamics*. Although the idea of enduring property is “virtually built into the very definition of an institution” (Mahoney & Thelen, 2009, p. 4), the continuity and stability of institutions do *not* necessarily mean that they last forever. The dynamic property of the actor-institution dynamics, on the contrary, could endogenously induce changes over time. Despite the capability to explain abrupt-exogenous institutional changes (induced by such as a war or an evolution), conventional three camps of institutionalism (Hall & Taylor, 1996) are inadequate in theorizing the gradual-endogenous institutional changes (Greif & Laitin, 2004; Hayakawa, 2011; Mahoney & Thelen, 2009; Streeck & Thelen, 2005). Mahoney and Thelen (2009), accordingly, argue that these three variants of institutionalism are hard to offer a general model of institutional changes.

Recently, various scholars elaborate theoretical model of gradual-endogenous changes of institutions. Greif and Latin (2004), for instance, develops a theoretical model to analyze gradual-endogenous change of institutions *as an equilibrium*. Introducing the concepts of quasi-parameters and self-reinforcement, their model explains how the accumulation of changes *exogenous to the institution in short run* would endogenously alter the preference of the actors within the institution, thus induce an institutional change, *in long run* (Greif & Laitin, 2004). Based on different empirical cases, Streeck and Thelen (2005) identify 5 types of gradual-endogenous institutional change: *displacement* (complete, albeit slowly, replacement of the old rules by a new one); *layering* (gradually attaching new elements to the old rules); *drift* (gradual demise of the institution through the endogenous neglect of its maintenance necessitated by the exogenous change); *conversion* (gradual renovation of the old institution for a new purpose); and *exhaustion* (normal enforcement of the institution gradually undermines its external preconditions) (p.31). This model provides a comprehensive typology of the gradual institutional change but inadequate in explicitly modeling the causal relations between actors and the institutional change. In other words, the model lacks clear theorization of the actor-institution dynamics.

Mahoney and Thelen (2009) further elaborates Streeck and Thelen’s framework to overcome this issue. Considering the power relation between institutional designers and enforcers, they explain how a power as well as coordination dynamics would induce a particular mode of the gradual-endogenous institutional change. We think this model is promising to analyze the shrinkage. The shrinkage is a long-term (spanning at least 30-40 years) exogenous shock, and this projection is widely acknowledged by the general public of Japan. Under such a circumstance, it is safe to assume that actors would *endogenously* respond to, albeit slowly, the shrinkage through redefining their payoff,

motivation, preferences, and power relationship. Because of its clear theorization of causal mechanisms between actors and the intuitional change, we think that Mahoney and Thelen's model (hereafter the MT model) is suitable to analyze the actor-institution dynamics of the planning arena in the shrinking megacity Tokyo. In the subsection below, we shall overview the MT model and fit it to the context of urban-transport planning in the shrinking megacity Tokyo.

2.2. An overview of the MT model and fitting to the analytical context

In the MT model, there are two important actor groups: institutional designers and institutional enforcers (or actors). Each group has a power property (Mahoney & Thelen, 2009, p. 18). The power of the designers is described as strong or weak (S/W) *veto* power – to what extent the designers block enforcers' attempt to change the institution (p.18-19). The power of the enforcers, on the other hand, is described as high or low (H/L) level of *discretion* in interpreting as well as enforcing the institution (p.18-19). In our case, the national government is considered as the designer, and the prefectural as well as municipal governments, especially their urban-transport planning units, are considered as the enforcer. Considering the power relation between the two variables, the MT model renders three major causal mechanisms of the gradual-endogenous change (p.15).

Firstly, combination of the two variables (S/W – H/L) directly “affect the likelihood” of which type of the gradual-endogenous change would emerge (Mahoney & Thelen, 2009, p. 18). For example, S-L (Strong veto and Low discretion) could be most associated with *layering* (if the designers have a strong power to preserve the old rules, and the enforcers have a weak discretion in how to interpret and enforce them, then only small additions to the old ones could happen). W-H (Weak veto and High discretion), on the other hand, could be associated with *conversion* (if the designers have a weak power/intention to preserve the old rules, and the enforcers have a strong discretion/authority in how to interpret and enforce them, then the enforcers can innovatively renovate the existing rules towards “more favorable functions and effects” [v]) (p.18). Our understanding about this causal link is that the power landscape *alone* could be a driver of the intuitional change *in long run* even if there is no active change agent. In other words, an intuitional change would be generated endogenously by long-run collective actions of the enforcers without a pivotal political group actively seeking for such a change. This causal mechanism is described as “A” in Fig.1 below.

Secondly, the combination of the two variables could influence the likelihood of which type of *dominant change-agent* will emerge (described as “B” in Fig.1). Mahoney and Thelen identify four types of change agent based on the combination of the veto power and the level of discretion: *subordinates* (S-L, they want to change/improve the rules, but just subordinate what the designers made due to a weak discretion power); *free riders* (S-H, they create beneficial opportunities by arbitrarily interpreting, albeit ostensibly abiding, the *latter* of rules, but their act may contradict the *spirit* of the rules); *challengers* (W-L, they actively and visibly go against the entire framework of existing rules to undermine the strong veto power of the designer), and *opportunists* (W-H, they arbitrarily interpret and enforce the rules to maximize their own benefits) (p.23-28) [vi]. We think that a dominant change agent is not necessarily required to induce a gradual-endogenous change (as we have explained above). However, once they formed, a change agent will play an active and pivotal role to accelerate the intuitional change as the third causal link below suggests. Table.1 summarizes attributes of the four types of the change agent.

Thirdly, based on empirical case studies done by their coworkers, Mahoney and Thelen render a potential casual linkage between the type of dominant change agent and the mode of institutional change (“C” in Fig.1). We think that an important difference from the link “A” (power landscape -> change mode) is that four modes of the institutional change in the link “C” (agent type -> change mode) are likely considered as the mode of *change strategy* taken by the dominant change agent. For example, the *subordinates* likely facilitate an intuitional change by a strategy close to the *layering* (i.e., they try to add some additions, amendments, or revision to the existing institutional framework to realize what they want). This strategic maneuvering more increases the likelihood of emerging the layering mode of intuitional change compared to the situation *without* the change agent. Similarly, the *opportunists* likely facilitate an institutional change by a strategy having the affinity with the *conversion* (i.e., they

work around the existing institutions with ingenuity to maximize favorable functions and effects). Likewise, the *free riders* and the *challengers* are likely associated with the *drift* and the *displacement* respectively.

Additionally, facilitation of the institutional change could be reinforced when a dominant change actor coordinates with other actors (“D” in Fig.1). The TM model assumes that each type of change agent has potential affinity to institutional advocates and opponents in the coordination dynamics. For example, despite their preference to change the existing rules, the *subordinates* tend not to *openly* coordinate with the opponents (Mahoney & Thelen, 2009, p. 31). Mahoney and Thelen explain that the subordinates prefer to “work on their own, behind the scenes or in the shadows” otherwise the designers with a strong veto power will crush their maneuvering (p.31). Table.1 displays theoretically suggested affinity of the change agents to the advocates and the opponents.

Finally, in order to ensure the applicability of the MT model to our case, we succinctly confirm the fitting of the model to the historical transformation of the institutions of urban planning in Japan, which has a much longer history than that of public-transport planning (Yoshinaka & Enomoto, 2017). The national government of Japan used to have a very strong veto power against potential changes of the urban planning institutions. The prefectural and municipal governments behaved, in effect, just *subordinates* of the national government, thus had almost no discretion power (Ichishima, 2016). As the MT model suggests, the mode of the institutional change was well described by the *layering*. Since the first modern institution for urban planning introduced in 1888, the institutional framework for the urban planning in Japan kept its highly-centralized character (Ishida, 2001) and preference to amendments, additions, or revisions to the existing framework (Sakawa, 2017). In 1970s, the rapid economic development and “massive” urbanization exacerbated pollution and urban problems elsewhere in Japan, and these problems were gradually politicized. Echoing such a situation, a political agenda to promote the empowerment of the local governance as a whole emerged from some municipal governments (Ishida, 2001). After the oil crisis in 1973, the Japanese economic miracle ended. This triggered the exacerbation of national finances, and the national government (designer) was forced to weaken its *veto power* to slim-down the national expenditures. At the same time, the 1st Symposium “Towards the Age of the Local Governance” was held in 1978 and several prefectural governors and mayors declared the importance of the local governance. This event paved the way for the nationwide discussions about the local empowerment in 1990s. We here observe that around 1980s the local governments (enforcers) actively moved toward the *Challengers* leveraging the weakening veto power of the national government. Hosokawa (1991) called this as “the insurrection of local governments”. In 2000s, the national government decided to decentralize its authorities of various domains, including urban-transport planning (Ishida, 2001), to the local governments (we shall return to this issue in Section 5). As a result, the prefectural and municipal governments gained a higher level of discretion in urban planning arena despite remaining some influence of the national government (Ishida, 2001; Kurokawa, 2000). This enables them to behave like the *opportunists*. They have been reusing the exiting institutions to maximize the benefits from urban developments, and even capable to loosen relevant regulations by issuing city ordinances. The municipal government in particular extended the authority to create *and* enforce the Urban Planning Master Plan (*Toshi Keikaku Master Plan*) where the urban planners can translate the rules into real-world urban configuration to maximize the benefits of “our city” (Kurokawa, 2000). This mode of the institutional change clearly traces the feature of the *conversion*. As we have succinctly explored, the MT model seems to account well for the historical institutional transformation of the urban planning in Japan (white arrows in Fig.1 shows this transition). Rather than a *theory fitting* to the historical facts, in this research we shall use the MT model to capture and analyze “in-progress” actor-institutional dynamic in the urban planning *and* transport planning arenas in the shrinking transit megacity Tokyo. More precisely, the MT model shall be used in two phases: generating interview questions (theory-driven questions) and analyzing the empirical materials.

Fig.1 The left panel shows a theoretical model of causal properties in the actor-institution dynamics adapted from (Mahoney & Thelen, 2009, p. 15) and altered by the authors. The right panel displays a theoretical framework of the gradual-endogenous institutional change adapted from (Mahoney & Thelen, 2009, p. 28) and modified by the authors. The model and the framework are interlinked with each other. White arrows in the right panel shows the institutional transition of the urban planning arena that is succinctly fitted in Section 2.2.

Table.1: The attributes of the change agents and their coordination dynamics
Adapted from (Mahoney & Thelen, 2009, pp. 23, 30).

	Seeking to preserve the existing institutions?	Following the existing institutions?	Coordinate with the institutional advocates?	Coordinate with the institutional opponents?
Challengers	X	X	X	Yes
Free Riders	Yes	X	Yes	X
Subordinates	X	Yes	X	X
Opportunists	Yes / No	Yes / No	Yes / No	Yes / No

3. Method, Case, and Data

3.1. Method

For the actor-institution analysis, context always matters (Hrelja, Monios, Rye, Isaksson, & Scholten, 2017). Generation and modification of an institutional system, interpretation of it, organizational practices based on the system, power relations between actors that creates actor-institution dynamism, and etc., are always embedded in various contextual landscapes. Considering the contextual features that are quite unique to the shrinkage of Tokyo: scale of the shrinkage, diversity of planning actors, and strong dependency of urban spatial structure on transit systems, the importance of capturing the contextual landscapes is further accentuated. In addition, our research is particularly interested in how actors frame the contextual landscapes and solve (or react to) various types of planning issues within the complexity of actor-institutional settings. Thus, we choose the case study method for our analysis because of its capability to analyze a phenomenon in context (Hrelja et al., 2017) as well as how people frame and solve problems (Barzelay, 1993).

Despite its capability to deal with the contextual contingency and complexity, there are several disadvantages of the case study method, especially when the number of selected cases is one (the single case study method). Major ones are the lack of replicability, generalizability, and rigor (in objectivity) (Barzelay, 1993; Bryman, 2012). In order to improve the issue of lacking replicability, we strived to be transparent as much as possible about the information relevant to how we selected our case, what types of data we gathered from whom, and how we processed it (e.g., see Section 3.3). In qualitative methods as a whole, the findings from them are “to generalize to theory rather than to populations” (Bryman, 2012, p. 406). What decisive in this *analytical generalization* (Yin, 2018) or

theoretical generalization (Mitchell, 1983) is the quality of the theoretical inferences based on the qualitative empirical materials (Bryman, 2012). We consider that systematically following the theoretical framework we have discussed in Section.2 can enhance the quality of our theoretical inferences, thus the generalizability of our (theoretical) findings. Section 3.3.1 further elaborates this point. Finally, to enhance the objectivity of our research, we strived to avoid an arbitrary selection of (especially planning) actors as much as possible otherwise there was a clear reason to do so (see Table.3 in Section 3.3).

3.2. Case selection: transit suburbs around the Tsukuba Express line

This study focuses on the Tsukuba Express line (the TX line) and 7 municipalities (cities) and 4 sub-municipalities (wards) adjacent to the TX line (Fig.X). Hereafter, we call the gathering of 11 TX-adjacent (sub-)municipal areas as the *TX-transit region* for the brevity. The total length of the TX line is about 50 km, and there are 20 stations. An approximate geographical scale of the TX-transit region is about 70-km width. Chiyoda, Taito, Arakawa, and Adachi wards are situated within Tokyo metropolis (the urban core of Tokyo), and contain several CBDs. On the other hand, Yashio, Sango, Nagareyama, Kashiwa, Moriya, and Tsukuba Mirai cities are considered as suburbs. The City of Tsukuba was developed as one of the satellite cities (*Gyohmu Kaku Toshi*) of Tokyo, thus not considered as a suburb in the National Capital Region Development Plan.

There are three reasons of selecting the TX-transit region as a case:

- (1) *The gravity of projected population decline and aging within the TX-transit region:* The depopulation and aging population in Tokyo is spatially heterogeneous. The population of the urban core and major transit suburbs will slightly increase even until 20XX. Aging population, on the other hand, will appear almost all transit suburbs. A unique feature of the TX-transit region is that its suburban areas will face both depopulation and aging at the same time in coming 30-40 years.
- (2) *Multi-actor involvement in the development of the TX-transit region:* A major form of transit-region development in Tokyo is that private railway companies (*Shi-tetsu*: e.g., Tokyu Corporation) develop *both* a transit line and real estate development alongside the line. Compared to this form, the TX-transit region has been developed by a number of actors who play different roles in the development process. This type of transit development is similar to that in Europe and the US. So, we expect that our findings would be, more or less, comparable to European and US contexts.
- (3) The TX region contains different administrative areas. This complex actor-institution setting makes the TX-transit region an intriguing case to understand potential challenges of the actor coordination for urban-transport planning and practice for the age of shrinking megacity Tokyo.

Figure 2: TX Line Reference Map. The map shows the entire TX line and its stations as well as cities and wards where the TX line goes through. An approximate width of the entire TX line region is 70 km.

3.3. Data

We conducted 11 semi-structured interviews with different actors. All semi-structured interviews were conducted in Japanese, and recorded by permission of the interviewees. The interviews were conducted during two different time frames in 2019: [Frame-1] January 9th – 19th and [Frame-2] March 4th – 13th. Table. X shows the actors we interviewed. Our preliminary fieldwork during Frame-1 revealed that the TX line is not outstandingly important for urban-transport planning at ward level. In interview [ADC], an urban planner at Adachi ward where three different TX stations are situated commented that “we do not think that the TX line is specifically important for urban-transport planning within the ward because we already have very much dense public transport networks within the ward. So, the TX line and its stations are just equally important as other modes of public transport and stations on other transit lines.” Basically, within the Tokyo Metropolis, the density of different modes of public transport is very high, accordingly it is difficult to separate the importance (or the influence) of a particular public transport system from others. This situation is quite same for other wards near by the TX line. Thus, we taken away the Tokyo Metropolis from the scope of our analysis this time. In addition, we did not make an appointment with the City of Misato. A neighboring area around the Yashio Station experiences more intensive urban development than an area around Misato-Chuoh Station thus we prioritized the the City of Yashio within Saitama Prefecture. However, we were not able to have an interview with people at the City of Yashio due to the city council work that made urban-transport planners very busy. Overall, we consider that our interview materials are sufficient enough to capture an overview of urban-transport planning within the TX-transit region despite a few missing interviews. All recorded materials were transcribed into text files for further in-depth actor-institutional analysis. We also gathered different types of written documents from the interviewers. A majority of them is so-called Urban Planning Master Plan (*Toshi-Keikaku* Master Plan) and brochures to introduce the TX line as well as planning and development of the TX-region. We used these documents to complement the interview materials.

Table. 2: Summary of prefectures and (sub-)municipalities in the TX region, and conducted interviews

Area	Name of Actor	Population	Label	Type	NumPat [g]	Time Frame
Ibaraki Pref	Ibaraki	2,882,943*	[IBRK]	Pref [d]	2	2
	Tsukuba	237,039	[TKB]	City [e]	3	2
	Tsukuba Mirai	50,675	[TKBMR]	City	2	2
	Moriya	66,876	[MRY]	City	3	2
Chiba Pref	Chiba	6,268,585*	[CB]	Pref	3	2
	Kashiwa	424,322	[KSW]	City	1	1
	Nagareyama	189,373	[NGRYM]	City	3	2
Saitama Pref	Saitama	7,322,645*	[SITM]	Pref	2	2
	Misato ^[a]	140,471	-	City	-	n.a.
	Yashio ^[b]	91,285	-	City	-	n.a.
Inter-Prefectural	Tx Entrepreneur Partners (TEP)	-	[TEP]	Private Sector [f]	1	2
	Metropolitan Intercity Railway Company (MIR)	-	[MIR]	Third Sector	1	2
Tokyo Metropolis	Adachi ^[c]	680,269	[ADC]	Ward	4	1
	Arakawa	217,265	-	Ward	-	n.a.
	Taito	205,659	-	Ward	-	n.a.
	Chiyoda	63,165	-	Ward	-	n.a.

[a] Not appointed, [b] the appointment was denied due to the city council work, [c] original purpose of this interview was for different research. However, questions regarding the TX line revealed that the line is not particularly important for the ward government because of a high density of public transit lines within the ward, [d] Municipal government level (city government level), [e] prefectural government level, [f] General Incorporated Association, [g] number of the interviewees. * Total population of municipalities within each prefecture.

3.3.1 Theoretically-driven interview questions as a guiding tool of theoretical inferences

In order to ensure the quality of our theoretical inferences, we applied the theoretical framework we have discussed in Section 2 into the analysis of our empirical materials. More specifically, some of guiding questions for the interviews are theory-driven. Table.3 below summarizes our guiding questions and relation to the TM model as well as the research questions. Questions grouped as Purpose [3] and [4] are derived from the MT model. Each question is also associated with the research questions. We will input answers from question group [3] and [4] as a main input to the MT model, and use those from [1] and [2] as complementary inputs to give different angles to our analysis. By doing so, we expect to portray an overview picture of the actor-institution dynamics of the urban-transport planning for the shanking Tokyo, and answer to the research questions 2 and 3 in particular.

Table.3: Summary of Interview Questions, Relation to the MT Model, and to the Research Questions

Purpose	Questions	RQ ^[h]	Actor Type			
			City	Pref	MIR	TEP
[1] Overlooking a strategic positioning of the TX region	Strategic positioning of the TX line and the TX area?	n.a.	✓	✓	✓	
	Strategic positioning of the TX line and the TX area from the private sector perspective?	n.a.				✓
[2] Comprehending the recognition of and responses to the shrinkage	The recognition of the shrinkage?	1	✓	✓	✓	✓
	Any planning responses to the future shrinkage around the TX-station area?	1	✓	✓		
	Any <i>intra</i> -city coordination efforts b/w the TX-station area(s) and other areas in the past?	2	✓			
	Any <i>intra</i> -city coordination efforts b/w the TX-station area(s) and other areas for the future shrinkage?	2 & 3	✓			
	What's required for the urban-transport planning in the TX region for the future shrinkage?	3			✓	✓
[3] Measuring "coordination dynamic" and	Any <i>inter</i> -city coordination efforts in relation to the TX-region in the past?	2	✓	✓		
	Any <i>inter</i> -city coordination efforts in relation to the TX-region for the future shrinkage?	2 & 3	✓	✓		

responses to the shrinkage	Any <i>inter</i> -prefectural coordination efforts in relation to the TX-region in the past?	2	✓			
	Any <i>inter</i> -prefectural coordination efforts in relation to the TX-region for the future shrinkage?	2 & 3	✓			
	Inter-prefectural collaboration to promote an integrated urban-transport planning in general?	2	✓			
	Any coordination with the municipal and/or prefectural govts in terms of the urban-transport planning in the TX region?	2 & 3		✓	✓	
[4] Measuring “Powers” and “Type of Dominant Change-Agent”	Weakness/strength of the current institutional / organizational settings to cope with the future shrinkage?	3	✓	✓	✓	✓
	Any interest to implement action plans for the institutional/organizational weakness/strength?	3	✓	✓	✓	✓
	Horizontal collaboration to promote an integrated urban-transport planning in general? (collaboration with different units within the municipal gov office?)	2	✓	✓		
	Vertical collaboration to promote an integrated urban-transport planning in general? (collaboration with the prefectural gov and/or the national gov?)	2	✓			

[f] RQ: Relevant research questions (1, 2, and 3).

Please kindly note that our analysis on the empirical materials is still ongoing. And sections below are not yet completed. Instead, we put some preliminary brain-storming notes so that the readers can imagine what we're doing. Thank you for your read and understanding!

4. Result

4.1. Strategic positioning of the TX-line and its stations in an Urban Planning Master Plan

This section corresponds to the Purpose [1] in Table.3. Overall, we confirmed that all municipal governments strategically position the TX line and its station area(s) as an urban core of each municipality by their Urban Planning Master Plan (UPMP). Municipal urban-transport planners emphasized a clear planning objective to promote a type of transit oriented development (TOD) around the TX-station areas. They basically aim at creating urban core(s) of a multi-nodal network compact city through densifying urban functionalities around the station areas and improving connection of public transport (mainly bus and taxi) to the areas. An urban planner at [TKB] municipality explained that they are “trying to make the TX-station area as “core” of the polycentric urbanization”. Other planner mentioned that the municipality “designated the TX-station area as a new urban core in different urban functionalities by the Urban Planning Master Plan” [NGRYM]. [TKBM] municipality also emphasizes a planning target to promote “the high density of urban functions within the TX-station areas”.

The all municipal planners also confirmed that the impact of the TX line on the mobility of their municipality. Before the introduction of the TX line, regional transport within the TX-transit region was depend heavily on private cars. However, after the installation, the TX line “became the stem transport within the municipality, and this affected the mode of commuting and shopping to Tokyo Metropolis from driving to riding the TX line” [TKBM]. Some transport planners recognized that the TX-line completely reflow the mobility pattern within their municipality. An urban-transport planners said that the TX line “changed the flow of people within the city, and created an integrated urban-transport connections” [NGRYM].

All of the TX-station areas experience a steady increase of population. We also confirmed that all municipalities targets young families with kids as new residents within the TX-station areas. Strategically plan to attract young families to the TX-station areas [NGRYM city]. However, the dynamism of population flows is different in municipalities closer to Tokyo Metropolis (Yashio, Misato, Nagareyama, Kashiwa, and Moriya) and those not (Tukuba Mirai, Tukuba). An urban planner explains that “population increase within the TX-station area is accounted mainly by an internal movement within the municipality” [TKB].

On the other hand, the strategic importance of the TX-transit region seems to vary at the prefectural government level.

TX-station areas are, overall, planned and successfully developed as a TOD attracting (young) population and functioning as an urban core in each city. We confirmed that the objectives of urban

planning within the TX-transit region is firmly connected with how to maximize the mobility potential of the TX line.

4.2. Recognition of the shrinkage

[2] Only a few number of public offices recognizes the shrinkage as an important challenge. We summarize the reason of this as two major points: (1) *Recognition gap*: The TX region is now experiencing a rapid increase of population, especially young family cohort, and the livability of each TX development zones increases accordingly. This situation makes urban and transport planners very busy to solve issues *associated with the population increase*. Also, we observed that some of planners feel a gap between the shrinkage that is demographically projected and what they see in everyday practice as a public office. (2) *Institutional temporality*: Institutionally stated that the Urban Planning Master Plan is about for coming 10 years [NGRYM]. Thus, as their professional job, there is no demand to incorporate a long-term perspective (such as 20-30 years, which we consider important to cope with the shrinkage as a long-term gradual exogenous shock) into their city planning.

Despite agreeing data-wise, urban-transport planners do not consider the shrinkage as an immediate issue.

- TX brings a number of young families to the TX-station areas. Right now, the number of young population increases, slow aging, the labor market also expands... the “right-now” reality does not fit to the picture of the shrinkage [TKBM city]
- The city will start losing its population in 2036. So feeling very anxious about the future urban-transport planning [TKB city]
- The difference of pop change b/w the TX-station area and others is becoming severe [TKB city]
- The city will start losing its population in 2027. However, we don’t considered the shrinkage is a big problem [NGRYM city].
- The master plan is for coming 10 years. So we don’t work on urban-transport planning for 30 years later. We think the 10-year span is reasonable taking into consideration the difficulty of predict the future society [NGRYM city].
- Our main problems right now are how to respond to different types of demands from an increasing (young) population. Especially less supply of educational facilities. That’s our job now [NGRYM city]
- Enhancing the secondary public transport (bus, taxi) for the elderly people.
- Enhancing the accessibility to Tokyo Metropolis.
- Making and implementing the Location Optimization Plan (LOP) to promote a compact city.
- The LOP framework does not fit to all cities. Still, they work on it to receive subsidiaries from the national gov.
- Promoting attractive urban planning/design = architectural regulations and greening.
- Promoting tourism.
- Together with different actors, try to enhance mobility for the senior within the city [TKBM city].
- We currently perform urban structure analysis to make our Location Optimization Plan for the shrinkage as well as enhancing the resilience to floods [TKBM city].
- We make efforts to enhance the community bus within the city. However, due to the lack of budget, we have to think about efficient routing [TKB city].
- Together with attracting young families, promoting the tourism to increase the number of tourists [NGRYM city].
- To keep the value of houses as well as landscape, the city regulates the minimum size of floor for residential properties = 135m² [NGRYM city].
- To enhance the landscape, the city tries to preserve greens as much as possible [NGRYM city].
- The mayor thinks that “to be a city able to keep its population, it is important to have an excellent access to its core city” [NGRYM city].
- Our city is very small in its geographical size. So public transport coverage is almost 90 % of the city population. Thus, we cannot see any need to design “the Location Optimization Plan” [NGRYM city].

Enhancing the accessibility to the TX stations as well as to Tokyo Metropolis together with the LOP seems a major response to the future shrinkage.

4.3. Coordination dynamics

(A) Urban planning:

- The sectionalism makes it hard to implement inter-city integration/collaboration.
- There are institutional obstacles as well.
- Other cities are basically “competitors”.
- If the strategic interest matched, cities can collaborate.
- Fading inter-city collaboration since the planning phase.

(B) Transport planning:

- Active inter-city collaboration and communication to enhance PT as *networks*.
- Active inter-city collaboration to enhance the service of TX.

Overall

- Weak linkage b/w U&T planning.
- In U planning, weak coalitional potential – rather they compete with each other.
- In T planning, strong coalitional potential. Seems cities have a shared interest to improve institutional challenges.
- Weak integration b/w U and T planning parties.
- Due to the sectionalism within the public administration system, inter-city integration/collaboration does not work well [TKBM city].
- If the strategic interest matched, we can collaborate. For example, enhancement of the service of TX. We annually talk with MIR [TKBM city].
- We think it’s important, and actually the national government recommend it. However, in the reality, that’s not easy [TKBM city].
- Thinking about a new connection of secondary public transport with Moriya station. To enhance the mobility to hospitals, we want to collaborate with neighboring cities in terms of enhancing public transport (bus) [TKBM city].
- We do ‘intel’ about the urban planning strategy of other cities. On the other hand, we try to collaboratively communicate with other cities (such as Moriya-city) in terms of public transport [TKBM city]
- Due to the sectionalism, it’s not easy to do an integrated urban planning [TKB city]
- In terms of strategic positioning of the TX-region brand, we agreed with each other [TKB city]
- We used to have a inter-city regular meeting coordinated by the pref gov. But it became irregular meeting [TKB city].
- We have a regular action to request things to the pref gov together with other cities [TKB city].
- We have a inter-city meeting in order to collaboratively request things to the pref gov [NGRYM city].
- It’s hard to ignore “**inter-city competition**” nowadays [NGRYM city].
- I personally think that we will not collaborate with other cities except for dealing with so-called NIMBY facilities [NGRYM city].

Clear difference between urban planning and transport planning, and a weak integration of the both: Urban planning as a whole is prone to be institutionally interpretive and city-minded whereas transport planning as a whole looks institutionally rigid and intercity-minded. Because of the decentralization of urban planning responsibilities from the national government to the city governments since 2000, each city government now has a leeway to interpret what the laws and regulations relevant to urban planning state. They even have an authority to deregulate some of urban planning regulations through issuing the city ordinance. Historically, there is a weak integration between the urban planning and the transport planning in Japan ([Architectural Institute of Japan, 2017, p. 143](#)). Compared to the set of intuitions for urban planning that has a long-standing history, that for transport planning has just started developing in 2007.

There is strong right of ownership in Japan = it is difficult to keep enforceability of regulations and laws related to land use and urban planning. Land owners, in reality, can to large extent develop their lands as they wish. This makes newly established *Ricchi Tekiseika Keikaku* (Urban Facility Location Plan) less enforceable.

The lack of clear cooperation between the transit-line and the transit-region for regional urban-transport planning: There is no clear cooperation between MIR and city-level as well as prefecture-level governments in terms of urban planning. MIR is, by its nature as a third sector organization, responsible only for the operation and maintenance of the TX line.

4.4. Power dynamics, change demands of municipalities and prefectures

(A) Urban planning:

- No institutional as well as organizational frameworks to promote a regionally-integrated U-T planning. Coordinating function at the pref gov may be required.
- Remaining influences of the national government.
- National gov is far from city govts.
- The LOP framework does not fit to some of cities.

(B) Transport planning:

- Feeling inconvenience in the rigor, complication, and less discretionary / enforcement power.
- Relatively direct communication with the national gov organizations.
- Coordination problem b/w PT and private operators.

Overall - organizations:

- Agreeable relation b/w the city govts and their pref gov.
- Human resource capability affected by the city-gov size.

Overall - institutions:

- No strong intention to change particular institutions. "We just follow laws and regulations [TKB city]".
- In addition to the weak coalitional potential identified previously, the U-planning actors behave like "opportunists" – to maximize their opportunities within the existing institutional framework by their high level of discretionary and enforcement power. Potential coordination is almost always based on interest-match.
- T planners, seems to us, feel more frustration about the rigor of relevant institutions and their low level of discretionary and enforcement power. This situation seems to position them in "subversives" in the theoretical framework. However, when it comes to the actor characteristics, considering the T planners as "subversives" is inconsistent with the high coalitional potential we identified. This is probably because of very fact that T planners are part of public-admin system, thus fundamentally not an institutionally-conflict group of the national gov. Also, the direct collaborative relation with the national organizations makes it useless to hide their institutional demands – thus there is no barrier to actively collaborate with other T planners.
- There is a convenient atmosphere to communicate with the pref gov [TKBM city].
- I found that it is very complicated to transport people (regulations related to the (public) transport are very strict) [TKBM city].
- The national government is very far from us [TKBM city].
- There is an institutional hindrance as well. We want the pref gov to work on the coordination [TKBM city].
- We can receive subsidies from the national government by making a Location Optimization Plan. The framework of the location optimization plan is promoted by the pref gov [TKBM city].
- Communication regarding the public transport often happens with the district transport bureau (=Ministry of Land, Infrastructure, Transport and Tourism) [TKBM city].

- As for the transport planning, one of the unit in the city-gov office directly communicates with the ministry [TKB city].
- The comprehensive plan is rather vague and not easy to condense opinions from different units within the city-gov office [TKB city].
- We know there are city-level compact city strategies. However, to our knowledge, there is no institutional framework to promote regionally-integrated urban-transport planning. The national government also does not provide such an institutional framework. All city governments are incentivized to maximize the benefits for their own, so there is nothing to do by one city [TKB city].
- Organizationally speaking, our city is a big city, so having more human resources. This enables us to allocate experts to technical units. Also, our city has many national research institutes, so it's easier to make networks with the national organization through these institutes [TKB city].
- If necessary, we collaborate with the pref gove [TKB city].
- We have no special action plan to focus on particular institutions. We just follow laws and regulations. In terms of coordination, we feel problematic to coordinate conflicting opinions b/w old and new residents [TKB city].
- It's bit complicated to coordinate routes of the community bus in order to avoid confliction with private bus/taxi operators. We talk about his in the meeting for Revitalization and Rehabilitation of Local Public Transportation Systems [TKB city].
- As a suburban city, the fate of our city will be very affected by the fate of Tokyo Metropolis. But, I don't think that it's both institutionally and organizationally hard to collaborate with other cities to enhance the Tokyo region [NGRYM city].
- Some cities want the prefectural governments to work on the inert-city coordination.

(Informal) effectiveness of the decentralization: Even after the decentralization, some urban planning officers urged that the influence of the national government is still strong in terms of creating visions and distribution of subsidiary for the urban planning.

5. Analysis and Discussions

Decentralization and intensifying inter-city competition: In 2000, the government of Japan issued The Act on Arrangement of Relevant Acts for Promotion of Decentralization of Authority (hereafter, The Decentralization Act ^{vii}) to decentralize some of administrative responsibilities to the local administrative bodies. Through this decentralization, the responsibility of urban planning moved to the city-government (*Shi-Yakusho*) level. More specifically, each city government now has ability to create *and* authorize its own Urban Planning Master Plan. Before The Decentralization Act, city governments had a right to create an Urban Planning Master Plan but not having a right to *authorize* it. The authorization and thus enforcement of each Urban Planning Master Plan was made only by prefectural (or equivalent) governments. This shift of authority triggered inter-city competition because there is a strong incentive for each city government to create and promote a master plan that is by the city, for the city. An increasing incentive to prioritize “my-city-first” mindset has, conversely, weakened the incentive to collaborate with neighboring cities about an integrated regional urban planning. The intensifying inter-city competition based on “my-city-first” mindset, together with deregulation of the Urbanization Adjustment Areas^{***} (*Shigaika Chousei Kuiki*), resulted in the lowering of spatial density of urban facilities. Residential buildings in particular have been mushroomed elsewhere within the Urbanization Adjustment Areas where a new development is basically restricted. Thanks to cheap land prices as well as the exemption of the City Planning Tax, houses and apartments developed within the Urbanization Adjustment Areas tend to be cheaper in their rent (or sales price) compared to those in the Urbanization Areas (*Shigaika Kuiki*). If a city is capable to offer a more number of affordable housing compered to neighboring cities, this city likely looks attractive for those who are seeking for a new place to live – thus more competitive than neighboring cities within the region in terms of attracting new population. This reasoning is widely shared among urban planners of each city government, thus there is an incentive for them to further deregulate the Urbanization Adjustment Areas through the application of the city ordinance^{***}, which leads the arable lands to unrestricted urbanization.

Establishment of the Location Optimization Plan (Ricchi Tekeiseika Keikaku): The unrestricted urbanization within the Urbanization Adjustment Areas makes cities sparser. However, considering the projected depopulation and aging, the National Government has started worrying about this inclination because it could be unsustainable for city governments to keep the quality of public services for such a sparsely expanding urban area in the age of shrinking. Thus, in 2014, the National Government partially amended The Law for Special Measures concerning Urban Reconstruction to promote a *compact-city* planning. This amendment states that each city government is able to create and authorize the Urban Facility Location Optimization Plan^{viii} (*Ricchi Tekiseika Keikaku*. Hereafter Location Optimization Plan) that concerns “the *location* of dwelling functions, and urban functions, such as welfare, medical care and commerce, enhancement of *public transportation* and so on to ease the floor-area ratios and land use regulations for those functions they [city governments] want guided within a designated urban function zone.” (MLIT, 2014, p. 121, italicized by the authors). To enhance public transportation planning together with a Location Optimization Plan, the Law on Revitalization and Rehabilitation of Local Public Transportation was also amended in 2014 so that city governments is able to create and authorize the Local Public Transportation Network Formation Plan (*Chiki Koukyou Koutsumou Keisei Keikaku*)^{ix} (hereafter Local Transportation Plan). In other words, the Location Optimization Plan is for fostering a multi-nodal network compact city where both urban planning and (public) transport planning are supposed to work together (Architectural Institute of Japan, 2017).

5. Conclusion

As for the research question 1, we found that across the public actors, the shrinkage is not considered as a relevant issue to both urban and transport planning at this phase. Two major reasons identified: the current reality of the TX region and limited temporal scope of the official urban and transport planning. As for the research question 2, we found that there is a lack of an institutional framework to foster the integration between urban and transport planning. These two camps of planning, albeit their adjacency to each other, almost completely lack the institutional framework to work together. In addition, no tangible institutional framework exists to foster a regionally-integrated urban and transport planning. Several planners at the municipal-government level emphasize an improving coordinating function at the prefectural (or national government) level to foster a regionally-integrated urban planning. As for the research question 3, we found that urban planning actors behave like the opportunists in the MT model. Within the urban-planning institutional framework, potential institutional change looks, currently, consistent with the *conversion*. On the other hand, transport planners basically behave like the *subordinates* in the MT model. However, this should be a weaker version than the theory originally expects in terms of its coordination dynamics. Transport planners' high coordination potential is inconsistent with what we expect from the theoretical framework. Based on the empirical materials we gathered, this mismatch between the observed and the theory-expected happen because of three reasons: (i) the transport planners are part of the public-administrative system; (ii) they tend to have collaborative relations *directly* with the national governmental bodies (namely, the institutional *designers*), and (iii) the very nature of public transport planning (namely, planning *the networking*) incentivizes the transport planners to openly collaborate with different actors in different locations. In the transport-planning institutional framework, we can expect that gradual endogenous change would look like a variant of the *layering*. However, we argue that given the friendly collaboration of the designer (governmental bodies), motivation of the designer to block the intuitional change could be relatively weaker, and this could lead its veto power to more conditional. Under such a situation, the high coordination capability of the public transport planners, which would be increasingly supported by growing needs of flexible mobility services for the seniors, leads them to more *challenger* position in the MT model in order to realize a foundational alternation of the existing rules. However, we expect that this would not be an antagonistic relation with the designer, rather, more productive one like an institutional *entrepreneur*.

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Notes:

ⁱ According to UN, urban agglomeration having more than 10 million population (United Nations, 2015).

ⁱⁱ By the amendment of the City Planning Act in 2000.

ⁱⁱⁱ The widely accepted English translation of Ricchi Tekiseika Keikaku within the academia of urban studies in Japan is “Urban Facility Location Plan.” However, the authors think that this translation does not deliver well the meaning of “Tekiseika” = optimization, which is the core purpose of the Ricchi Tekiseika Keikaku. Thus, in this paper, we intentionally use “the Urban Facility Location Optimization Plan” instead.

^{iv} By the amendment of the Law for Making Partial Amendments to the Law for Special Measures concerning Urban Reconstruction in 2014.

^v Compared to the displacement, there is no reason to completely displace (destroy) the old rules in the conversion. If the enforcers have a high degree of discretion power to interpret and enforce the existing rules, and the designers have no intention to stop it, it's much easier to re-use and renovate the existing rules for the new purposes rather than fighting political struggles. In the displacement, because the veto power (which can be supported by very institutional framework) of the designers is so strong, a political struggle to destroy the institution is an only way to realize an intuitional functions and effects that the dominant change-agent prefers to.

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^{vi} Names of change agent were modified by the authors for the ease of understanding. Original names are subversive (subordinate), parasitic symbiont (free rider), insurrectionary (challenger), and opportunist (same as the original) (Mahoney & Thelen, 2009, p.28).

^{vii} The official abbreviation of The Act on Arrangement of Relevant Acts for Promotion of Decentralization of Authority is “The Act on Arrangement for Promotion of Decentralization of Authority.” However, even this abbreviation is too long to state in this paper, we instead use “The Decentralization Act.”

^{viii} The widely accepted English translation of Ricchi Tekiseika Keikaku within the academia of urban studies in Japan is “Urban Facility Location Plan.” However, the authors think that this translation does not deliver well the meaning of “Tekiseika” = optimization, which is the core purpose of the Ricchi Tekiseika Keikaku. Thus, in this paper, we intentionally use “the Urban Facility Location Optimization Plan” instead.

^{ix} This English translation of “Chiki Koukyo koutsumou Keisei Keikaku” is based on the White Paper 2014 by MLIT, p. 123.

Matthew Gareth Bevan

RUNNING HEADER: DIFFERENCES IN THE DECAY OF DIVORCE-INDUCED RESIDENTIAL MOBILITY

Title: Investigating differences in the decay of divorce-induced residential mobility across gender and urbanisation

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Abstract

Divorce is a life course event that triggers deviant, negative residential moves that symbolises the antithesis of climbing the traditional housing ladder, and sets individuals on an altered housing trajectory, typically associated with long-term instability compared to married counterparts. Studies have revealed that long-term instability associated with divorce is commonly connected to an increased probability of moving out of owner occupation that is greater and persists longer for women than men. Similarly, studies examining the immediate effects of divorce typically identify that women have a higher risk of moving out of the matrimonial home at the time of separation. No studies found have examined the time taken for divorcing individuals to assume their new altered housing trajectories. This study aims to develop an understanding in this regard by examining gendered differences in the time taken for individual mobility rates to assume their new housing trajectory, and considering what effects urbanisation has on divorce-induced mobility. Using the Swedish LISA database, groups of divorcing single parents with cohabiting children under 18 are compared to similar long-term divorcees whom are conceptualised to represent the post-divorce altered housing trajectory. Noteworthy findings include: 1) Divorce-induced mobility at the time of separation decays one year after divorce for Rural and Urban male groups, at which time the new housing trajectory was assumed. 2) The decay time for Big City males was four years. 3) The decay time for Urban females was four years, while Rural and Big City female groups remained at an elevated mobility state for all four years observed post-divorce. 4) Degree of Urbanisation has a significant impact for women, mobility was highest in Rural groups and lowest in Big City groups. However, no such effect is observed for males. This study is important to municipalities and urban planners because the findings presented here concerning gendered and regional impacts on mobility are relevant to forecasting housing demand. Moreover, national planners are concerned with regional inequalities and the finding that degrees of urbanisation has a mobility association for females, but not males, is interesting in light of Sweden's rural development and gender equality goals.

Keywords: Divorce, Effect, Gender, Residential Mobility, Time, Urbanisation.

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1. Introduction

Understanding and conceptualising the factors which effect migration and spatial mobility has been deeply pursued throughout the 20th century. In exploring when, where, and why people move homes, authors have presented theories incorporating socio-economic demographics, the housing career, and the life cycle in the growing body of literature studying residential mobility (Elder, 1981; Feijten & van Ham, 2007; Glick & Parke, 1963; Lee, 1889). While residential mobility is connected to broad concepts such as age, gender, or income, the current and dominant theoretical framework for explaining residential moves are life course events (W. A. V Clark, 2013; Courgeau, 1985; Feijten & van Ham, 2007). That is, residential mobility is most strongly connected to certain events, such as entering into homeownership, relationship formation and dissolution, having dependent children, entering higher education, incarceration, etc., and these events are used to understand residential mobility in conjunction with other factors (W. A. V. Clark & Lisowski, 2017; Feijten & van Ham, 2007). Although, the depth and richness to be found in mobility research far exceeds this introductory explanation (Coulter, van Ham, & Findlay, 2015).

Divorce, as member of the relationship dissolution category of life course events, is especially interesting for this study because the connection between divorce and residential moves is very direct. These moves have the characteristics of being unexpected, immediate, unplanned, and constrained by availability, affordability, and proximity (W. A. V. Clark & Lisowski, 2017; Mulder, ten Hengel, Latten, & Das, 2012). Furthermore, moves associated with divorcing are commonly perceived as negative or deviant moves, where the stereotypical idea of climbing a housing ladder is disrupted as individuals may downsize or move to less desirable areas (Feijten & van Ham, 2013). Studies have found evidence that several residential moves are often required before an individual finds a new suitable housing equilibrium (Feijten, 2005; Feijten & van Ham, 2007, 2010; Mikolai & Kulu, 2018b; Thomas, Mulder, & Cooke, 2017). Studying residential moves that incur because of divorcing (divorce-induced mobility) is especially important because mobility in this sense is extremely negative and stressful for people. Municipal and national actors have a vested interest in understanding divorce-induced mobility so that they can plan housing and support mechanisms accordingly. In this regard, divorce has extremely gendered residential mobility outcomes that are consistently documented – women tend to exhibit more extreme instability around the time of a divorce than men do (Cooke, Mulder, & Thomas, 2016; Coulter, Van Ham, & Feijten, 2012; Feijten, 2005; Feijten & van Ham, 2007, 2010, 2013, Mikolai & Kulu, 2018a, 2018b; Mulder & Malmberg, 2011; Mulder et al., 2012; Mulder & Wagner, 2010; Smits, Mulder, & Hooimeijer, 2003; Thomas et al., 2017; Thomas, Mulder, & Cooke, 2018; Warner & Sharp, 2016).

The body of residential mobility research has devoted much attention to understanding the immediate effects of divorce, and other life course events. Similarly, the long-term effects on residential mobility are well documented, albeit with wider variation among studies. The general consensus indicates that individuals remain at an elevated state of mobility compared to their married counterparts, and that divorce puts individuals on a new altered housing trajectory (Feijten, 2005; Feijten & van Ham, 2010; Herbers, Mulder, & Mødenes, 2014; Mikolai & Kulu, 2018b; Warner & Sharp, 2016). However, this study identifies there is a research gap in understanding the duration of the immediate effects of divorcing and the time taken for the new altered housing trajectory to be assumed. Because gender has a large effect in the short and long-term mobility outcomes of divorce, it is expected that gender also impacts how quickly the new altered housing trajectory is assumed.

A further angle of enquiry that appears lacking in the residential mobility literature reviewed, are the impacts of urbanisation. How divorce-induced mobility is connected to urbanisation is an interesting line of enquiry given our rapidly urbanising globe, that has been conceptualised in different ways in previous mobility studies (Feijten, 2005; Mulder & Malmberg, 2011; Thomas et al., 2017). There appears scope to explore the understanding of urbanisation and the effect it has on mobility, and this study has the opportunity to further this discussion by including urbanisation in the primary investigation of the decay of divorce-induced mobility.

This study aims to contribute to the understanding of residential mobility, by investigating the decay of divorce-induced mobility across gender and urbanisation in a Swedish context. Central to this study is the conceptualisation that divorce alters an individual's housing trajectory. By calculating the time taken for a divorcing individual to exhibit mobility behaviour in line with an individual already on a post-divorce housing trajectory, this study will attempt to quantify the decay time of divorce-induced mobility. The average frequency of residential moves made per year of divorcing single parents with cohabiting children under 18 will be compared to the average frequency of residential moves made per year of long term divorced single parents with cohabiting children under 18. A discussion on these observations follows to evaluate the effects of gender and urbanisation on divorce-induced mobility.

2. Literature Review

2.1 Gender

Numerous studies have investigated the gendered nature of divorce and its impacts on residential mobility. The consensus of research recognises that divorce is a disruptive life course event that induces residential mobility for both men and women (W. A. V. Clark & Lisowski, 2017; Feijten & van Ham, 2010, 2013; Mulder et al., 2012; Mulder & Wagner, 2010; Warner & Sharp, 2016) (Cf. Leopold, 2018). This study focuses on findings that women exhibit a higher probability of making a move and higher numbers of moves made because of divorce than male counterparts. This increased mobility may be conceptualised to form two parts: movement out of the matrimonial home, and adjustment moves recovering from the instability of divorce.

The decision on who moves from the marital home is a complex negotiation between partners (Coulter et al., 2012; Mulder & Malmberg, 2011; Mulder & Wagner, 2010). The relative resources of the partners has been submitted as an important factor by studies in determining who remains living in the matrimonial home (Coulter et al., 2012; Dewilde, 2008; Feijten, 2005; Mikolai & Kulu, 2018a; Mulder & Malmberg, 2011; Mulder et al., 2012). Inequalities in resources between genders may arise due to macro level forces and structural connections (Coulter et al., 2012, 2015; Mulder & Hooimeijer, 1995). For example, Cooke, Boyle, Couch & Cooke, Boyle, Couch & Feijten (2009) submit that divorce amplifies gender pay gaps and differences in human capital. Thomas et al. (2017) expand the notion of human capital inequalities by observing how women operate in more restricted labour markets and are less likely to operationalise human capital than men (Agadjanian & Hayford, 2018; Bradbury & Katz, 2002; Davis & Jennings, 2018; Kang, Song, Kim, & Sohn, 2009; Killewald, 2016; Smits et al., 2003). Additionally, studies have explored the notion that resource inequalities between genders may be a product of educational attainment differences, and that personal development sacrifices made by women in pursuing marriage can lead to a resource deficit compared to male partners (Cooke et al., 2009; Thomas et al., 2017). Alternatively, resource inequalities may be considered at an individual level. Mikolai & Kulu (2018a) find that women

are more likely to move out of the marital home if their income is less than half of the male partner. The relative ages of partners in a relationship is commonly associated with incomes and the accumulation of capital, influencing a partner's ability to manage the upkeep of the common home post separation (Mulder & Malmberg, 2011). In Sweden the age of first entering marriage is three years older for men than women (Statistics Sweden, 2015), suggesting there would be a resources disparity between the average couple. Furthermore, the lower relative resources of women may leave them with more restricted residential choices in the post-divorce adjustment period (Feijten & van Ham, 2007). However, the dynamics in these decisions concerning mobility are more nuanced, and include considerations about children and tenure type in addition to resources.

Where children are involved, Thomas et al. (2017) observed that fathers are more likely to leave than mothers almost regardless of resource based inequalities and housing conditions, echoing the findings of Mulder & Wagner (2010) that the ex-partner with custody of children is less likely to leave. Given that children typically reside with mothers post-divorce in Sweden (Jensen, 2009; Mulder & Malmberg, 2011; Statistics Sweden, 2014), it would be reasonable to expect similar gendered trends in this study. The concepts of linked lives (Thomas et al., 2017) and increased location specific capital (DaVanzo, 1981) are submitted as explaining factors as to why children effect mobility outcomes that surpass considerations of relative resources between partners. Additionally, the partner initiating the separation is more likely to move out of the common home, as is the case if the reason for separation is the formation of a new relationship for one of the partners (Mulder & Wagner, 2010).

The tenure type of the matrimonial home is a complex determinant of residential mobility, for both the decision on who moves out, and for subsequent adjustment moves (Falkingham, Sage, Stone, & Vlachantoni, 2016). Mulder et al. (2012) showed women were more likely of move out of the matrimonial home if it was owner occupied. Similarly, Feijten (2005) found that women were more likely to leave owner occupation than men after divorce, while men were more likely to move between owner occupied homes. These findings are significant for the period of post-divorce adjustment because owner occupation is recognised as a more stable tenure type than rented accommodation or social housing (Mulder & Hooimeijer, 1995; van Ham & Clark, 2009; Warner & Sharp, 2016). Degree of urbanisation in which the separation occurs may even have gendered mobility outcomes, likely due to regionally varying trends in the composition of housing stock by tenure type (Mulder et al., 2012).

2.2 Long-Term Effects of Divorce and the Altered Housing Trajectory

Tenure type and the associated risk of moving home is connected to this study's conceptualisation of adjustment moves recovering from the instability of divorce, and the new altered housing trajectory that is produced by divorcing. A few key pieces of research establish a point of departure for investigating the decay time of divorce-induced mobility:

Firstly, Warner & Sharp (2016) evaluate that divorce as a disruptive event places individuals on a long term trajectory of instability. They calculate that divorce had a significant long term effect that lasted for the duration of the divorced state, on average 4,92 years. It is difficult to evaluate Warner & Sharp's (2016) findings by gender and urbanisation.

Secondly, Feijten (2005) finds evidence that one year after divorce, the risk of leaving owner occupation disappeared for men while women remain at risk for longer. This finding may be interpreted to indicate that males should be expected to return to a 'normal' mobility level

after one year, or that potentially the destabilising effects of divorce have decayed after one year, if tenure type is taken to be a primary driver of mobility behaviour post-divorce.

Thirdly, Feijten & van Ham (2010) expand our understanding by calculating that elevated mobility of divorcees remains higher than married couples for up to eight years, while divorcees entering a new relationship experience a decline in mobility after 3,5 years, and return to a 'married level' of mobility after five years. Furthermore, Feijten & van Ham's (2010) UK study finds that the risk of moving out of owner occupation persists for five years, and there is no significant difference between genders in this regard. It is worthwhile noting that comparing the mobility behaviours of divorcees to married persons may not be a good way to evaluate the decay of divorce-induced mobility given that literature suggests a new altered housing trajectory is created by divorcing (Feijten, 2005; Thomas et al., 2017; Warner & Sharp, 2016).

Lastly, Mikolai & Kulu (2018b) find that at the time of divorce the risk of moving is 2,9 times higher for women compared to married counterparts and 3,2 for men, decreasing to 1,3 for women, and 1,2 for men, three years after divorce. These mobility outcomes are effected by the probabilities of moving out of and into various tenure types varying between genders over time from divorce. A noteworthy reflection on these studies is the interest in the tenure trajectories of individuals after divorce, suggesting that the long-term effects of divorce-induced mobility are heavily influenced by tenure type.

Following the conceptualisation that divorce alters the 'normal' housing trajectory of individuals, setting them on a new path of long term instability (Feijten, 2005; Feijten & van Ham, 2010; Mikolai & Kulu, 2018b; Thomas et al., 2017; Warner & Sharp, 2016), is not immediately clear in the selected literature reviewed how long it takes for divorced-induced instability to decay. Furthermore, there is no indication of the time taken for individuals to assume their altered, 'new normal' housing trajectory. Moreover, it is not clear whether there is any gendered difference in time taken to adjust to a 'new normal'.

2.3 Urbanisation

A number of studies consider the role that urbanisation plays in residential mobility, and urbanisation is a complex variable that may capture multiple effects that differ by region. Tenure type effects mobility, it is generally understood that owner-occupation is a more stable form of living than rental or social housing (Falkingham et al., 2016; Feijten, 2005; Feijten & van Ham, 2007, 2010, Mikolai & Kulu, 2018b, 2018a; Warner & Sharp, 2016). In addition, a common trend in many countries is that rural areas have greater proportions of owner-occupied tenure, while the proportion of rentals is greatest in cities. It is therefore natural that urbanisation may be capturing the composition of housing stock, as it differs across regions, which can be associated with regional differences in residential mobility behaviour.

In the context of the Netherlands, Feijten (2005) anticipated that more urban areas would lead to higher levels of mobility due to the prevalence of rental accommodation in cities. This study unexpectedly observed that mobility behaviours of owner-occupiers varied regionally, by degree of urbanisation: Owner-occupiers were more mobile in urban areas than rural areas, moving more often between owner-occupied homes. This finding connects to other observations that certain demographics of the population tend to cluster in cities.

Regional policy and development is connected to residential mobility. Coulter et al. (2015) note that British higher education policy has increased public participation in universities. The

clustering of universities in urban areas rather than rural areas means that residential mobility that is connected to entering further education has regional differences. Wall, Aboim, Ramos & Nunes (2013) also connect regional migration difference in Portugal to the development of higher education in the 1980s and 1990s. Similarly, individuals with higher educational attainment have more to benefit from operating in within wider labour markets and may be more mobile (Mulder, 2000). The regional clustering of jobs that require specialised education may be an additional way that mobility differs across degrees of urbanisation (Mulder & Malmberg, 2011). In literature investigating neighbourhood effects on mobility and selective migration, there is recognition that mobility may be affected by a combination of the place, and the composition of the population (Andersson & Bråmås, 2004; Boschman, 2015).

Mulder & Malmberg (2011) theorised that due to the dense clustering of amenities and increased availability of job opportunities and housing stock, that more urbanised areas would require fewer moves post-divorce, which was echoed by Thomas et al. (2017). While tenure type has appeared as a dominant focus in literature investigating the long-term mobility outcomes of divorce, the literature reviewed in respect of urbanisation has presented a plethora of arguments associating urbanisation with mobility.

Because urbanisation is a complex phenomenon that captures many associations, it may be challenging to isolate causes and effects on mobility. Some studies reviewed encountered difficulty in this way, where the anticipated effects of urbanisation were not supported by observation (Mulder, 2000), or highlight that the operationalisation of 'urbanisation' diminishes findings (Coulter et al., 2015; Feijten & van Ham, 2013).

Therefore, this study expects that urbanisation has an effect on residential mobility in general, that also corresponds to the decay of divorce-induced mobility. However, it is challenging to determine if urbanisation has a stabilising or destabilising impact due to the variety of associations that may be captured by a degree of urbanisation variable.

3. Hypothesis Formation

Much of the literature reviewed discusses and analysis residential mobility in terms of probability. The data collected for this study will be in the form of the average frequency of residential moves. Therefore, it is prudent to verify the connectivity of these two forms of understanding mobility by testing a benchmark of residential mobility behaviour.

Hypothesis 1: Divorcing and Non-Divorcing individuals have different mobility frequencies.

Testing this hypothesis aims to establish that the expected increased risk of mobility at the time of divorce translates to an increased frequency of residential moves made around the time of divorce.

Due to the gendered inequality of resources, and increased risk of moving from owner occupation to a more unstable tenure time, it is expected that women will exhibit more extreme instability at the time of divorce, and generally over the long term.

Hypothesis 2: Divorce-induced mobility has gendered outcomes, women move more frequently than men.

Due to the different shares of owner occupied accommodation concentrated in Sweden's urban areas, and different supplies of jobs, housing and density of amenities, it is expected

that increased urbanisation has an effect on residential mobility and produces some regional variance. However, it is unclear if the effect will be stabilising or destabilising.

Hypothesis 3: Increasing degree of urbanisation has an effect on residential mobility.

Because residential mobility is expected to have differing outcomes across gender and urbanisation, it is expected that the time taken for divorce induced residential mobility to decay should accordingly vary across gender and urbanisation.

Hypothesis 4. Decay of elevated residential mobility in divorcing groups is different across genders and degree of urbanisation.

4. Method

Using register data extracted from the *Longitudinell integrationsdatabas för Sjukförsäkrings- och Arbetsmarknadsstudier* (LISA database) prepared by Statistics Sweden this study collects and compares the average frequency of residential moves made per year for specific agglomerated groups of individuals. The LISA database contains microdata for all individuals in Sweden for the years 1990-2014. Individuals over 16 years of age appear in the database as individuals, younger persons are only identifiable through their RTB family units (Statistics Sweden, 2016a). Malmö University provided the data extraction for this study using the University's existing subscription to a selection of available variables in the database.

First, urbanisation is operationalised and quantified with each municipality in Sweden categorised into degrees of urbanisation. Degrees of urbanisation are presented as a typologization of municipalities on the basis of population density, population size and the population's proximity to population agglomerations, generally in line with practice by Eurostat and the OECD. The division is based on population in coordinated statistics (kilometre squares) to calculate the rural and non-rural population of a municipality and different threshold values in order to determine the municipality's group affiliation (Myndigheten för tillväxtpolitiska utvärderingar och analyser, 2014) (Referred to in text as Tillväxtanalys). Using these definitions from Tillväxtanalys, which incorporates Funktionella Analysregioner (Myndigheten för tillväxtpolitiska utvärderingar och analyser, 2015), goes some way towards addressing the modifiable areal unit problem in this study. Because Funktionella Analysregioner consider neighbouring municipalities within a broader, regional labour market in calculating degree of urbanisation, this definition is less susceptible to extreme values from population and density calculations based solely on administrative boundaries.

Table 1. Definitions of degrees of urbanisation

Short Name	Urban Code	Definition	# Municipalities
Rural	1	municipalities with at least 50 per cent population in rural areas	130
Urban	2	other municipalities with less than 50 per cent population in rural areas	131
Big City	3	municipalities with less than 20 per cent of the population in rural areas and a population of at least 500,000 inhabitants gathered between neighbouring municipalities	29

Translated and adapted from Tillväxtanalys (2014)

The degree of urbanisation of each municipality will be used when agglomerating individual level data from the LISA database into three groups: Rural, Urban, and Big City.

The sample of divorcing persons is created by specifying that for the years 2010-2014, the marital status of the individual must be 'divorced'. For the year 2009 the marital status must be 'not divorced' in order to capture a change in marital status. The reference groups must be 'divorced' for all years 2008-2014. In addition to the marital status variable, it was also specified that the family structure of the individual must be 'single mother with child 0-17' or 'single father with child 0-17'. To be included in the reference groups, individual also needed to meet the family structure criteria for every year 2008-2014. The divorcing groups needed to meet the single parent criteria for the years 2010-2014, however for 2008 and 2009 the family structures 'husband' 'wife' 'registered partner' and 'cohabitant with common children' were permitted to capture the family structures as they stood prior to divorcing.

The number of registered changes of address each year were recorded for all individuals meeting the marital status and family structure criteria. Additionally, disposable income personalised from family was recorded to give an insight into the resources of individuals. The data was then collapsed into 12 groups, by gender (male or female), degree of urbanisation in their municipality (Rural, Urban, Big City), and whether they were divorcing in 2010 or not.

For each of the groups, the number of individuals in each group was recorded, together with the arithmetic mean of the frequencies of residential moves made in a year, respective standard deviations, average employment rate and disposable income calculated. It is necessary to agglomerate the data so that it is not possible to identify any individuals in the database over privacy concerns. The data for disposable income is calculated for November of the given year in the database, while marital status, family structure, employment, and residence are represented as the register data stood at the 31st December of the given year. Therefore, it is possible that the register data misses a marriage and subsequent divorce if it happens within the same calendar year.

Similar to the challenges Mulder & Malmberg (2011) faced working with the Swedish ASTRID database, the LISA database struggles to capture extramarital cohabiting unions. The presence and residence of children in the register data goes some way to alleviating the challenges of identifying new relationship formation. The family structure variable is useful in this regard to identify and exclude new cohabiting unions forming. However, these would only be identified if such information enters the register. The register data cannot be used to capture the true realities of life, for example the registered residence of the children may not reflect their habitual residence arrangements between parents. It is worthwhile acknowledging that this study operates through a confined lens of register data reality.

The data sample was constructed in this way in an attempt to isolate the effects of divorce on residential mobility by excluding other life course events such as the formation of new relationships, and children moving out of the parental home. Initially, a constraint on age was attempted, however this was found to substantially reduce the sample size and was dropped from the final extraction process.

5. Limitations

There are certain limitations to the understanding of residential mobility this study can develop due to the design and nature of research that this study performs. Firstly, this study is a quantitative, enumerative statistical study, relying on a large sample size of over 100.000

individuals to glean insight into generalised mobility behaviour (Deming, 1953). Using a relatively large database in this way enhances this study's claims of generalisability, while using standardised statistical techniques aids reproducibility of the findings (Bryman, 2012). However, this study still encounters some issues with small sample sizes.

The next section presenting the data will show the smallest sample size among the groups is 224. Considered alone, a group's sample size this small is not too concerning. However, because the observed means are close to zero, the issue of minimum resolution given the sample size is encountered: what appears a noteworthy increase in the mean between years is actually an increase of one extra move per year. The significant differences in the numbers observed between genders consequently affects the strength of generalised conclusions this study can make. Similar concerns connected to size and data arise because this study is only able to control for a small number of variables. This is because resources for this study are limited by time and accessibility of data. While this study attempts to control for and isolate the effects of variables, it pales in comparison to mature research such as Warner & Sharp (2016).

The temporal resolution of the database also limits the understanding that is developed in this study. Because the nature of divorce-induced mobility is characterised as immediate and time constrained, observing individuals on a yearly basis, as opposed to a monthly basis as some studies have done, may inaccurately describe time depended mobility behaviours (W. A. V. Clark & Lisowski, 2017; Mikolai & Kulu, 2018b, 2018a; Mulder et al., 2012). Additionally the LISA database is limited to showing individuals of age 16 and over. There may be differences in the distribution of the cohabiting child's age that correlates with gender or degree of urbanisation that cannot be observed. Because age is a factor that influences mobility, the age of cohabiting children plays a large role in a household's mobility (Long, 1972; Mulder et al., 2012).

Using the LISA database as the single source of data for this study also means that a registered reality is being observed. While the quality of Swedish register data is assumed to be reasonably high, it can never be a perfect reflection of real life. Here, *de jure* divorce is observed, not physical separation as was the case in Mulder and Malmberg (2011). As will be shown in the next section, the year before divorce, 2009, has significant mobility differences most likely because couples effect separation during the 'period of reconsideration' rather than the legalisation of divorce (Sveriges Domstolar, 2018). There is also the possibility that informal living arrangements are not captured by the register data. Registration of a child's address with parent is presumed to be accurate because of the divorce proceedings, however the actual living arrangements and behaviour of children cannot be known. This raises the question as to what extent cohabiting dependent children in this study effect residential mobility in the same way as understood in the literature reviewed.

This study does not collect any qualitative data, and is therefore reliant on the theories developed in previous research. Consequently, there is an unknown aspect in the reasons and motivations for residential mobility behaviour that is observed. Furthermore, the collection of qualitative data to supplement this study is not considered as a worthwhile course of action. The amount of qualitative data required to avoid anecdotalism would be large and beyond the resources available to this study (Bryman, 2012). This study's deductive approach to theory is concerned with evaluating hypotheses that are derived from previous research, which largely holds a positivist empirical standpoint (Bryman, 2012). This study misses an opportunity to consider residential mobility in light of changing gender norms.

The recent acceptance of a non-binary gender in society could be important in how gender effects of residential mobility are conceptualised. As W.A.V. Clark (2013) detailed the limitations of age as an explanatory variable for residential mobility, perhaps gender will also require a similar re-think. For the purposes of working with register data on the LISA database, this study adopts a binary gender perspective out of necessity. Similarly, the previous research reviewed adopts a binary gender perspective, continuing to do so facilitates international comparisons over time. This study cannot discern how non-binary individuals behave at the time of divorce.

Finally, this study also assumes a hetero-normative view of relationships, marriage and divorce, that is separated from reality. This decision was also taken to facilitate comparison with existing research. The LISA database has the possibility to work with 'registered partnerships', that is the term for same-sex unions before gender limitations were removed for marriage in 2009 (Statistics Sweden, 2016a), and the dissolution of these partnerships. This study did not take the opportunity to investigate same-sex relationship dissolution-induced mobility outcomes, and instead focusses on the classical hetero-normative position taken by existing research. While research investigating the mobility dynamics of non-hetero-normative relationship dissolution may be lacking, it is submitted that the variety of factors explored in the literature review, such as relative resources, age, tenure type, etc., provide sufficient means to understand mobility in this new gender and relationship paradigm.

6. Data and Analysis

Table 2. The data sample extracted from the LISA database, individual register data is agglomerated into groups based on gender, degree of urbanisation, and divorcing in 2010 (continued on the next page):

Gender	Urban code	Divorcing Group	Average Moves 2008	Average Moves 2009	Average Moves 2010	Average Moves 2011	Average Moves 2012	Average Moves 2013	Average Moves 2014	Observations
1	1	0	0,117	0,088	0,085	0,067	0,058	0,064	0,059	2976
2	1	0	0,280	0,262	0,265	0,210	0,180	0,176	0,165	12802
1	2	0	0,117	0,109	0,102	0,081	0,072	0,072	0,064	8364
2	2	0	0,269	0,249	0,241	0,177	0,165	0,154	0,143	41572
1	3	0	0,130	0,099	0,096	0,072	0,058	0,060	0,060	4979
2	3	0	0,197	0,186	0,167	0,117	0,109	0,102	0,102	32110
1	1	1	0,098	0,085	0,129	0,054	0,058	0,067	0,067	224
2	1	1	0,194	0,422	0,432	0,273	0,210	0,202	0,188	644
1	2	1	0,079	0,124	0,137	0,083	0,073	0,064	0,069	700
2	2	1	0,240	0,409	0,412	0,204	0,180	0,186	0,146	2344
1	3	1	0,116	0,160	0,187	0,089	0,096	0,080	0,059	438
2	3	1	0,220	0,302	0,349	0,151	0,142	0,121	0,123	1983

Gender 1 = Male 2 = Female

Urban code 1 = 'Rural' 2 = 'Urban' 3 = 'Big City'

Divorcing Group 0 = No (reference group) 1 = Yes (divorcing group) Note that 2010 is the year of divorce for the Divorcing group

Average moves* Average frequency of residential moves made for each year 2008-2014

Table 2 Continued. The data sample extracted from the LISA database, individual register data is agglomerated into groups based on gender, degree of urbanisation, and divorcing in 2010:

Gender	Urban code	Divorcing Group	Standard Deviation 2008	Standard Deviation 2009	Standard Deviation 2010	Standard Deviation 2011	Standard Deviation 2012	Standard Deviation 2013	Standard Deviation 2014	Average Disposable Income	Employment % 2010
1	1	0	0,367	0,313	0,316	0,271	0,251	0,255	0,251	1540	0,887
2	1	0	0,537	0,523	0,519	0,473	0,443	0,434	0,421	1264	0,747
1	2	0	0,355	0,351	0,336	0,299	0,278	0,282	0,262	1714	0,892
2	2	0	0,527	0,506	0,494	0,430	0,425	0,410	0,396	1327	0,731
1	3	0	0,368	0,328	0,320	0,289	0,262	0,263	0,256	2055	0,869
2	3	0	0,465	0,456	0,428	0,362	0,350	0,340	0,342	1477	0,726
1	1	1	0,340	0,295	0,398	0,226	0,253	0,314	0,252	1462	0,897
2	1	1	0,474	0,605	0,616	0,499	0,471	0,466	0,425	1287	0,750
1	2	1	0,280	0,397	0,387	0,301	0,271	0,268	0,285	1782	0,904
2	2	1	0,539	0,595	0,596	0,453	0,417	0,446	0,385	1314	0,699
1	3	1	0,420	0,408	0,485	0,308	0,358	0,311	0,255	4202	0,879
2	3	1	0,512	0,566	0,576	0,415	0,394	0,364	0,370	1499	0,671

Gender 1 = Male 2 = Female

Urban code 1 = 'Rural' 2 = 'Urban' 3 = 'Big City'

Divorcing Group 0 = No (reference group) 1 = Yes (divorcing group) Note that 2010 is the year of divorce for the Divorcing group

Standard Deviation* Standard deviation of the corresponding average frequency of residential moves made for each year 2008-2014

Average Disposable Income Average disposable income of individual, personalised from family

Employment % 2010 Percentage employed as at 31st December 2010.

6.1 Descriptive statistics

It is important that the sample extracted from the LISA database is representative of the total population to improve the strength of claims that this study is proportional to the general population and that the findings can be generalised (Bryman, 2012). Table 3 compares the characteristics of the extracted data sample to population data for Sweden. It is important to highlight the representation of genders here as this study is concerned with mobility behaviour that differs across gender. While the extracted sample observed many more women than men, this is generally the case for divorced single parents in Sweden.

Table 3. Descriptive statistics for the data sample extracted from the LISA database compared with descriptive statistics of the Swedish Population. Source: Statistics Sweden.

	Total size	Of which Female	% Female	% Employed	
				Men	Women
Total Sweden Population as of 2017	10.120.242	5.038.000	49,8%	89,4%	84,5%
Population who are single parents with cohabiting children ages 0-17 as of 2013	261.308	205.506	79%	No Data	No Data
Extracted Sample	109.136	91.445	84%	88,8%	72,1%
Reference Group	102.803	86.484	84%	88,2%	73,5%
Divorcing Group	6.333	4.971	78%	89,4%	70,7%

Despite growing trends of shared custody of children between partners in Sweden (Statistics Sweden, 2014), here the registered reality shows that more children are registered as living with their mother than their father, as expected from previous research on Sweden (Jensen, 2009; Mulder & Malmberg, 2011). The ratio between male and female observations in this sample is roughly in line with the overall trend in the entire population of single parents (Statistics Sweden, 2013).

This sample captures significantly fewer family units than the total measured for 2013, because this sample requires that the family unit be classified as a single parent for all years 2008 – 2014. Family units that are not single parents for any of the years are excluded from the sample. Family units may lose their single parent status through a number of processes. For example, forming new relationships which enter the register, the child has a different registered address to the parent, or the child becomes 18 years of age.

The division of the sample between degrees of urbanisation is 15%/49%/36% for Rural, Urban, and Big City respectively. The sample also shows that male groups have a higher average personalised disposable income than their counterpart female groups. These differences between disposable income are smallest for Rural groups, and largest for Big City groups in both absolute kronor and percentage terms. In employment terms, the sampled males conform to the national employment rate. The employment rate among sampled women is significantly lower than the national female average, likely associated with single parent status. It is interesting that this difference in employment rate is large for women, but small for male single parents.

6.2 Hypotheses

Hypothesis 1: Divorcing and Non-Divorcing individuals have different mobility frequencies.

To evaluate the first hypothesis, all groups from the extracted data sample are sorted to form general divorcing and reference groups. Figure 1 shows that the divorcing group have higher frequencies of residential moves than the reference group in 2010, the year of divorce. Additionally, we can observe similar increase in 2009, the year preceding divorce. Comparing the average frequency of residential moves in the divorcing group to reference group around the time of divorce leads to the confirmation of the first hypothesis.

It is noted that Swedish courts normally require a ‘period for reconsideration’ lasting 6 – 12 months, if children are living with parents when a divorce application is filed (Sveriges Domstolar, 2018), except for certain cases (Regeringskansliet, 2013). Therefore, there is an expected likelihood that some parties will physically separate the year preceding the legal registration of divorce, and that this is captured on the register data in 2009. The literature reviewed addresses the period immediately before divorce from the perspective of deciding who effects separation and moves out of the matrimonial home. Some studies using register data also face this challenge of determining if mobility before registration is divorce-induced, while other studies measure the physical separation as the point of effecting the divorce to meet this challenge (Feijten, 2005; Feijten & van Ham, 2007; Mulder & Malmberg, 2011). In 2008, we can observe that the divorcing in 2010 group has a lower mobility rate than the reference group. This is to be expected because married households typically have lower mobility rates than divorced persons (Warner & Sharp, 2016).

Figure 1. Comparing the mobility of the divorcing in 2010 group to the reference group, by sorting all individuals into either divorcing or reference, regardless of gender and degree of urbanisation, with 95% confidence intervals¹

For the reference group, the frequency of residential moves is stable over time and does not exhibit any spikes in mobility. The reference group’s frequency of moves decreases gradually over time,

¹ Standard deviations for the purpose of calculating confidence intervals for combined groups, such as all divorcing groups, are derived from the summation of variances of the comprising groups such that:

$$\sigma_{combined} = \sqrt{\sigma_1^2 + \sigma_2^2 + \dots + \sigma_n^2}$$

which is interpreted to reflect the effects of the sample cohort ageing between 2008 and 2014. It is prudent to explain that the ageing of children is also an important factor: the literature reviewed identifies that new born children are typically destabilising for household residential mobility, whereas school age children are typically stabilising (Gambaro, Joshi, & Lupton, 2017; Long, 1972). While 7 years of ageing in the adult context is not expected to have a dramatic effect on mobility behaviour, 7 years of ageing for the children covers the period from birth to entering compulsory schooling (Swedish Institute, 2018). The register data used cannot identify births of any additional children in the single parent household. While Courgeau (1985) observed that the births of subsequent children after the first did not have a substantial effect on spatial mobility, it not clear in this modern Swedish context whether births of additional children into the household would be destabilising as new born children change the housing needs of households (Gambaro et al., 2017; Lee, 1889). Or, if the alternative theory holds that additional children would be a stabilising factor on household mobility through the cumulative effect of children (Long, 1972; Mulder & Malmberg, 2011).

Figure 1 also reveals the first insight into the decay of divorce-induced mobility. We can observe that in the years after the divorce, 2011 onwards, the divorcing group exhibits higher mobility than the reference group. This elevated mobility appears to decrease over time, whereby in 2014 the elevated state of mobility is much less and the divorcing group appears to intercept the reference group. The interception of the divorcing and reference group is conceptualised to represent the time at which the new altered housing trajectory is assumed and the immediate, mobility-inducing effects of divorce have decayed.

Hypothesis 2: Divorce-induced mobility has gendered outcomes, women move more frequently than men.

The second hypothesis concerns the gendered nature of mobility behaviour. By combining all female and male groups, Figure 2 shows that women are generally more unstable than men for all years observed.

Figure 2. Comparing mobility between genders with 95% confidence intervals. All individuals are grouped into gender categories regardless of divorcing or degree of urbanisation.

A better understanding of mobility behaviour can be developed by including divorce and gender together, as is shown in Figure 3. The consensus of literature reviewed indicated that women

experience more instability at the time of divorce than men do. Noting the deviation that the divorcing female group make compared to the reference female group in Figure 3, and comparing it to the size of the deviation made by the divorcing male group supports this argument. Considering the mobility behaviours of the reference groups, Figure 3 also shows that the new altered housing trajectory that is represented by the reference groups is significantly different between genders. We can observe that the reference female group has a higher mobility rate than the reference male group for all years observed. Moreover, these differences are significant as shown by the 95% confidence intervals. This observation is in line with the expected long-term effects of divorce. The literature reviewed indicated that the altered housing trajectories were different for women and men. Specifically, women remain at risk of exiting owner-occupation for longer post-divorce, while the risk of men moving out of owner-occupation lasts for a shorter time (Feijten, 2005; Mikolai & Kulu, 2018b). This argument translates into an observation that female groups are more unstable both at the time of divorce and over a longer period once on the new altered housing trajectory.

Figure 3 also gives the first indication that the decay of divorce-induced mobility has gendered outcomes. We can observe that the first year after divorce is registered, 2011, the divorcing male and reference male groups intercept. This is interpreted to mean that divorce-induced mobility has decayed one year after divorce. However, for divorcing females it is only in 2014, four years after divorce, that the group comes close to intercepting the reference female group. The 95% confidence intervals shown in Figure 3 indicate that before 2014, the mobility behaviour of the divorcing female group is significantly above the reference female group.

Figure 3. Comparing mobility between gender and divorce with 95% confidence intervals. The groups presented in this figure include all degrees of urbanisation, stratification and analysis by degree of urbanisation continues below.

We can therefore confirm the second hypothesis, divorce-induced mobility does differ significantly between genders, women move more frequently than men. We have also observed that there are gendered mobility differences in three distinct areas:

- Gendered differences in the new altered housing trajectory,
- Gendered differences in the immediate effects of divorce and the shock experienced by individuals as they separate from the matrimonial home,
- Gendered differences in the decay of divorce-induced mobility, the time taken for mobility to match the new altered housing trajectory.

Hypothesis 3: Increasing degree of urbanisation has an effect on residential mobility.

Although the literature reviewed identified many interesting facets of urbanisation and how it is connected to residential mobility, it was challenging to determine what the overall connection between increasing degrees of urbanisation and mobility behaviour would be. Figure 4 shows that increasing degrees of urbanisation appears to have a generally stabilising effect on mobility. We can observe that the frequencies of moves made in Big City municipalities are significantly lower than Urban and Rural. Additionally, we can observe that there is less disparity between the Urban and Rural groups in Figure 4, some years the groups overlap, though in later years observed the difference becomes more visible.

Figure 4. Comparing mobility between degrees of urbanisation with 95% confidence intervals. All individuals are grouped into degrees of urbanisation, regardless of gender or divorcing.

To deepen our understanding of urbanisation and how it is connected to mobility, we can attempt to differentiate urbanisation by divorce and gender. Figure 5 shows how the mobility behaviours differ across degree of urbanisation for the divorcing groups. Because the reference groups comprise such a large proportion of the total population, they are not shown separately from the overall population, as the graphs are not meaningfully different.

Figure 5. Comparing mobility between degrees of urbanisation for all divorcing groups combined, with 95% confidence intervals.

Two similar observations are noteworthy in Figure 5: Firstly, that the Big City groups, the highest degree of urbanisation, are significantly more stable than Urban and Rural groups. Secondly, the difference between Urban and Rural groups is much smaller and overlapping in some instances. These generalisations hold true regardless of divorcing or not.

Next we can consider urbanisation in the context of gender. Figure 6 shows what may be the most interesting finding of this study. Female groups exhibit the same differences due to degrees of urbanisation as previously observed. Increasing degrees of urbanisation is connected to lower frequency of moves, more urbanised regions appear connected to increased stability, while rural regions appear associated with instability. The largest difference is observed in the Big City degree of urbanisation, while Urban and Rural have a smaller difference.

However, Figure 6 highlights that for male group, no significant variation based on degree of urbanisation is observed. The three degrees of urbanisation are closely grouped together, overlapping for several years of observation. It is an interesting and unexpected finding that degree of urbanisation captures some kind of regional effect that impacts female mobility, but does not have a significant impact on male mobility.

Figure 6. Comparing mobility between degrees of urbanisation and gender with 95% confidence intervals. All individuals are combined regardless of divorcing or not.

To unpack and understand this finding further, we can examine this trend from the perspective of the divorcing groups, shown in Figure 7. Because the reference group has such a large effect on the combined population, the trend does not differ meaningfully from Figure 6, so a visualisation focussing only on reference groups is not shown. In Figure 7, we observe that these gendered findings hold true for the divorcing group. The same patterns can be observed: for female groups, Rural is associated with the highest frequency of moves while Big City is associated with the lowest. For male groups, the same trend is not observed and the degrees of urbanisation are clustered close together and overlapping in many parts for all years. This is a second level of observation to indicate that degree of urbanisation captures some regional effect that is significant to women, but not men, and this does not differ significantly due to divorcing in 2010.

Figure 7. Comparing mobility between gender & urbanisation, divorcing groups with 95% confidence intervals

The observations investigating the connection between urbanisation and mobility can also be linked to the three major findings for gender. Firstly, degree of urbanisation has gendered mobility outcomes for the new altered housing trajectory, apparently women are affected but men are not. Secondly, degree of urbanisation has gendered mobility outcomes for the immediate effects of divorce and the shock experienced by individuals when separating from the matrimonial home, apparently women are affected but men are not. With the exception of the male Big City group which exhibits increased instability at the time of divorce, which is the opposite of the effect for female groups. Finally, it is necessary to examine in detail the decay of divorce-induced mobility to determine how this is connected to degree of urbanisation and gender, leading to the fourth hypothesis.

Hypothesis 4. Decay of elevated residential mobility in divorcing groups is different across genders and degree of urbanisation.

To evaluate the decay of divorce-induced mobility, developing the understanding that was presented earlier in the gender observations, each divorcing group stratified by gender and degree of urbanisation will be compared to the corresponding reference group. Confidence intervals facilitate a three-tiered analysis. No overlapping of the confidence intervals indicates there is a significant difference between the divorcing and reference group and that the new altered housing trajectory has not been assumed. Intersection of the data points within the confidence intervals of the reference group indicates with some certainty that the new altered housing trajectory has been assumed. Some overlapping of the confidence intervals for the divorcing group with the reference group indicates there is a possible interception that is open to interpretation based on the surrounding data. Figure 8 shows all of the comparisons made, comparing male and female groups, across Rural, Urban, and Big City degrees of urbanisation.

Figure 8. Summary of decay time of divorce-induced mobility, stratified across gender and degree of urbanisation, with 95% confidence intervals. For all graphs, Y axis: Average moves per year, X axis: Years from divorce event (2010 = 0)

Immediately it is obvious that the earlier observation that males assume the new altered housing trajectory sooner after divorce than women do. It is unfortunate that this study was not able to observe a longer period of time post-divorce to capture the point where female groups assume the new housing trajectory. This would have facilitated better connection with existing literature on the long-term effects of divorce. Nevertheless, we also observe that the male Big City group exhibits increased mobility at the time of divorce and takes longer to assume the new altered housing trajectory in comparison to the other male groups. The same pattern is not observed among the female groups. In fact, instability at the time of divorce is lower for the female Big City group, compared to the other female groups.

Table 4. Two-way table summarising findings for decay times of divorce-induced mobility, measured in years after divorce event.

	Male		Female	
	Major Intercept	Some Overlap	Major Intercept	Some Overlap
Rural	+1, +2, +3, +4	+0	-	+2, +3, +4
Urban	+1, +2, +3, +4	-	+4	+2
Big City	+4	+1, +3	-	-

We can clearly observe from Figure 8 and Table 4 that the decay time of divorce-induced mobility has gendered outcomes. Divorce-induced mobility decays much faster for men than for women. Whether divorce-induced mobility decays differently across degrees of urbanisation is not as clear. Decay in Rural and Urban degrees of urbanisation behave mostly the same. For Big City however, we observe an increase in decay time for men, and no overlapping of confidence intervals for women. In addition, Big City groups exhibit opposite mobility behaviours between gender at the time of divorce, the male group is more unstable, while the female is more stable than usual. Clearly, there are underlying factors influencing mobility across degrees of urbanisation, however this study is unable to isolate and identify how these operate and effect differing mobility behaviours.

7. Discussion

It is somewhat unsurprising that the data observed in this study has led to findings of gendered mobility differences in three distinct areas:

- Gendered differences in the new altered housing trajectory,
- Gendered differences in the immediate effects of divorce and the shock experienced by individuals as they separate from the matrimonial home,
- Gendered differences in the decay of divorce-induced mobility, the time taken for mobility to match the new altered housing trajectory.

Both the immediate and long-term effects of divorce are well documented as presented in the literature reviewed, and it is clear through theory and previous empirical research that there are significant differences between genders. Therefore, it appears probable that there should be gendered differences in the time taken for divorce-induced mobility to decay, for many of the same reasons that have been recounted to produce gendered mobility differences in general. What is unexpected an interesting from the data observed in this study is the mobility behaviour connected between gender and degree of urbanisation:

- Gendered difference in the exposure to regional variation.

In the analysis of the third hypothesis, Figures 6 and 7 showed that women exhibited different mobility behaviour across degrees of urbanisation, while men did not. This may be interpreted as exposure to regional differences across Sweden. That is, whatever inequalities exist between municipalities operationalised into Rural, Urban, and Big City, are having a marked effect on mobility and housing trajectories of women, but not men.

What follows in this study is a discussion attempting to unpack and understand urbanisation in this regard; however, this gap in our understanding of residential mobility deserves further, dedicated research to address gendered mobility outcomes associated with regional inequalities.

This study's observations indicated that increasing degree of urbanisation has a stabilising effect on mobility for female groups. This could be a combination of factors in operation, for example increased density, availability of job and housing stock, and local amenities means that fewer residential moves would be required after divorce, as there is a greater possibility to find housing that suitably meets the needs of the household post-divorce (Mulder & Malmberg, 2011). Another idea to explain how urbanisation influences mobility behaviour could be that the greater proportion of rental housing stock in more urban Swedish municipalities may lessen the shock of moving out of the matrimonial home, because rental accommodation may be more accessible than owner-occupation to individuals with fewer resources.

It is possible that the degree of urbanisation is actually capturing elements of the housing market that are contributing to mobility differences. Similar as Feijten (2005) observed in the Netherlands, Sweden's municipalities containing large cities on average have the highest concentration of rental accommodation proportional to the total housing stock, while owner-occupation is more common in rural areas (Statistics Sweden, 2017). There is more variation in the proportion of rental stock in Sweden's Big City municipalities than rural municipalities as can be observed in Figure 9a.

The proportion of rental dwellings out of the total housing stock split into Rural, Urban, and Big City degrees of urbanisation is, 30%, 39% and 41% respectively. There appears a legitimate expectation that because of the higher proportion of rental housing stock available in more urbanised municipalities, that mobility should be higher in more urban areas. Yet, Sweden's largest cities are somewhat infamous for the extremely long waiting times required to acquire a rental contract. Areas of Malmö, Göteborg, and Stockholm have average rental queues of over three years. No formal data was available on the time taken to acquire a rental contract at municipal level to facilitate a regional comparison using the same definitions of Rural, Urban, and Big City municipalities. It is unclear how waiting times may have an impact on mobility across regions, but this may be conceptualised as increased moving costs due to the extra time investment required to find suitable housing (Mulder & Wagner, 2010). Moreover, macroeconomic factors, or structural connections (Coulter et al., 2015), such as a sluggish job market, or controls on rent setting can have suppressing effects on residential mobility (Forslund, 2015; Hardman & Ioannides, 1999). Upon reflection, the selected literature reviewed in the field of residential mobility, seldom incorporates research in economics and the housing market. Perhaps a greater connection between housing market research and residential mobility would glean a better understanding of urbanisation and regional inequalities in a residential mobility context.

Selected Summaray Statistics for Inter-Municipal Variations Across Sweden, Sorted Into Degrees of Unbaisation

Figure 9. Data from Statistics Sweden at municipal level is combined and agglomerated with the definitions for degrees of urbanisation from Tillväxtanalys. 9a. Distribution of proportions of rentals out of total municipal housing stocks. 9b. Distribution of number of rental dwellings per municipality. 9c. The number of 1 & 2 dwelling buildings sold in 2014 as a percentage of the total 1 & 2 building housing stock per municipality.

In addition to the composition of housing stock by tenure type, the depth of the housing market may also be a factor that has regional differences across degrees of urbanisation. Figures 9b and 9c show respectively the number of rental dwellings per municipality, and the volume of sales of 1 & 2 dwelling buildings per municipality as a percentage of 1 & 2 dwelling housing stock. In Figure 9b there are three data points that are obvious outliers within the Big City degree of urbanisation, and compared to the rest of Sweden. These points represent Stockholm, Göteborg, and Malmö, where it is obvious that the housing market is characteristically different from other municipalities.

A valid question therefore arises as to what extent the Big City degree of urbanisation is skewed by Stockholm, Göteborg, and Malmö. Given the significantly larger population in Sweden's largest cities, any variations in mobility behaviour that are unique to these cities may yield misleading results.

Figure 9c however, shows that despite the larger scale of the housing markets in Stockholm, Göteborg, and Malmö, the volume of sales of 1 & 2 dwelling buildings as a percent of that housing stock is in line with other Big City municipalities. This observation is in line with Feijten's (2005) finding that owner-occupiers in cities move more often than rural owner-occupiers. Given that more urbanised areas in Sweden have higher proportions of rental housing, and that owner-occupiers are more mobile, we would expect from a theoretical perspective that mobility would be higher in the Big City groups. The observations that urbanisation is negatively associated with female mobility behaviour and not associated with male mobility behaviour highlights that there must be a combination of factors in effect that include residential mobility behaviours, which this study cannot explain.

It is worth mentioning that for female groups, both divorcing and reference, there is a slight negative correlation between increasing degree of urbanisation and employment rate. Employment is not typically associated with residential instability (Warner & Sharp, 2016), it is therefore curious that Rural groups with highest female employment are the most unstable in this study. This observation may capture broader elements of the relative resources arguments presented in the literature review. For instance, if Rural female groups have accumulated less capital than Urban and Big City groups, they may be employed out of necessity, and are actually in a much more precarious financial state that is connected to increased residential mobility. The data extracted also shows that in raw terms, Rural groups have lowest disposable incomes, while Big City groups have the highest, potentially supporting this line of argumentation. There may be unobserved effects such as levels of support from the ex-partner, or state support that have some regional variance and therefore influence mobility behaviour (Falkingham et al., 2016). However, we can also observe that gendered differences in disposable income are lowest for Rural groups, and highest for Big City groups, which leads back to the interesting finding that there is no significant regional variance for male groups.

While this study cannot adequately determine what is producing regional mobility differences that are captured by the degree of urbanisation variable, this study does note that there appears to be a clear gendered outcome related to urbanisation. This finding is interesting both at an academic level, and at a practical urban planning level for municipalities and national actors. Forecasting housing demands and understanding mobility behaviour are important urban planning tasks that can be informed through research. Additionally, the gendered regional differences observed in this study could be important for national actors that are concerned with Sweden's rural development and gender equality goals (Statistics Sweden, 2016b).

This study cannot control for the age of individuals or their cohabiting children. In the event that there is some skewed distribution in age of adults or children, across gender or degree of urbanisation this would be expected to impact mobility behaviour. There is also a common notion suggesting that frequent residential mobility during childhood is detrimental to educational attainment and that frequent mobility informs later decisions and behaviours, which may be particularly interesting to Swedish institutional actors (Coulter et al., 2015).

Reflecting on the methodology of this study, the operationalisation of the new altered housing trajectory may have a gender bias. Given that the new altered housing trajectory is operationalised as a group of long-term divorced single parents with cohabiting children, and the duration of the long-term effects of divorce differs significantly between gender, this study could be improved by controlling for the length of divorcee status in the reference group. Feijten and van Ham (2010) noted that the long-term instability of divorce lasted up to five years for women. This study did not track the marital status of individuals before 2008, therefore there is a probability that the female reference group contains some individuals that divorced in 2008, 2007, etc., that are still suffering the increased instability associated with divorce in 2011, 2012, and so forth. This does not exclusively represent the new altered housing trajectory. However, for the male reference group, the long-term effects of divorce disappear much sooner. Even if a male individual in the reference group divorce as late as 2008, by 2010 they are probably 'back to normal' and exclusively reflecting the new altered housing trajectory. Therefore the design and operationalisation used in this study may be gender biased to some extent.

Similarly, drawing conclusions based on the intersection of data and confidence intervals may have elements of gender bias. While this practice is commonplace in analysis, drawing conclusions in this way is exposed to differences in the standard deviations of data. Due to the noticeably larger sample sizes of female groups compared to male groups in the data extracted, the calculated error terms are higher and much broader confidence intervals are generated for male groups, compared to the narrower confidence intervals for female groups. In this study, the male confidence intervals are larger than female confidence intervals by a factor of between a third, and a half. Therefore, the threshold for identifying interception is lower for males and more rigorous for females. Moreover, there is a systemic bias, however large or small, in this study using the specific data extracted, that produces earlier identification of interception for male groups and comparatively later identification of interception for female groups. In this study it is submitted that the effect of this bias is not substantial, because the bias in values of standard deviation are relatively small compared to the observed separation of divorcing and reference groups. However, perhaps improvements in the planning and design of this study could go some way to minimising or eliminating systemic gender biases.

8. Conclusions

The findings of this study are in line with the generally expected notions of gendered differences in residential mobility behaviour both at the time of divorce and in the long term. Women experience and exhibit higher instability than men at the time of separation and in the new altered housing trajectory that awaits post-divorce. This study's finding that divorce-induced mobility, or instability, also decays quicker for men and slower for women is somewhat unsurprising. This study provides confirmation that gendered mobility differences are still present and relevant in Sweden, despite improvements towards gender equality. Therefore, further effort and study is required to understand and mitigate gender inequality, and it is encouraging to see this topic is still prevalent in forthcoming research concerning residential mobility, see for example the *PartnerLife Project*.

The second contribution this study brings to the body of research concerns urbanisation. This study finds that degree of urbanisation is connected to mobility behaviour for women, but not for men. Urbanisation is a complex phenomenon, and this study reveals that whatever urban effect there may be is more likely an unknown combination of regional differences, housing market structure, or economic factors that are influencing mobility. This study cannot identify nor isolate the elements of urbanisation that appear to have gendered mobility outcomes, and suggests that further dedicated research addresses urbanisation and gendered mobility outcomes between regions.

Appendix 1. Discussion on the suitability of modelling standard deviation for agglomerated data related to the frequency of residential moves assuming individual mobility is a Boolean variable.

Collecting data is resource intensive, and not every researcher will have access to the resources required to utilise a database of individual register data. During an earlier stage of this study, an extraction from the LISA database was made that recorded only the mean frequency of residential moves per year, and the sample size. At that time, confidence intervals were required to analyse the interception of data points and determine the decay time of divorce-induced mobility. Because, standard deviation was not collected in this early stage, a model for standard deviation was created to facilitate an interim analysis. This discussion serves to reflect on the suitability of the model for standard deviation so that future researchers, who may for example be working with open data that does not supply standard deviations, could consider using such a model to facilitate their analysis.

$$\sigma = \sqrt{\frac{\sum(x - \mu)^2}{N}}$$

where:

σ = Standard deviation

x = An individual value

μ = Mean

N = Population Size

An attempt to model the standard deviations of each data point was made by imagining the data takes a Boolean form to produce the smallest theoretical standard deviation, where individuals in the sample make either 0, or 1 residential move per year.

where:

total moves, ' m ' = $N\mu$

$$\text{model } \sigma = \frac{\sqrt{m(1 - \mu)^2 + (N - m)(0 - \mu)^2}}{N}$$

expressing ' m ' in terms of $N\mu$ and simplifying yields:

$$\text{model } \sigma = \sqrt{\mu - \mu^2}$$

It is noted that the modelled standard deviation is simply related to the mean, such as that $\text{model } \sigma \rightarrow 0$ as $\mu \rightarrow 0$. Assuming the data takes on this shape effectively treats the data as a Bernoulli random variable and inherits the associated limitations. This assumption applies better to the control groups than to the divorcing groups. For the background population it seems unlikely that more than one residential move would be made in any given year under normal circumstances. When individuals experience a divorce however, individuals may make several household moves in a year due to the time sensitive, resource constrained, and necessary nature of the circumstances (Mulder & Wagner, 2010). Moreover, Feijten & van Ham (2010) note that up to five residential moves may be required before housing equilibrium is restored, there is a likelihood that a number of moves occur within a single year for divorcing households.

Confidence intervals are calculated for each data point using the modelled standard deviation.

Confidence intervals for any given data point, = $\mu \pm \text{'Error'}$

$$\text{Error} = z^* \frac{\sigma}{\sqrt{N}}$$

For confidence level 95%, $z^* = 1.96$

$$\text{Error} = 1.96 \frac{\sqrt{\mu - \mu^2}}{\sqrt{N}}$$

The confidence intervals calculated using the modelled standard deviation are products of the mean of each data point and the sample size of each group, such that $Error \rightarrow \infty$ as $N \rightarrow 0$, and $Error \rightarrow 0$ as $N \rightarrow \infty$. For the control groups, the large sample sizes reduce the value of the error when calculating the confidence intervals, compared to the divorcing groups which conversely have higher error terms due to a smaller sample size. Within each group, for every data point the value of the confidence interval is dependent on the mean where values closer to zero have smaller error values. The calculated confidence intervals are used to compare each divorcing group to its corresponding control group, as in Figure 8 of this study.

Because this model generates the theoretical minimum possible standard deviation, it systemically underestimates the actual standard deviation of the data sample collected. This underestimation is detailed in tables 5 and 6, which reveal that this model underestimates real standard deviations by factors approximately between 0,22% – 30%. There are therefore some instances where this model is very close to being correct and the individual data contained virtually only households making 0 or 1 residential move per year (see divorcing rural males).

Table 5. Differences between the modelled and actual standard deviations to 6 SF.

Kon	urbankod	divorcee10	2008	2009	2010	2011	2012	2013	2014
1	1	0	-0,045934	-0,029323	-0,036200	-0,020669	-0,016683	-0,009460	-0,015261
2	1	0	-0,088105	-0,083590	-0,077658	-0,066190	-0,058409	-0,053320	-0,050322
1	2	0	-0,033976	-0,038977	-0,034477	-0,025962	-0,018726	-0,023912	-0,018427
2	2	0	-0,083732	-0,073220	-0,066478	-0,048570	-0,053636	-0,048945	-0,046504
1	3	0	-0,032009	-0,029486	-0,025540	-0,031612	-0,027564	-0,025692	-0,018787
2	3	0	-0,066986	-0,067129	-0,054582	-0,040110	-0,037954	-0,037372	-0,039758
1	1	1	-0,042794	-0,016246	-0,061844	-0,000504	-0,018937	-0,064101	-0,000560
2	1	1	-0,078938	-0,110761	-0,120695	-0,053028	-0,064051	-0,064820	-0,034603
1	2	1	-0,010617	-0,067126	-0,043271	-0,025011	-0,010964	-0,022478	-0,032106
2	2	1	-0,112231	-0,103758	-0,103650	-0,049919	-0,033121	-0,057290	-0,031295
1	3	1	-0,099182	-0,041754	-0,094574	-0,023464	-0,063447	-0,039613	-0,018884
2	3	1	-0,098122	-0,107384	-0,098890	-0,057508	-0,044935	-0,038079	-0,041947

Table 6. The model's underestimation of the standard deviation in percentage terms.

Kon	urbankod	divorcee10	2008	2009	2010	2011	2012	2013	2014
1	1	0	14,29	10,33	12,96	8,26	7,13	3,86	6,49
2	1	0	19,62	19,02	17,61	16,25	15,20	14,00	13,57
1	2	0	10,58	12,49	11,42	9,52	7,23	9,26	7,55
2	2	0	18,87	16,93	15,54	12,74	14,46	13,56	13,30
1	3	0	9,53	9,86	8,68	12,27	11,77	10,81	7,93
2	3	0	16,83	17,25	14,62	12,47	12,17	12,37	13,16
1	1	1	14,38	5,83	18,42	0,22	8,10	25,64	0,22
2	1	1	19,96	22,42	24,37	11,90	15,74	16,15	8,86
1	2	1	3,95	20,35	12,58	9,07	4,22	9,16	12,70
2	2	1	26,27	21,11	21,06	12,38	8,63	14,72	8,85
1	3	1	30,92	11,39	24,24	8,24	21,55	14,61	7,99
2	3	1	23,69	23,40	20,75	16,07	12,88	11,67	12,77

Tables 5 and 6 also reveal that there is a gender difference in the underestimation of the standard deviation made by the model. Standard deviations for female groups are generally underestimated more than male groups. This actually gives the study further insight into the characteristics of the data extracted. Because underestimation of the standard deviation is directly connected to the extent the data deviates from a Boolean variable, higher underestimation is an indicator for more

extreme mobility. Male groups with generally low underestimation are more confirmative to a Boolean variable, making either 0 or 1 move per year. But female groups which generally have higher underestimations must therefore be comprised of individuals more often making 2, 3, 4, etc. residential moves per year, which is a sign that mobility is more unstable and erratic.

Of course, any claim of gender-based underestimation must be weighed against the differences in the means and the relative sizes of the standard deviations in question. However, this property may be useful in further unpacking and understanding the effects of urbanisation on male groups that had similar levels of mobility. We can identify from Tables 5 and 6 that there appears to be an association between increasing degrees of urbanisation and increasing underestimations of the standard deviation among male group. Given that the means of male groups does not differ greatly within the divorcing cohort and reference cohort, we can interpret increased underestimation to indicate individuals of the group deviate further from the Boolean property. As previously discussed, increased deviation from the Boolean property is a signifier of instability and more erratic mobility behaviour. This is especially interesting that male groups did not differ much in terms of the average number of moves made per year when stratified by degree of urbanisation, yet there is an argument that individual male mobility behaviour is more unstable as degree of urbanisation increases. Because the average number of moves made per year is significantly different for female groups stratified by degree of urbanisation, it is not possible to comment on whether a similar effect is also present for women.

Finally, it is possible to compare the interpretations of the graphs used to calculate the decay times of divorce-induced mobility between the real and modelled standard deviations. Figure 8 shows the real standard deviations being used to generate confidence intervals which then facilitate observing the interception of lines. Figures which use the modelled standard deviations are not shown, instead the interpretations are presented in Table 7 below.

Table 7. Comparing observations of decay times using real standard deviations and modelled standard deviations.

Observations based on real standard deviations					Observations based on modelled standard deviations				
	Male		Female			Male		Female	
	Major Intercept	Some Overlap	Major Intercept	Some Overlap		Major Intercept	Some Overlap	Major Intercept	Some Overlap
Rural	+1, +2, +3, +4	+0	-	+2, +3, +4	Rural	+1, +2, +3, +4	+0	-	+2, +3, +4
Urban	+1, +2, +3, +4	-	+4	+2	Urban	+1, +2, +3, +4	-	-	+2, +4
Big City	+4	+1, +3	-	-	Big City	+4	+1, +3	-	-

Table 7 shows that the conclusions of the study in calculating the decay time of divorce-induced mobility are mostly the same when changing between real and modelled standard deviations. The notable difference is for Urban females, who appear more distant from the new altered housing trajectory in the fourth year post-divorce as a result of narrower confidence intervals. This discussion suggests that this model for standard deviations would have been quite appropriate for a study of this kind, and that the findings did not dramatically change when substituting real standard deviations for modelled counterparts. Moreover, a comparison between the modelled and real standard deviations gives a deeper insight into the composition of agglomerated data, possibly revealing trends that would not necessarily be identified without the comparison of standard deviations to a theoretical model.

Appendix 2. List of Swedish municipalities classified by degree of urbanisation.

KN KOD	Municipality	Degree	KN KOD	Municipality	Degree	KN KOD	Municipality	Degree	KN KOD	Municipality	Degree
114	Upplands-Väsby	3	765	Älmhult	2	1441	Lerum	3	1983	Köping	2
115	Vallentuna	2	767	Markaryd	1	1442	Vårgårda	1	1984	Arboga	2
117	Österåker	3	780	Växjö	2	1443	Bollebygd	1	2021	Vansbro	1
120	Värmdö	2	781	Ljungby	2	1444	Grästorp	1	2023	Malung	1
123	Järfälla	3	821	Högsby	1	1445	Essunga	1	2026	Gagnef	1
125	Ekerö	2	834	Torsås	1	1446	Karlsborg	1	2029	Leksand	1
126	Huddinge	3	840	Mörbylånga	1	1447	Gullspång	1	2031	Rättvik	1
127	Botkyrka	3	860	Hultsfred	1	1452	Tranemo	1	2034	Orsa	1
128	Salem	3	861	Mönsterås	1	1460	Bengtstors	1	2039	Älvdalen	1
136	Haninge	3	862	Emmaboda	1	1461	Mellerud	1	2061	Smedjebacken	2
138	Tyresö	3	880	Kalmar	2	1462	Lilla Edet	1	2062	Mora	2
139	Upplands-Bro	3	881	Nybro	2	1463	Mark	1	2080	Falun	2
140	Nykvarn	2	882	Oskarshamn	2	1465	Svenljunga	1	2081	Borlänge	2
160	Täby	3	883	Västervik	2	1466	Herrljunga	1	2082	Säter	1
162	Danderyd	3	884	Vimmerby	2	1470	Vara	1	2083	Hedemora	2
163	Sollentuna	3	885	Borgholm	1	1471	Götene	1	2084	Avesta	2
180	Stockholm	3	980	Gotland	1	1472	Tibro	2	2085	Ludvika	2
181	Södertälje	3	1060	Olofström	2	1473	Töreboda	1	2101	Ockelbo	1
182	Nacka	3	1080	Karlskrona	2	1480	Göteborg	3	2104	Hofors	2
183	Sundbyberg	3	1081	Ronneby	1	1481	Möndal	3	2121	Ovanåker	1
184	Solna	3	1082	Karlshamn	2	1482	Kungälv	2	2132	Nordanstig	1
186	Lidingö	3	1083	Sölvesborg	1	1484	Lysekil	2	2161	Ljusdal	1
187	Vaxholm	2	1214	Svalöv	1	1485	Uddevalla	2	2180	Gävle	2
188	Norrköping	1	1230	Staffanstorps	3	1486	Strömstad	2	2181	Sandviken	2
191	Sigtuna	3	1231	Burlöv	3	1487	Vänersborg	2	2182	Söderhamn	1
192	Nynäshamn	2	1233	Vellinge	3	1488	Trollhättan	2	2183	Bollnäs	1
305	Håbo	2	1256	Östra Göinge	1	1489	Alingsås	2	2184	Hudiksvall	1
319	Älvkarleby	2	1257	Örkelljunga	1	1490	Borås	2	2260	Ånge	1
330	Knivsta	2	1260	Bjuv	1	1491	Ulricehamn	1	2262	Timrå	2
331	Heby	1	1261	Kävlinge	2	1492	Åmål	2	2280	Härnösand	2
360	Tierp	1	1262	Lomma	3	1493	Mariestad	2	2281	Sundsvall	2
380	Uppsala	2	1263	Svedala	2	1494	Lidköping	2	2282	Kramfors	1
381	Enköping	2	1264	Skurup	2	1495	Skara	2	2283	Sollefteå	1
382	Östhammar	1	1265	Sjöbo	1	1496	Skövde	2	2284	Örnsköldsvik	2
428	Vingåker	1	1266	Hörby	2	1497	Hjo	2	2303	Ragunda	1
461	Gnesta	2	1267	Höör	2	1498	Tidaholm	2	2305	Bräcke	1
480	Nyköping	2	1270	Tomelilla	2	1499	Falköping	2	2309	Krokoms	1
481	Oxelösund	2	1272	Bromölla	2	1715	Kil	2	2313	Strömsund	1
482	Flen	1	1273	Osby	2	1730	Eda	1	2321	Åre	1
483	Katrineholm	2	1275	Perstorp	2	1737	Torsby	1	2326	Berg	1
484	Eskilstuna	2	1276	Klippan	2	1760	Storfors	1	2361	Härjedalen	1
486	Strängnäs	1	1277	Åstorp	2	1761	Hammarö	2	2380	Östersund	2
488	Trosa	1	1278	Båstad	1	1762	Munkfors	1	2401	Nordmaling	1
509	Ödeshög	1	1280	Malmö	3	1763	Forshaga	2	2403	Bjurholm	1
512	Ydre	1	1281	Lund	3	1764	Grums	2	2404	Vindeln	1
513	Kinda	1	1282	Landskrona	2	1765	Ärjäng	1	2409	Robertfors	1
560	Boxholm	1	1283	Helsingborg	2	1766	Sunne	1	2417	Norsjö	1
561	Åtvidaberg	2	1284	Höganäs	1	1780	Karlstad	2	2418	Malå	1
562	Finspång	2	1285	Eslöv	2	1781	Kristinehamn	2	2421	Storuman	1
563	Valdemarsvik	1	1286	Ystad	2	1782	Filipstad	2	2422	Sorsele	1
580	Linköping	2	1287	Trelleborg	2	1783	Hagfors	1	2425	Dorotea	1
581	Norrköping	2	1290	Kristianstad	2	1784	Arvika	2	2460	Vännäs	1
582	Söderköping	2	1291	Simrishamn	1	1785	Säffle	2	2462	Vilhelmina	1
583	Motala	2	1292	Ängelholm	2	1814	Lekeberg	1	2463	Åsele	1
584	Vadstena	2	1293	Hässleholm	1	1860	Laxå	1	2480	Umeå	2
586	Mjölby	1	1315	Hylte	1	1861	Hallsberg	1	2481	Lycksele	2
604	Aneby	1	1380	Halmstad	2	1862	Degerfors	2	2482	Skellefteå	2
617	Gnosjö	1	1381	Laholm	1	1863	Hällefors	1	2505	Arvidsjaur	1
642	Mullsjö	2	1382	Falkenberg	2	1864	Ljusnarsberg	1	2506	Arjeplog	1
643	Habo	2	1383	Varberg	2	1880	Örebro	2	2510	Jokkmokk	1
662	Gislaved	1	1384	Kungsbacka	2	1881	Kumla	2	2513	Överkalix	1
665	Vaggeryd	1	1401	Härryda	2	1882	Askersund	1	2514	Kalix	2
680	Jönköping	2	1402	Partille	3	1883	Karlskoga	2	2518	Övertorneå	1
682	Nässjö	2	1407	Öckerö	2	1884	Nora	2	2521	Pajala	1
683	Värnamo	2	1415	Stenungsund	2	1885	Lindesberg	1	2523	Gällivare	2
684	Sävsjö	1	1419	Tjörn	1	1904	Skinnskatteberg	1	2560	Älvsbyn	1
685	Vetlanda	2	1421	Orust	1	1907	Surahammar	2	2580	Luleå	2
686	Eksjö	2	1427	Sotenäs	1	1960	Kungsör	2	2581	Piteå	2
687	Tranås	2	1430	Munkedal	1	1961	Hallstahammar	2	2582	Boden	2
760	Uppvidinge	1	1435	Tanum	1	1962	Norberg	1	2583	Haparanda	2
761	Lessebo	1	1438	Dals-Ed	1	1980	Västerås	2	2584	Kiruna	2
763	Tingsryd	1	1439	Färgelanda	1	1981	Sala	2			
764	Alvesta	1	1440	Äle	1	1982	Fagersta	2			

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Tenant and Residential Mobility

Chaired by Helena Bohman

Economic analysis of a large public tenant relocation

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Abstract

The Swedish government continue to relocate entire public authorities or their subdivisions from the central locations in Stockholm to suburban areas and smaller urban areas within Sweden. Examples include Swedish Customs Authority, Swedish Agency for Accessible Media, The Swedish Social Insurance Inspectorate, Swedish Work Environment Authority, Swedish Board for Accreditation and Conformity Assessment, Swedish Transport Administration, Swedish Enforcement Authority, ect.¹ Expectation is that decentralization will bring many benefits to the sustainable development of smaller urban areas in Sweden. One more reason behind this relocation is extremely high rent levels for office premises in central locations in Stockholm.² As a result, a large economic effect in terms of rental costs savings is expected.

At the same time these kind of relocation is associated with some negative social effects for employees and a number of problems related to practical implementation of this process. For example, sometimes it is difficult to find existing office premises of required size in a proposed location, and a new building is to be constructed together with a land plot acquisition. Rent level for new premises are often higher than market rent level on existing ones. Property market experiences booms and busts that affect market rents in different ways. Moreover, these effects might be lagged in time. It is difficult to justify market rent levels for larger tenants for rent negotiation purposes in case if there is a lack of tenants of similar size in suburban areas and it is difficult to find comparable properties of a similar type. All this implies high level of uncertainty that should be properly evaluated and embedded into this type of economic analysis.

Existing research lacks studies that focus on analysis of this type of relocation from the economic perspective. This include estimation of future market rent levels, vacancies, discount rate and other economic indicators. In this paper we use a case study of a large tenant relocation from central location in Stockholm to suburban areas and develop a model that might be used for this type of analysis in practice. As a result of this case study we provide recommendations regarding expected market rent levels with regard to location, costs, property value, risks and optimal time for rental contract.

Key words: decentralization, relocation, public tenants, market rents

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¹ <https://www.svt.se/nyheter/inrikes/fler-statliga-tjanster-flyttar-fran-stockholm-regeringen-haller-presstraff>

² JLL (2019) Nordic Outlook. Spring 2019.

Tenant voice – as strong as it gets. Exit, voice and loyalty in housing renovation

Bo Bengtsson and Helena Bohman

Abstract (150 words)

This article applies Hirschmans' concepts exit, voice and loyalty to a Swedish case of housing renovation in an estate with comparatively strong tenants. Renovations can be considered as shocks or critical junctures to an existing tenant-landlord relation, and therefore expose power relations on the housing market. Renovation processes are complex both technically and socially, and our study indicates that the exit, voice and loyalty framework is a useful tool for analysing such processes. In the case studied, tenants were not able to affect the renovation process per se, but tenant voice did affect the outcome in other respects. We argue that this strong tenant group represents an extreme 'most likely' case, making it possible to test the limits of tenant influence.

Keywords (5-6)

Exit, voice, loyalty, housing, renovation, tenants

Work in progress

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Rural boys, urban girls? – Internal Migration and the Gendered Labour Market in Sweden

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Abstract

The labour market in the new ‘service and knowledge-oriented society’ based on digitalisation is skilled-biased and routine-biased. This means that innovation, as previous innovations, favours skills, but also leads to routine based work to become automatized. In this paper we analyse the new labour market from a gendered labour market perspective. The new jobs arise in the city. Historically, there has been a surplus of women in urban areas and a deficit of women in rural areas in Sweden. The new labour market seems to increase these differences. By using longitudinal data from Statistics Sweden and descriptive statistics, we find that after the turn of the new millennium, women move with a more clear purpose than men: they move to gain career opportunities. Women move more often from unemployment to employment, than men. Furthermore, they move more often than men do to start studying.

Keywords: digitalization, service and knowledge-oriented society, skill-biased technological change, routine-biased technological change, gendered labour market.

JEL codes: J60, N34

Introduction: A surplus of rural men

Most European countries today experience a surplus of men in the rural areas. The Nordic countries have faced this situation for some time, but for the fast-growing Baltic states as well as some Central Eastern European countries this is a new situation. The Nordic countries – Iceland, Norway, Sweden, Finland and Denmark – all show high surpluses of men on the countryside, but also countries like Slovenia, Estonia, Bulgaria and Romania show a surplus of rural men 2017. For most countries, the rural gender gap has increased over the last decade (Eurostat).

It is well known that women move earlier than men do, which specifically creates a skewed female deficit in age span 20-35 in many rural areas (Johansson, 2016). Sweden faces a similar situation to that of many other countries, but the difference is that Sweden went from a deficit to a surplus of rural men already in the 1920s (Statistics Sweden, 1969).

Although the depopulation of women in rural areas is not a new phenomenon, it is well known that the characteristics of internal migration have shifted over time (Lundholm 2007). The 1960s saw an increase of in-migration to the cities and urban areas, while this trend was reverse in the 1970s. In addition, in the 1990s internal migration of the younger adults to the metropolitan areas and other cities increased because of the expansion of higher education.

The objective of our paper is to investigate whether determinants of internal migration from rural to urban areas, and whether the characteristics of migrants have changed since the 1990s. Our approach is quantitative. We employ data from the *Longitudinal integration database for health insurance and labour market studies* (LISA) managed by Statistics Sweden, and investigate how the characteristics of rural migrants have changed between 1990 and 2014. So far, in this paper we will use descriptive statistics to analyse whether our explanatory variables change in magnitude during this period, but when developing this paper we will employ multinomial regressions.

During 1990–2014, Sweden experienced structural change. Following Schumpeterian theory (see e.g., Schön 2009, 2010), crises may be markers for new structural cycles. Two major crises can divide the recent Swedish economic history: the ECU-crises around 1992–1993 and the Great Recession around 2007–2008. For example, after the crises in the beginning of the 1990s, productivity increased dramatically and skills and education levelled up. This may connect to the increase in education during this period. We know that the expansion of higher

education in the 1990s induced a shift of internal migrants towards the younger population. However, motives to migrate are complex. Some scholars have noticed a shift from job-related reasons to other reasons, because an increased geographical segmentation of the labour market leaves little opportunity to move elsewhere and find equivalent jobs. Thus, to our data we put the following research questions:

- Which changes in characteristics among internal migrants can we acknowledge over the period? Are there changes concerning gender, age, education?
- What role have structural change played? Has the move into the ‘service and knowledge-oriented society’ had any effects on internal migration?

Theoretical Approaches: A Changing Labour Market in times of the Fourth Industrial Revolution

There is today a vast amount of research that point out how the labour market is changing due to structural change (see e.g., Berger & Frey, 2016; Håkansson & Nilsson 2019; McDowell, 2003). As Berger and Frey (2016) point out; today’s digitalised era – what we can call the ‘the new service and knowledge-oriented society’ or ‘the Fourth Industrial Revolution’ – can be characterized by skill-biased technological change (SBTC), routine-biased technological change (RBTC), and capital-biased technological change (CBTC). These different kinds of biases are not new for the digitalisation era, but have covered all technical innovation previously. SBTC and CBTC leads to increased compensation for skills and capital, which leads to increased inequality. RBTC tells what kind of tasks machines can replace. Thus, technical innovation leads to an increased demand for skills. Women have since long, dominated higher education.

This development has led to a polarisation of the labour market (Berger & Frey, 2016; Eurofound, 2014). Linda McDowell (2009) uses the dichotomization in “high-tech” and “high-touch” jobs to describe the differentiation of high-skilled and low-skilled labour market. High-tech jobs are those in high-quality service production, for example in finance and information and communications technology (ICT), whereas high-touch jobs can be defined as low skilled, generic and customer-oriented. The high-touch jobs increase in number because they serve the new high-tech employed that have higher wages and therefore higher alternative costs when it comes to, for example, cooking and cleaning. Further, high-touch

jobs cannot be atomised and substituted by robots. In the past, women have numerically dominated these low-wage service jobs, and the occupations have been gender coded as female work (McDowell, 2009).

The new digital economy gains from centralisation and agglomerations, which can be explained by 1) knowledge spillovers 2) skilled cities and 3) creative cities. The idea of knowledge spillovers consider skills as externalities. Skills needs to be uphold by meeting and discussing with other skilled people. Knowledge is a fresh product, and to stay on the forefront it is necessary to meet and discuss with other people on the forefront. SBTC means that skills gain, and the cities have a higher rate of high-educated people. The idea of skilled cities derives from the idea of path dependency (see e.g. Pierson 2004). According to Berger and Frey (2016) skilled cities gained from the computer revolution of the 1980s, and these cities had an advantage in the digitalisation of the 2000s. The concept of creative cities follows Florida (2014) and Krätke (2010). Creative people tend to move to cities (regions) with high-quality amenities that are open to diversity.

From this we can formulate the following hypothesis: Because women are more educated than men and because the high-touch jobs are female coded, we can expect more women than men to move from rural areas to urban.

Previous research

There is a vast amount of studies on the surplus of men in rural areas. One example is the major EU project under ESPON – Selective Migration and Unbalanced Sex Ratio in Rural Regions (SEMIGRA). The project investigated the unbalanced sex ratio in Europe among the younger age groups. The report point out that a shortage of young women have negative impacts on demographic development, the labour force and on the social cohesion of rural communities. One major result of the project is that regions characterized by a massive deficit of women are predominantly rural and are mainly located in Eastern Germany. According to the authors, this result is linked to the German Reunification. However, several other regions also experience this situation, and apparently, they cannot be a part of the same explanation. A moderate deficit of young women concern many rural areas, not at least areas in Sweden, Finland, Iceland, Poland, the Baltic Countries, Spain and regions in South East Europe (SEE). The study point out that the imbalanced sex ratio is highly dependent of national context, for example in regards to culture and institutions. Still, they claim that this ratio can show societal

changes when it comes to women's positions and the transition to a post-industrial knowledge- and service based economy (Wiest et al. 2013).

Johansson (2016) investigate the deficit of young women in Västernorrland and compares it to the Stockholm region. According to Johansson (2016), net out-migration only exist in the age group 18–24. In the age groups 25–29 and 30–34, the opposite takes place. According to Johansson, this indicates that the out-migration of women is connected to women's demand for education and 'women-friendly' labour markets, but later when establishing a family, there seems to be a return-migration. However, one should remember that internal migration is far more extensive among the young. This means that when summing up over the age groups, the female deficit in the rural areas remains, even though there are return-migration.

Edlund (2005) discusses the surplus of rural men from a perspective where the reason for women to move to the city is to get married to men that are high-earners. In Edmund's model women consider both the labour market as well as the marriage market as reasons for moving to the city, and this runs for both high-skilled as well as low-skilled women. Cities offer women not only a better job market, but also a better marriage market, i.e., men with higher incomes. Edlund claims that her results supports this conclusion. However, there are several weaknesses in this study. First, her model carries strong assumptions on, for example, that the unskilled man is indifferent between marriage and bachelorhood. This leads to that men only have the labour market to consider, while women have to consider both the labour market as well as the marriage market. Further, Edlund uses cross-sectional data over one single year on macro level using share of men and share of women in municipalities. This rather imprecise method has a problem with causality. Thirdly, the explanation do not explain why the gap is widening over time. If, there were a surplus of women in the city and these women did not get married, in the next period, according to rational choice, we would expect to approach equilibrium in the next period.

Where have all the jobs gone?

When we study the development of jobs in Sweden over the last 30 years, at least two tendencies are obvious. Firstly, the rationalisation in the 1990s was extensive. Secondly, employment data show centralization tendencies both during the 1990s and in the new millennium. During the 1990s, both urban as well as rural municipalities lost jobs, but the rural municipalities lost the most. Close to 20 per cent of all jobs disappeared in rural

municipalities between 1990 and 2003, while around 1 per cent was lost in urban municipalities. During the period 2004–2017 employment picked up, due to the international boom. The Great Recession around 2008–2010, never hit Sweden as hard as several other European countries. However, centralization is obvious. In urban municipalities employment increased with close to 30 per cent, in rural municipalities with 4.5 per cent.

Table 1: Change in employment in urban and rural municipalities.

	1990-2003	2004-2017
Urban (cat. 1,2)	-1.03%	28.78%
Rural (cat.8,9)	-18.93%	4.44%

Source: Statistics Sweden

Following Berger and Frey (2016), structural change explains the increase of jobs in the city. When the number of jobs increase more in the urban areas than in the rural areas, we would expect migration from rural to urban. The question is however: Who moves – male or females? Further, can we see more labour related migration, for example migration from unemployment to employment or studies?

Data

The data in this paper derives from the LISA database (Longitudinal integration database for health insurance and labour market studies), managed by Statistics Sweden. LISA holds annual registers since 1990 and includes all individuals 16 years of age and older that were registered in Sweden as of December 31 for each year. The data derives from different registers such as Försäkringskassan (Swedish Social Insurance Agency) and the taxation registry. LISA contains data regarding residence, education, salaries, employment and more. Due to the Swedish system of personal numbers, which is individual and unique for each individual, the yearly observations can be linked over time, constituting a longitudinal database. The longitudinal data gives possibilities to observe individuals year t_0 and their change in status to the next year, year t_1 . We observed the status, for example, for the individuals 1990 and compared it with their status 1991. If they lived in a rural municipality 1990 and in an urban municipality 1991, we treat them as “movers”. We treated labour market status (from unemployed to employed) or a move due to studies, the same way.

Our geographical analysis derive from municipalities. Sweden has today (2019) 290 municipalities. For the classification of municipalities into rural-urban we use the *Swedish Association of Local Authorities and Regions*’ classification. They use a classification of nine groups; from metropolitan (Stockholm, Gothenburg, Malmö), commuting municipalities, towns, minor towns, to rural and rural with tourism (see SKL, 2019).

Results

Table 2 and 3 show descriptive statistics regarding characteristics of rural out-migrants.¹

Table 2. Descriptive statistics rural out-migrants, divided by gender.

	Year	Women			Men		
		1991	2001	2011	1991	2001	2011
Average age (years)	All (including non-migrants)	48.8	49.8	49.3	46.1	47.3	47.2
	Rural => rural	36.6	38.3	38.1	37.3	38.2	38.5
	Rural => small towns	35.3	36	36.1	35.2	36	35.9
	Rural => Bigger cities	32.4	32.9	33.1	32.9	32.7	33
	Rural => Metropolitan	30.4	30.3	31.9	31.7	31.4	33.1
Share with at least 3 years of tertiary education (% of each category)	All (including non-migrants)	16.2	24.2	31.8	16.2	22	26.2
	Rural => rural	13.4	19.3	23.4	11.9	13.4	15.
	Rural => small towns	15.7	19.5	25.2	18.6	17.7	18.4
	Rural => Big cities	17.7	21.8	26	23.3	20.4	21.1
	Rural => Metropolitan	16.1	26	33.6	18.7	25.9	29.3
Share who started to study (% of each category)	All (including non-migrants)	1.4	2.03	2.1	0.97	1.2	1.3
	Rural => rural	1.2	2.8	3.4	0.9	1.9	1.7
	Rural => small towns	3.2	8.3	7.1	2.7	4	7
	Rural => bigger Cities	8.7	19.3	16.5	6.1	15	12.4
	Rural => metropolitan	5.7	11.7	11.2	4.9	9.2	7.5
Share who started to study in the 20-24 cohort (% of each category)	All (including non-migrants)	4.9	8.4	7.7	3.9	6.3	5.2
	Rural => rural	1.5	5	4.8	1.8	4.9	2.6
	Rural => small towns	4.8	16.7	13.2	4.9	9.8	14.3
	Rural => bigger cities	13.2	31	24.8	12.5	26.1	19.4
	Rural => metropolitan	8.9	16.3	16.8	7.7	15	10.7
Share who went from unemployed to employed (% of each category)	All (including non-migrants)	14.4	5.2	4.2	12.9	4.3	4.7
	Rural => rural	3.7	11.1	9.4	4.	10.	9.5
	Rural => small towns	9.8	11.8	9.2	8.3	9.5	9.7
	Rural => bigger cities	10.8	12.4	9.12	10.6	11.5	11.1
	Rural => metropolitan	11.4	19.3	16.6	11	16.2	14.8

Source: Statistics Sweden, LISA database and authors’ calculations. Rural => rural are intermunicipal migrants who migrated from a rural municipality to a rural municipality. Rural => small towns are intermunicipal migrants who migrated from rural municipalities to smaller cities and/or commuting municipalities surrounding a smaller city. Rural => big cities are intermunicipal migrants who migrated from rural municipalities to bigger cities and/or commuting municipalities surrounding a bigger city. Rural => big cities are intermunicipal migrants who migrated from rural municipalities to the metropolitan cities (Stockholm, Gothenburg, Malmö) and/or commuting municipalities surrounding a metropolitan city.

¹ For a comparison, we also present numbers for the total population in the category we call “All”.

Table 2 indicate an increased importance of job-related and study-related reasons to migrate in 2011 compared to 1991, and this pattern is more pronounced for women than for men.

When it comes to age, a general reflection is: the more urban destination, the younger migrants. Further, women are younger than men are when moving from rural to metropolitan, but this do not seem to be the case for other migration.

The share of female rural out-migrants (from rural to metropolitan) with at least three years of tertiary, increased from about 16 to 34 percent 1991-2011. The corresponding increase for men was from 18 to about 29 percent. Thus, an increasing share of rural out-migrants enjoy a university education when they move, but the increase is larger for women than for men. However, we should remember that an increasing share of the population enjoy three years of tertiary education. Results indicate an increasing wedge between women and men. As expected, job-related reasons to migrate are more strongly associated with moving to the metropolitan areas, while study-related reasons have a stronger relationship with moving to the bigger cities. The explanation of this is that many universities are located in the bigger cities (e.g. Lund, Uppsala, Växjö, Östersund).

Table 3 shows that the share of women in all rural out-migrants increased between 1991 and 2011, and the increase started after the millennium shift. After the millennium shift, the number of women leaving rural areas exceed the number of men, which is primarily caused by a higher tendency among young women (20-24 years of age) to move to the metropolitan areas.

Table 3. Share of women among rural out-migrants

	1991		2001		2011	
	All migrants	20-24 cohort	All migrants	20-24 cohort	All migrants	20-24 cohort
Rural => rural	50.7	50.7	50.3	50.3	51.6	53.6
Rural => small towns	49.9	50.7	49.6	52.4	50.4	51.2
Rural => bigger cities	49.2	51.9	50.6	52.5	51.3	55
Rural =>metropolitan	49.9	55.8	50.9	54.6	51.9	58.1

Source: Statistics Sweden, LISA database and authors' calculations

Conclusions

Our hypothesis was that the new service and knowledge-oriented society would lead to increased in-migration to urban areas and metropolitans, specifically of women. The new digitalised economy can be considered as skilled-biased. If so, skills and education would be valued higher, which drives wages. As our descriptive statistics show, the share of the population with at least three years tertiary education has increased considerably, but it has increased the most for women. Due to this, women move more than men do, but women also seem to be more dedicated than men: women move to get employed more often than men, and they move to study. Has the move into the ‘service and knowledge-oriented society’ had any effects on internal migration? If we consider the new labour market to be skilled-biased, we may conclude that there may seem to be an effect of the ‘service and knowledge-oriented society’, but we need more research to find out more about the jobs men and women move to in the cities.

Further, a vast amount of research has lately showed that a polarization of the labour market is taking place. The new low-skill jobs has been considered to include more of personal services like hotel & restaurant work, retail or care. In Western Europe, these kinds of tasks has historically been considered as female work. So far, we have not undertaken any investigation of low-skill work in the new service sector, and our descriptive statistics do not indicate any results in relation to the low-skill labour market. However, when we develop this article into a full article, using a multinominal regression model, we will also consider the type of jobs people find in their destination municipality. When doing so, we will be able to find out what kinds of jobs men and women move to.

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Sustainable Renovation

: Proposing a method to solve the increasing number of vacant houses in Kita-Senju, Tokyo

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There are several urban problems due to the declining birthrate and aging of the society in Japan but an increasing number of vacant houses is of particular importance among them. The increasing number of vacant houses creates not only vulnerability to the community due to the declining population but also vulnerability to fire and earthquakes caused by aged wooden buildings, thus emphasizes regional disaster prevention issues. For that reason, in Japan, not only the public administration but also the private sector has started striving to solve the issues associated with the vacant houses. We can actually identify many activities related to the promotion of utilizing vacant houses in Japan. The target area of this study is an area around Kita-Senju Station in Adachi ward, Tokyo in Japan. In the Kita-Senju Station area, despite being in the center of Tokyo Metropolis, an increase number of vacant houses is often pointed as a severe urban problem. Generally, urban scholars in Japan consider that the increase of the number of vacant houses is induced by a declining population due to the declining birthrate as well as aging population. However, because of a convenient location of the area as a public-transport hub, Kita-Senju Station area has constantly been attracting new residents, thus, another reason shall be considered as a driving factor of the increasing vacant houses. Accordingly, this paper first analyzes the underlying mechanism of the increasing number of vacant houses in the Kita-Senju Station area. Then, by taking practical examples of the utilization (renovation) of some vacant houses within this area, this paper aims at proposing a method to solve the issue of vacant houses.

Keywords: Vacant houses; Renovation; Wooden housing congested area;

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1. Introduction

Japan has many urban problems due to the low birth rate and aging population after the high economic growth period started in the 1970s, but one of the major problems is the increasing number of vacant houses among them. According to the latest statistical survey, there are 8.2 million vacant houses in Japan nationwide in 2013, and the vacant house rate is 13.5% (Ministry of Internal Affairs and Communications "2013 Housing and Land Statistics Survey"). The number of vacant houses is projected to reach at 21.5 million units by 2030, and the vacant house rate is predicted to reach at 30%. Even in Tokyo, which is the largest megacity in Japan, the vacant house rate has recorded 11.1%, and it is certain that the rate continues to rise in the coming decades. Fig.1 displays a typical example of the vacant houses in Tokyo.

The increase in vacant houses is not only dilution of the community due to population decline, but also attributed to the fact that their main architectural materials is wood, which is vulnerable to fire and earthquake disasters especially when the buildings

Fig. 1 Example of Vacant house in Tokyo

aged. This proposes the issue of disaster prevention. Therefore, in Japan, the administration and the private sector have started to tackle with this issue, and we can observe a number of activities to promote the utilization of vacant houses across Japan. As government's efforts, the Act on Measures against Special Measures for Unoccupied Houses, etc. was formulated in 2014. This made it possible for the government to forcibly remove unoccupied houses if it is necessary. The private sector is actively expanding various businesses because companies consider the increasing number of vacant houses as a new business opportunity.

This paper strives to analyze the major causal mechanism of the vacant houses and to clarify effective methods of utilizing the vacant houses in a practical perspective. I analyze the mechanism of increase of vacant houses in the Senju area in Adachi ward, Tokyo. At the center of this Senju area occupied by Kita-Senju Station that has an average ridership of 1.5 million per day. Even though there are public and commercial facilities such as big shopping mall, libraries, and an university within a walking distance from the station, the area shows a high rate of vacant houses. This situation is further accentuated by taking consideration that the proximity of the Senju area to the CBD of Tokyo. I shall focus on an eastern part of the Senju area as a case study site, and analyze why the area currently experiences the increasing number of vacant houses despite such a preferable location for real estate developers, residents, and industries.

Fig. 2 Location of Adachi ward

Another objective of this paper is to present a solution to the problem of vacant houses by giving examples of vacant-house utilization (renovation), which can be considered as an effective measure against the issue.

2.Target Area and Method

Adachi ward located in the northern part of Tokyo (Fig.2). The ward has 6.9 hundred thousand and is situated at the northernmost tip of 23 wards. At the southernmost tip of Adachi ward, there is the Senju area. The area is situated in-between the Arakawa River and the Sumida River. In the Senju area, Kita-Senju Station, which is one of the largest hub stations in Japan, occupies the central part of the Senju area. The main method of this paper is a combination of qualitative and quantitative methods. In order to gather empirical materials, I conducted several interviews with landlords of actual vacant houses and local real estate agents. I also performed a field work in the area. As a professional architect, I have been working for renovating the vacant houses in the area more than 7years, so I believe that my experience can be an empirical foundation to propose a method of utilizing vacant houses.

3.High rate of vacant houses in central Tokyo

3-1. Contradiction in vacant house

The Senju area is very convenient location to live thanks to its proximity to Kita-Senju Station, and the is basically considered as an attractive city ("a town I want to live" so to speak) in recent years, and real estate land prices keep increasing year by year. On the other hand, although the land price of the Senju area tends to rise, the rate of vacant houses shows the highest number in Adachi-ku. There are areas whose

Fig. 3 The rate map of Vacant house in Adachi ward

rate of vacant houses exceeds 10%. This situation clearly indicates that the area has a contradiction that there are a number of houses (land plots) that are not effectively utilized *despite* the residential as well as commercial potential that the area has. Why does this contradiction happen? I argue that there are two major reasons: (1) a “untouched site” problem in areas with dense wooden houses, and (2) owner of vacant houses.

3-2. Reason 1 Untouched sites in the Moku-Mitsu areas

Moku-Mitsu areas (Moku: wood, Mitsu: densely in Japanese) refer to areas where wooden houses are concentrated around the outer periphery of central Tokyo. Fig 4 is a map showing the range of the Moku-Mitsu areas in Tokyo. Historically speaking, the Moku-Mitsu areas were formed (or more accurately, *remain*) because of relatively small damages by air raids during the period of World War II. The Senju area is one of such Moku-Mitsu areas. Due to very dense concentration of the buildings, potential damages caused by earthquakes and fire would be more serious than other areas.

The Senju area is one of the representative examples of this Moku-Mitsu areas. In the area, not only buildings are vulnerable to disasters, but also there is a problem in the urban-street structure such as very narrow and intricate street networks. This street structure causes so called “untouched site” problem meaning that a real estate property has no access to a

Fig. 4 Densely populated wooden houses in Tokyo

proper roads. This is one of major factors of the increasing number of vacant houses in the area. According to the Building Standard Law in Japan, in order to receive a construction permission, a land plot should touch a road with at least 2-m width. Buildings build before this law are allowed to use their land as it is although the land is “untouched site”. However, if a landowner wants to demolish the old house on his/her “untouched site” land and rebuild a new one, then the law orders to create a proper access to a road, which is not easy. There are about 370 “untouched site” buildings in the eastern part of the Senju area. These housing stocks are certainly problematic due to their inability to be renewed while deterioration progresses. This resulted in relatively lower real estate values of these houses, and this situation prevents vacant houses from entering to the real estate market. Fig.5 shows the “untouched site” houses on the eastern part of the Senju area.

3-3. Reason 2 Owner of the vacant houses

Several issues in the land ownership and inheritance of it also causes the problem of the vacant houses. These issues also make it difficult for the vacant houses to enter to the real estate market. According to the survey of the vacant houses in the Senju area, the following three issues were detected.

Fig. 5 Location of untouched site

(1) It is necessary to change the ownership of a property to a heir by the death of the real estate owner. However, if the owner passed away without changing the ownership, the situation of the ownership becomes complicated, and the property could be treated as a “unknown owner” property. Once the ownership became not properly registered, then buying and selling, leasing the property becomes almost impossible.

(2) Even if there is a heir of a vacant house, there are cases that, for some reasons, it is difficult to contact with the heir and the necessary ownership change will not be managed properly. One common case is that the heir lives in a very distant place from the place the vacant house is located, and he/she considers almost no relation to the property. This situation also causes similar problems as (1), and prevents the vacant house from getting into the real estate market.

(3) There are cases that “wealthy” property owners of the vacant houses are reluctant to rent their properties because the expected costs and time for the renting procedure could be larger than what they can gain from the renting.

3-4. Quick summary: Unique of the Senju vacant house issue compared to the vacant houses in local cities

In local cities in Japan, the tendency of the increasing number of vacant houses is observed due mainly to decreasing demands for housing stock associated with the population decline. On the other hand, the Senju area is close to the major hub station, there are many commercial visitors, the attractiveness of the area increases, and there is also a large number of tenants. Thus, the increasing number of the vacant houses in the Senju area should be explained by other factors rather than a population-decrease mechanism. As we have seen, the factors behind the increase of vacant houses in the central areas of megacity like Tokyo are (a) “untouched site” and relevant regulations prevent the vacant houses from (re)entering to the real estate market; and (b) the complexity of the ownership relationship caused by, for example, an inappropriate inheritance of the property when the owner became old, and resulted difficulty of land re-use (update).

4. Various teaching to reuse the Vacant houses.

4-1. Significance of renovation of vacant houses

As an approach to vacant house in the Moku-Mitsu areas, for example, one of the effective methods is the project to combine multiple plots (after discarding vacant houses on the plots) into a single large plot and using the plot for an advanced use. On the other hand, a method of utilizing the vacant houses introduced in this paper orients to *renovation* of the vacant houses. The reason of prioritizing the renovation is that “combining multiple sites” in the above-mentioned project is extremely infeasible because land plots are already divided finely in dense areas such as the Senju area. In addition, the Moku-Mitsu areas are considered as valuable cultural resources that preserve retro townscapes of the old age of Japan. Accordingly, this is preferable to preserve such townscapes. In addition, as I have explained, a number of vacant houses in the Senju area are designated as “untouched sit” thus unable to scrap and build unless clearing the road accessibility issue, which is also not so feasible. This situation very much increases an advantage of the renovation method. For these reasons, the renovation of wooden houses is considered as an attractive option to solve the problem of vacant houses because of the feasibility and the capability to preserve the old townscapes.

4-2. Vacant house utilization by the private sector

There are two major approaches to the vacant house issue by the private sector.

(1) *Altering functionality*: There are a number of methods to change the functionality of the property from the residential use to another one, which are the one of the major approaches to utilize the vacant houses. In the Senju area, there are renovations from residences to ateliers for creators, and changes in usage to the offices of young entrepreneurs.

(2) Renovation companies rent the building as vacant-houses condition (no value such as an untouched site) at a cheap rent. They invest in the renovation cost and subleases the buildings. They benefit from the difference between the rent (expense) to the landlord and the sublet (income). Then, they will proceed with this profit to recover the renovation costs. This method

is not expensive for landlords, and the feasibility of utilizing vacant homes is relatively high.

4-3. The project to promote the utilization of vacant houses

Because the vacant house issue is an important social problem, the Adachi ward government also implements countermeasures to the issue, and carry out the both methods of utilization promotion and retirement of vacant houses. The Adachi ward started to the project to promote the utilization of vacant houses in 2018 in collaboration with the private sector. The strength of forming the public-private partnership is that negotiation with property owners of vacant houses to attain an approval of utilization of their properties will be smoother because of the trust from the residents to the administration, and the sharing of the information owned by the administration with the private sector of the collaborators.

In cooperation with the architect design firm that I operate, I established a platform to promote the utilization of the vacant houses, including people and teams working in the Senju area. By organizing events with various experts in different fields (tax accountant, restaurant owner, real estate agent, architect, publisher, etc.) in the vacant houses in the area, it offers opportunities to inform the residents about the importance and significance of utilizing vacant houses.

4-4. Possibilities of urban design for utilization of the vacant houses

As shown, in the Senju area, several vacant houses have been renovated by the private sector and civil-private partnership efforts. Artists and entrepreneurs moved in and continue their activities here. There is a widespread impact induced by the utilization projects/efforts such as revitalizing effects on a neighborhood community in the area or regional events in vacant houses. In addition, as a ripple effect, it is expected that the more number of property owners who want to rent their vacant houses will increase and corresponding, the people who are eager to move in renovated vacant houses will increase. Revitalizing the community and expanding the understanding about the utilization, could be an effective means to ameliorate the vacant house problem.

5. Conclusion

For utilization of vacant houses, the following three are important.

- (1) Grasp the characteristics of vacant houses in each area.
- (2) Utilization of vacant houses is realized by various actors.
- (3) Importance of public-private partnership to realize continuous utilization.

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Fig. 6 Distribution of utilization vacant houses in this area

Valuation

Chaired by;
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Energy efficiency and its capitalization on house prices in space and time: omitted variable bias or a real effect?

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Abstract

Energy performance certificate (EPC) are important in the effort to reach the EU's emission reduction target. However, result indicates that it is a criterion of minor importance. What does EPC mean? Your house will be banded from A-G for energy efficiency, where A is the most efficient. Higher grade will mean lower energy costs per square meter living area and thus it is reasonable to assume that buyers are willing to pay more for a house with grade A compared to grade G, everything else equal. The main objective in the present paper is therefore to analyze if EPC is capitalized into house prices. This is not the first study that investigate this research question in Europe or Sweden. Our main contribution is that we are relaxing the implicit assumption about constant implicit price for EPC. Earlier literature shows mixed results from no price premium to a substantial price premium. Here we are investigating the Swedish housing market for single-family houses over the period 2013-2018. We are using standard hedonic price model approach, but we are also testing for potential spatial dependency. The main hypothesis that will be tested is that a positive capitalization varies in time and across space. The preliminary results show that the capitalization is positive and that the capitalization is larger in the north of Sweden than in the south. The results also show that the capitalization has not changed over time. Moreover, the results also reveal one potential problem, namely, omitted variable bias. A high energy grade is also a proxy for high quality which is problematic. Excluding a good measure of quality will create a positive omitted variable bias, that is, estimated premiums will be too high. Therefore, we are estimating our models in age cohorts in order to minimizing the problem. The approach is implicit assuming that the quality heterogeneity is lower within age cohorts. Newer houses show no premium for EPC grade A.

Keywords: Energy performance certificate (EPC), hedonic model, capitalization, omitted variable bias

The Impact of Leasehold Status on Apartment Price

Carl Caesar¹, Herman Donner² and Fredrik Kopsch³

Abstract:

Based upon cooperative apartments sold in Stockholm, Sweden during the period of 2012 to mid-2014, we find that leasehold status (meaning that the cooperative does not own the land that the apartment building occupies) has a small but statistically significant impact on price of -2.3% when controlling for location and apartment characteristics in a hedonic model. At the time of renegotiation (i.e. a lease duration of 0), leasehold depreciates price with 4.2%. We also apply propensity score matching, which results in slightly larger negative impact on the price being estimated. As current lease payments are covered by monthly fees that are to be paid to the cooperative, a negative effect on price should mostly be attributed to an increased uncertainty of future levels of monthly fees. We therefore extend the existing literature by examining the impact on price by the remaining leasehold term whilst still controlling for monthly fees. Consistent with our hypothesis, apartment prices are found to increase with 0.22% for each additional year that remains until renegotiation of the lease contract.

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1. Introduction

Since Hayek's (1945) seminal paper on *the use of knowledge in society*, efficiency through the price system has been a central idea in economics. Nevertheless, the ability of prices to reflect all available information sometimes comes into question. The housing market, where households typically make their single-largest investment, is no exception. Of course, since households tend to finance housing by incurring debt, the decision of buying a home is of great importance to the financial wellbeing of both the individual household and society at large. A potentially large problem occurs if buyers lack information about the rights and obligations associated with buying a home. The aim of this paper is twofold: we want to study the effect on apartment prices by one such piece of information, namely leasehold status, and the uncertainty that is associated with it. In Stockholm, it has been common practice that housing cooperatives are built on leasehold land from the municipality, rather than freehold land, something that historically has lowered the costs through land rent subsidies. This has helped when cooperatives were formed, and in addition, has given the municipality greater influence over land use (Caesar and Kopsch, 2018). It has also been an ideological issue, with leasehold contracts (in contrast to sales of land) being more common during periods of left-wing governance of the municipality.

Up until now, ground lease rents have been set at low levels, with small increases at renegotiations. This system has however begun to come into question, as the municipality of Stockholm has a stated aim of charging market level rents in leasehold agreements. Although problematic to estimate (as there are few or no comparable market rents to observe), this has led to substantial increases of ground lease rents. Although having a somewhat different legal framework, cooperative ownership is present in countries such as the U.S., Canada, Germany, Finland and Sweden. In sum, this form of ownership implies buying a share of a housing cooperative, which in turn gives the owner the right to live in an apartment. Housing cooperatives carry debt and have contractual rights and obligations towards the tenants and third parties. The housing cooperative is also responsible for all structural repairs and maintenance of the property, this includes things such as roofing, landscaping of common areas and trash removal. The housing cooperative finances these expenses through the monthly fees.

Notable is that cooperative ownership is the only type of owner-occupied apartments in Sweden⁴. Consequently, one would expect high levels of knowledge about this form of tenure among market participants. Recent media coverage has however highlighted that informational problems do persist, as buyers' lack knowledge to properly analyze the finances of the housing cooperative. One such example being that recently converted cooperatives (previously being rental apartments) do not set their monthly fees (necessary to cover running costs and future expenditures) at sufficient levels (Donner and Kopsch, 2017). Another example, and the focus of the current paper, concerns the question of housing cooperatives owning or renting their land. This piece of information can affect prices for two reasons. First, any parcel of land may be represented as a bundle of ownership rights. For a leasehold, only a part of these ownership rights may convey to the lessee. This means that the price should, all else equal, be lower for an apartment in cooperative on a leasehold. Second, since ground lease rents are renegotiated over time, there is a portion of uncertainty as to how future rents will be decided. A larger portion of uncertainty will, all else equal, result in a lower price.

The aim of this current paper is to both study the effect of leasehold on apartment price, but in addition add to this, a perhaps more important perspective of uncertainty. Since the political ambition in Stockholm has moved towards more market oriented ground rents, we see a possibility to study the effects of uncertainty on prices, and as a result of that answer a wider question of information and efficiency on housing markets. A short institutional clarification is necessary. Leasehold agreements imply two different types of contract durations. The first concerns the leasehold agreement, and the second concerns specific details of the leasehold agreement, most notably the ground lease rent. A leasehold agreement with the municipality of Stockholm is typically (with few exceptions) valid for a duration of 60 years. After this the municipality has the possibility to terminate the leasehold agreement, if they opt to not doing so, the agreement is prolonged with 40 years. Termination of leasehold agreements for land used for housing is uncommon, to not say non-existent. During these periods of which the leasehold agreement is in place (60 or 40 years) the terms may be renegotiated. Renegotiation typically occurs every ten years (with a few exceptions of older leasehold agreement allowing 20 years between renegotiation). This implies that ground lease rents can be renegotiated every ten years, and with increasing land values during the past decades, this

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⁴ In 2009, the possibility to build condominiums was introduced in Sweden. There has however been limited construction of such apartments, whose total number is less than 1000 in Sweden.

has meant increasing ground lease rents with ten year intervals. A previously unanswered question in relation to leasehold status is: how does contract duration affect prices?

The remainder of this paper is structured as follows; section 2 provides a literature review, section 3 describes the data, section 4 covers the methodology and results. Section 5 concludes.

2. Literature Review

Two strands of literature are of interest for the current paper. First there is the literature on land values. This strand of literature contains questions that have interested economists for centuries, with early works developed by Ricardo (1821) and von Thünen (1826). Much of the literature on land values, as in the early works, is focused on location. In a seminal contribution on bid rents, Alonso (1964), among other results, show a trade-off between input factors of production. Where von Thünen (1826) assumed the mix of non-land and land input factors of production was fixed, Alonso (1964) allows these to vary. The resulting models better explain the structure of cities that we can observe, at central locations, where land is more valuable, capital is traded for land and we observe higher structures. On the contrary, at the periphery of cities, where land values are low, we observe low rise construction. This first strand of literature largely ties into the second important strand of literature for this current paper, the one focused on leasehold status. As discussed in the introduction of this paper, from a political perspective, leasehold has been used as a tool to keep land costs low for residential construction, with the aim of a greater social mix in residential areas. However, this has never been combined with any restrictions aimed towards which social demography has been built for. Therefore, there are no obvious reasons to expect any underlying differences, for example with respect to quality, between houses originally built on a leasehold compared to freehold. Leasehold has also been a tool to steer away from the most profitable land use, e.g. office space, in favor of housing at some central locations. In a recent paper, Tyvimaa et al. (2015) study the price effect of leasehold status on apartment prices in Helsinki, Finland. The authors attempt to study both the price effect of leasehold status on apartment prices, but in addition also attempt to estimate the uncertainty effect of leasehold status. They find a significant price effect of leasehold status of roughly 5% when controlling for other attributes using the hedonic approach. When it comes to the uncertainty effects data limitations only allow the authors to study the average effects on price of apartments on leaseholds before and after an announcement made in 2007 stating potential large future increases in fees. The findings indicate that this increase in uncertainty helps explain part of the discount for apartments on leaseholds. Several other papers have estimated the price effect of leasehold status, either as a direct aim, or as one of the control variables included in hedonic modelling when studying some other relationship. Janssen (2003) studies the effect of leasehold status on the price of income property in Stockholm, Sweden. Over a three-year period of study, Janssen does however not find evidence suggesting that market values leasehold positively nor negatively. Irumba (2015) studies

the value of leasehold status on residential property in Kampala, Uganda. Using hedonic modelling, and data on newly constructed dwellings for 2011 an estimate of 23% price premium is found. This is interesting, as we will see later the expected value of a leasehold is lesser than a freehold. However, as is argued by Irumba (2015), institutional settings play a key role. The price premium found for leasehold in Kampala may be explained by the lack of institutions and regulations providing necessary information of land value, this implies that the value to the lessee, comes at a cost to the lessor. Such lessor and lessee perspectives are developed and explained by Mandell (2002).

This current paper builds on the work by Tyvimaa et al. (2015). Where their analysis falls short due to data limitations on leasehold contracts, our database allows us to study the effects of leasehold duration, as this information is available for all apartments in our dataset. Which means we can study the effects of uncertainty without the use of proxy variables, and instead use the direct and precise measure of remaining contract duration.

3. The model

The model in this paper largely follows that of Tyvimaa et al. (2015), with some alterations to account for one of the primary questions to be answered herein, namely, how price is affected the closer in time to the date of renegotiation of the lease contract we are. Before the model is introduced, a crucial assumption needs to be stated; namely that households are risk-averse. Although risk preferences tend to vary between individuals and households (see Pålsson, 1996), they are commonly viewed as being risk-averse. To begin with we want to establish the differences in values, and expected transaction price, that a leasehold implies compared to a freehold. The value of a freehold can be represented as the sum of the ownership interests in both the building, and the land:

$$V_{FS}^{Free} = V_{FB} + V_{FL} \quad (1)$$

Where V_{FS}^{Free} is the total value of a freehold, V_{FB} is the freehold value of the building and V_{FL} is the freehold value of the land upon which the building is constructed. The difference between a freehold and a leasehold is that the value of the land is split between the lessor and the lessee, such that:

$$V_{FS}^{Lease} = V_{FB} + V_{LL} + V_{LF} \quad (2)$$

Where V_{FS}^{Lease} is the total value of the leasehold, V_{LL} is the value of the land to the lessee and V_{LF} is the value of the land to the lessor. Since $V_{LL} + V_{LF} \leq V_{FL}$ it follows that the value of the land to the lessee of owning a house or an apartment on a leasehold (V_{LL}) is less than owning a house or an apartment on a freehold (V_{FL}). Furthermore, we can represent the price of a dwelling as:

$$Price = f(x, z, v) \text{ where } v = \begin{cases} V_{FL} & \text{if freehold} \\ V_{LL} & \text{if leasehold} \end{cases} \quad (3)$$

where x is a vector of dwelling specific attributes and z is a vector of locational attributes. Since we have established that $V_{FL} > V_{LL}$ and we know that $\partial Price / \partial v > 0$ it follows that the price of a dwelling on a freehold should be higher than the price of dwelling on a leasehold.

In addition, we are with this present study interested in analyzing the effect on price that remaining contract time has on price. For this we need to expand the value of the leasehold to the lessee in order to study its

components. For simplicity, we will here consider an economy consisting of two contract periods over a number of time periods. Contract period one spans over time periods 1 through n , and contract period two spans over time periods $n+1$ through N . The value of the land to the lessee can then be stated as:

$$V_{LL}^t = \left[\sum_{t=1}^n \left(\frac{R_m^1 - R_c^1}{(1 + r_h)^t} \right) + \sum_{t=n+1}^N \left(\frac{R_m^2 - R_c^2}{(1 + r_h)^t} \right) \right] \quad (4)$$

Where V_{LL}^t is the value of the land to lessee in time period t , or the beginning of the first contract period. R_m^1 and R_m^2 are the market values of the land in both contract periods. In reality, market values will of course differ between all time periods, but here we are simplifying to only allowing the market value to differ between contract periods. This assumption makes calculations much less cumbersome but has no implication for the point we're making. R_c^1 and R_c^2 are the leasehold fees to paid by the lessee to the lessor in both contract periods. r_h is a discount rate. At the beginning of the first contract period, neither R_m^2 nor R_c^2 are known. There are certain types of decision rules to be considered with regards to how the fee (R_c) is to be set. As mentioned, the common practice in Stockholm up to date has been to increase fees with relatively small amounts in renegotiations. This is however changing and now the common practice is that the fee should in some way be based on market values of the land. For equation 4 this would mean that, while R_c^1 could have been set without taking R_m^1 into account, the expectation of R_c^2 can now be expressed as something like:

$$E(R_c^2) = f(R_m^2) \quad (5)$$

That is, the expectation of the negotiated fee is some function of the market value realized in the second contract period. What happens then as we draw closer to the end of the first contract period? We can update equation 4 to the following time period, then we get:

$$V_{LL}^{t+1} = \left[\sum_{t=1}^n \left(\frac{R_m^1 - R_c^1}{(1 + r_h)^t} \right) + \sum_{t=n+1}^N \left(\frac{R_m^2 - R_c^2}{(1 + r_h)^t} \right) \right] \quad (6)$$

Where V_{LL}^{t+1} is the value of the land to the lessee in the second-time period of the first contract period. We are interested in what happens to the value as we approach the end of the first contract period. More precise, we are interested in the relation between V_{LL}^t and V_{LL}^{t+1} . It will be easy to see this relation if we assume there to be no uncertainty with regards to R_m^2 . Furthermore, we assume a more precise decision rule than that given by equation 5, namely that $R_c^2 = R_m^2$, and that this is known to all agents on the market. It is easy to see then that the second expressions of both equation 4 and equation 6 becomes zero. What becomes interesting then is the relationship between R_m^1 and R_c^1 . On a booming market, $R_m^1 > R_c^1$, that is, the fee paid by the lessee to the lessor can be lower than the market value. On a bust market, the opposite relation can hold, the fee paid by the lessee to the lessor could then be greater than the market value, if the values on the bust market drop enough. Of course, current fees can be lower or higher than market values for other reasons than the booming or bust markets. We can summarize this with:

$$V_{LL}^{t+1} \begin{cases} (<) \\ (=) \\ (>) \end{cases} V_{LL}^t \text{ if } R_m^1 \begin{cases} (>) \\ (=) \\ (<) \end{cases} R_c^1 \quad (7)$$

The same results would hold even if we do not assume such a strict decision rule in renegotiation such as $R_c^2 = R_m^2$. In equation 3 we described the relation of the value of the land to the lessee and the expected transaction price of the dwelling. We established that $\partial Price / \partial V_{LL} > 0$. This would mean, that on a booming housing market, such as the one we have observed in Stockholm during the past two decades, the effect on price while approaching the end of the contract period for a leasehold would be:

$$Price^t = f(x, z, V_{LL}^t) > Price^{t+1} = f(x, z, V_{LL}^{t+1}) \quad (8)$$

That is, as we approach the date of renegotiation on a booming market, the price of the dwelling will increase less rapidly than for a freehold dwelling. Here, the assumption of risk-averse households becomes crucial, as risk-aversion is one of the driving forces (together with the discount rate) that explains the price difference in relation to contract length.

4. Data

Data with transactions of cooperative apartments sold through real estate agents in the inner city of Stockholm, Sweden, during the period of 2012 to mid-2014 has been provided from the company *Valueguard* that constructs real estate indices. This results in 36,912 and have very high market coverage, in addition to also being rich with property characteristics typically used in hedonic models that explain property price. However, this data does not include information regarding the cooperative to which an apartment belongs. Although a very important aspect when buying an apartment in Sweden, cooperative information is typically not included in transaction data. We resolved this issue by matching each observation to its housing cooperative through address information. This was done by the company *Hitta Brf* that specializes in compiling data on Swedish housing cooperatives. Finally, information about whether an apartment is in a building that is located on leasehold land is needed. This was enabled by a report by *Sveriges Radio* (the government owned radio broadcaster) that provided a list of all housing cooperatives with properties on leasehold land owned by the municipality of Stockholm. This gives a dataset with a binary variable indicating if an apartment is located on leasehold land.

To extend on the dynamics of how leasehold is capitalized in price by buyers, information about the annual leasehold fee that is to be paid to the municipality and the date for renewal of the annual leasehold fee has been added to the dataset. This information has been collected through the online tool provided by the company *Datscha* that provides real estate market information.

After exclusion of observations in neighborhoods without any leasehold apartments, the final dataset consists of 22,673 transactions in 2,897 distinct housing cooperatives, of which 2,617 observations are in 246 housing cooperatives with leasehold status. Summary statistics with property characteristics for the two sub-groups of apartments are shown in table 1. The samples deviate in terms of mean size, no. of rooms, floor and age – as leasehold apartments are larger, with a greater number of rooms as well as being newer. Also, prices vary, with higher prices for leasehold apartments, which is consistent with the differences in characteristics. That monthly fees that are to be paid to the housing cooperatives are higher in leasehold apartments is a likely consequence of such cooperatives having the financial burden of paying the leasehold

fee. Somewhat higher monthly fees are however to be expected, as the fee is determined by the fraction of the housing cooperative than an apartment occupies, therefore increasing with apartment size.

Table 1 – Summary Statistics of Cooperative Apartment Transactions Spanning 2012 to Mid-2014 (Mean Values with Standard Deviations in Parenthesis).

	Non-Leasehold	Leasehold
No. Obs.	20,056	2,617
Sale Price (SEK)	3,718,465 (1,881,035)	3,861,853*** (1,564,782)
Living area (sqm)	59.2 (28.7)	68.7*** (25.7)
No. of Rooms	2.13 (1.02)	2.55*** (1.02)
Monthly Fee (SEK)	2737.7 (1280.9)	3581.2*** (1402.8)
Elevator (1/0)	.7634 (.4249)	.8356*** (.3706)
Balcony (1/0)	.0844 (.2780)	.0871 (.2820)
Floor	2.26 (2.35)	2.45*** (2.46)
Age	78.1 (38.7)	49.3*** (44.2)

SEK = Swedish Crowns

* Two-sample t test of difference in means (as compared to the full sample) is significant at the 10% level.

** Two-sample t test of difference in means (as compared to the full sample) is significant at the 5% level.

*** Two-sample t test of difference in means (as compared to the full sample) is significant at the 1% level.

The geographical distribution between leasehold and non-leasehold apartments is however similar between the groups.

5. Methodology and Results

5.1 Hedonic Modelling

To test leasehold status impact on price of leaseholds status, a hedonic model as defined by Rosen (1974) is applied. Following customary procedure in housing research, the dependent variable is in its natural logarithm. This therefore yields a linear regression model in which the price of a given apartment i is a function of X which is a matrix of apartment characteristics that theoretically should influence price, in addition to leasehold (D_i) status which we expect to negatively influence price. We can reformulate (8) into a regression model which is given by (9):

$$Price_i = e^{X_i\beta + \delta_1 D_i + \varepsilon_i} \quad (9)$$

As the uncertainty associated with leasehold status is influenced by the remaining time left before renegotiation of the leasehold fee, a second model in which this relationship is captured. This model adds an interaction variable of a variable that indicates the time until renegotiation for each leasehold apartment ($(t - \tau)_i$). This therefore yields the model given by (10):

$$Price_i = e^{X_i\beta + \delta_1 D_i + \delta_2 D_i(t - \tau)_i + \varepsilon_i} \quad (10)$$

Given that uncertainty regarding future cash flows are discounted to present value, the expected result of the second model is that price increases with time until renegotiation, or stated differently, the negative impact of leasehold status decreases with increased certainty regarding future cash flows. This variable is the time between the date of sale and the expiration date on the current leasehold contract. If a housing cooperative has several leaseholds (which is possible when a housing cooperative consists of several properties), the expiration date is the average of those contract expiration dates. Although estimated in days, this duration is converted to years to simplify interpretation.

The results of the regression models are presented in table 2. In the first model, all variables show their expected signs. In addition to variables capturing apartment characteristics and leasehold status, binary variables that indicate the quarter of sale and parish are included as controls for time and location.

Noteworthy is that price increases with age, which is to be expected for those familiar with the property market in Stockholm where apartments in old properties typically sell at a premium. As in the first model, age^2 is not statistically significant.

Focusing on the variables of interest, the first model yields results that leasehold status depreciates price by 2.3% and that this impact is statistically different from zero. In the second model, the impact is larger, indicating a depreciation of 4.2%. As the second model includes an interaction variable for the duration of the leasehold contract, the impact should be interpreted as the depreciation on price when the leasehold duration is 0, i.e. at the time of renegotiation. Keeping in mind that monthly fees are controlled for, this negative capitalization corresponds to the uncertainty associated with leasehold status. Most notably, the risk that leasehold fees might increase in the future. This relationship between uncertainty and leasehold status is further explored in the second model. In this model, it is found that price increases with time until renegotiation and that this effect is statistically different from zero. This effect is in line with our hypothesis, it is however found to be very small, with price increasing with .22% for each additional year until renegotiation. An apartment with 15 years remaining on the lease contract will therefore sell at a 3.3% higher price compared to an apartment with a lapsing lease contract.

In model 3, we allow for a non-linear effect of duration until renegotiation of the leasehold contract. The results indicate that as the leasehold contract draws to an end, and renegotiation of contract terms (most importantly the ground lease rent to be paid) approaches, the price of a dwelling on a leasehold deviates more from an equal apartment on a freehold, and we find a negative effect i.e. the positive impact of a longer leasehold contract is diminishing and has a bigger impact on price when the time of renegotiation is close.

Table 2 – Regression Results. The Dependent Variable is the Natural Logarithm of Sale Price. T-values are shown in parenthesis below the Coefficients.

Variable	Model 1	Model 2	Model 3
Leasehold (1/0)	-.0228218 (-6.86)	-.0418811 (-4.57)	-.1197654 (-5.74)
Leasehold Duration (Years)		.002213 (2.23)	.0231851 (4.40)
Leasehold Duration ² (Years ²)			-.0012378 (-3.98)
Monthly Fee (SEK)	-.000024 (-9.01)	-.0000241 (-9.02)	-.0000239 (-8.96)
Living Area (sqm)	.0120232 (53.08)	.0120279 (53.02)	.0120186 (52.97)
No. of Rooms	.070396 (16.31)	.0704225 (16.31)	.0705577 (16.34)
Floor	.0132315 (27.18)	.0132084 (27.11)	.013265 (27.18)
Age	.0012826 (11.45)	.0012724 (11.28)	.001287 (11.38)
Age ²	-1.04e-06 (-1.71)	-1.01e-06 (-1.66)	-1.04e-06 (-1.70)
Elevator	.0312442 (12.30)	.0311408 (12.25)	.0309429 (12.19)
Balcony	-.0100095 (-2.86)	-.0099798 (-2.85)	-.010085 (-2.88)

No. of Obs.	22,673	22,673	22,673
R ²	0.8758	0.8759	0.8759

Binary variables indicating the quarter of transaction and binary variables indicating the location (parish) are suppressed from the output to save space.

The estimated effects of leasehold status are presented graphically in figure 1. The effect of leasehold, depending on the model estimated, is depicted as a comparison to an apartment on a freehold. The price effect of an apartment on a leasehold receives a price discount, regardless of the model used to estimate the price effect. Recall that the typical leasehold agreement admits to adjustments with respect to the ground lease rent every tenth year. For apartments located on a leasehold with a long outstanding duration of the contract (five or more years) the estimated price effect does not differ dramatically depending on the model used to estimate the discount. The large difference can be observed when remaining contract length, duration of contract, is modelled assuming a non-linear relationship. The discount increases rapidly as the date of renegotiation approaches. This is consistent with households being risk-averse, and cannot simply be explained solely by the discount factor of future expected ground lease rents. Furthermore, previous studies aimed at estimating the price effect of leasehold status, have failed to account for the contract duration, which seemingly plays a crucial role in explaining the discount.

Figure 1. Estimated effects on price of leasehold and contract duration compared (as percentage) to freehold for models 1 through 3.

5.2 Propensity Score Matching

A primary concern is that leasehold status is not randomly distributed across apartments, therefore causing a bias in our estimates if leasehold status is endogenously related to apartment characteristics that impact price. A way of controlling for this type confounding factors is Propensity Score Matching as proposed by Rosenbaum and Rubin (1983). This implies that we through probit regression estimate the probability of an apartment having leasehold status, given apartment location and characteristics (this regression is shown in table 3). This is formalized by (11):

$$p(X) \equiv \Pr(D = 1 | X) = E(D|X), \quad (11)$$

with $D = (0,1)$ denoting leasehold status and X being a vector of apartment characteristics. To estimate the effect of leasehold status on price, we assume that an apartment having leasehold status is independent of potential prices, given the covariates X . This is expressed in (12):

$$Y(0), Y(1) \perp D \quad (12)$$

with $Y(1)$ denoting the outcome for treated observations and $Y(0)$ for control observations and $\perp$ signifying independence. This assumption of exogenous assignment to some type of treatment is that of *unconfoundedness* (Rosenbaum and Rubin, 1983). An additional assumption is that of *common support* that ensures that apartment characteristics do not perfectly predict leasehold status. Consequently, the probability of an apartment having leasehold status is bound between zero and one as seen in (13):

$$0 < \Pr(D = 1 | X) < 1 \quad (13)$$

The effect of leasehold status on price is referred to as the average treatment effect on the treated (ATT) and is a counterfactual outcome that is estimated by comparing prices of apartments with leasehold status to prices of non-leasehold apartments. The ATT is given by (14):

$$ATT = E(\tau | D = 1) = E[Y(1)|D = 1] - E[Y(0)|D = 1], \quad (14)$$

with τ denoting the effect of leasehold status. To estimate the ATT, we apply three matching schemes: (1) matching each leasehold observation with its non-leasehold closest match on propensity scores; (2) matching each leasehold observation with its four non-leasehold closest matches on propensity scores; and (3) kernel matching, meaning that leasehold apartments are matched with a weighted sample of all non-leasehold apartments, with weights being determined by the inverse distance of propensity scores.

Before matching, observations that are outside the range of common support (i.e. their propensity scores perfectly predict leasehold-status) and duplicate observations on the propensity score are removed, taking the total number of observations to 22,441. Results of the propensity score matching are presented in table 4. The probit regression that estimated the propensity scores in table 3. It is reassuring that all matching schemes are consistent in the sense that they indicate that leasehold status negatively impacts price and that the results do not deviate much depending on matching scheme. The effect on price ranges from -337,575 SEK when matching on the nearest match to -300,330 SEK when matching on the four nearest matches. Kernel matching produces a difference of -247,966 SEK. The impact on price larger than that from the hedonic model. as illustrated by the mean price of matched non-leasehold apartments when applying nearest neighbor matching being 4,225,601 SEK, so that a negative impact of -337,575 SEK corresponds to an impact of -8.0% for an apartment with an average value selling at an average discount.

Of some concern is that the samples do exhibit statistically significant differences: the monthly fee, living area, and the number of rooms exhibit differences at a 1% level of significance for all matching schemes, while the age variable is significantly different at the 10% level when applying kernel matching. This is a likely consequence of the large number of matching variables for estimation of the propensity scores. We do however believe that inclusion of as many as possible variables that impact the outcome is the most appropriate model specification. Although statistically significant, these differences are small from an economic perspective, as an example going from the mean of 2.55 rooms for leasehold apartments to 2.75 rooms for non-leasehold apartments when matching on the closest match. Leasehold apartments are slightly smaller than non-leasehold apartments, with an average size of 69 square meters and non-leasehold apartments ranging between about 72 to 74 square meters for all matching schemes.

Binary variables indicating the quarter of sale and neighborhood are included when estimating the propensity scores but are suppressed from the output to save space. When matching on the nearest match two variables indicating the quarter of the sale deviates at a 1% level of significance, and one such variable deviates at the 5% level. No such differences are present when matching on the four nearest matches and kernel matching.

Out of 15 neighborhoods, 2 neighborhoods deviate statistically when applying Kernel matching (at the 10% level and 5% level, respectively), one neighborhood when matching on the four nearest matches (at a 10% level of significance) and three neighborhoods when matching on the nearest match (two at the 5% level of significance and one at a 10% level of significance).

We test the robustness of the results following the approach proposed by Rosenbaum (2002). Basically, given that the above-mentioned assumption of unconfoundedness is untestable, we test how sensitive the estimate of the treatment effect is to the presence of an unmeasured confounding variable (i.e. a variable that impacts the probability of having leasehold-status in addition to also having an impact on sale price). So, if π_i is the probability of a apartment i having leasehold-status, a corresponding odds ratio for leasehold status is as follows:

$$\pi_i/(1 - \pi_i) \tag{15}$$

A measure of sensitivity is provided by an odds ratio between observations i and j , which is defined as Γ and is as follows:

$$\frac{\pi_i/(1-\pi_i)}{\pi_j/(1-\pi_j)} \equiv \Gamma \tag{16}$$

So that Γ can be viewed as a multiplier of the degree of departure from random assignment if two apartments with identical characteristics have odds of having leasehold-status that diverge by Γ . In other words, $\Gamma = 1$ implies that there is no hidden bias while $\Gamma = 2$ means that two apartments with the same observed characteristics, one is twice as likely to have leasehold-status.

Our models are sensitive to hidden bias, with the confidence bounds of p values of the estimated effect on sale price exceeding .05 at $\Gamma=1.3$ when matching on the nearest match, $\Gamma=1.5$ when matching on the four nearest matches, and $\Gamma=1.7$ when applying Kernel matching.

Table 3 – Probit Regression Results for Estimation of the Propensity Scores. The Dependent Variable is Leasehold-Status. Z-values are shown in parenthesis below the Coefficients.

Variable	
Monthly Fee (SEK)	.0001783 (10.46)
Living Area (sqm)	-.0080428 (-6.83)
No. of Rooms	.1274108 (4.66)
Floor Number	-.0079205 (-1.48)
Age	-.0086149 (-21.46)
Elevator (1/0)	.0747371 (2.18)
Balcony (1/0)	-.0882891 (-1.98)
No. of Obs.	22,441
Pseudo-R ²	0.1748

Binary variables indicating the quarter of transaction and binary variables indicating the location (parish) are suppressed from the output to save space.

Table 4 – Estimated Effect of Leasehold Status on Sale Price after Propensity Score Matching

Variable	Nearest Neighbor 1:1				Nearest Neighbor 1:4			Kernel (Gaussian)		
	Leasehold	Non-Leasehold	Difference (ATT)	Std.Err.	Non-Leasehold	Difference (ATT)	Std.Err.	Non-Leasehold	Difference (ATT)	Std.Err.
Saleprice (SEK)	3888025.92	4225601.21	-337575.293***	51496.4	4188355.49	-300329.569***	39248.02	4135992.47	-247966.553***	26983.43
Monthly Fee (SEK)	3547.39035	3752.3441	-204.953748***		3727.11673	-179.726376***		3680.32864	-132.938285***	
Living Area (Sqm)	68.8564593	73.7013557	-4.84489633***		72.8924442	-4.03598485***		72.194252	-3.33779271***	
No. of Rooms	2.54984051	2.75239234	-.202551834***		2.7164075	-.166566986***		2.69152273	-.141682217	
Floor Number	2.45933014	2.37539872	.083931419		2.41691587	.042414274		2.3780386	.081291541	
Age	49.6941786	51.2185008	-1.52432217		51.2909689	-1.59679027		51.8739783	-2.17979963*	
Elevator (1/0)	.846491228	.843700159	.002791069		.857854864	-.011363636		.848298619	-.001807391	
Balcony (1)	.086523126	.080940989	.005582137		.086822169	-.000299043		.089741788	-.003218662	
No. of Obs.	22,441									

Variables indicating the quarter of sale and neighborhood are included in the model but suppressed from the output to save space. As Abadie and Imbens (2008) showed that bootstrapping of standard errors is invalid for non-smooth estimators (i.e. nearest neighbor matching), standard errors are estimated following Abadie and Imbens (2006) for matching on the nearest and four nearest neighbors. Bootstrapping with 250 replications is applied for kernel matching.

* Two-sample t test of difference in means is significant at the 10% level.

** Two-sample t test of difference in means is significant at the 5% level.

*** Two-sample t test of difference in means is significant at the 1% level

6. Conclusions

The aim of this paper is to study how the information and knowledge of leasehold status for housing cooperatives and its corresponding effect on the price of apartments. We argue that the fact that the housing cooperative leases its land should have a negative impact on the price of its apartments, this has also been found in previous studies. In addition, the added uncertainty introduced when it comes to renegotiating the ground lease rents should have a further, and additional negative impact. Risk-averse households should, all else being equal, be willing to pay less for an apartment on a leasehold close to its renegotiation date when future ground lease rents are uncertain. Using data on apartment transactions in Stockholm, Sweden, paired with information of leasehold status, that is leasehold or freehold, we can answer the first question. Apartments belonging to cooperatives on leasehold land are sold at a small, but statistically significant discount of roughly 2%. We find consistent results when applying propensity score matching, indicating a similar although slightly larger negative price impact. This is where previous studies have stopped.

By adding information of duration of current ground lease rent contracts we can also answer the second question. At the time of renegotiation, apartments in cooperatives on leasehold land are sold at 4.2% lower prices compared to non-leasehold apartments, if the relationship is modelled linearly. When allowing the effect of contract duration to be non-linear with respect to remaining time of the contract, the estimated discount becomes even larger when the date of renegotiation approaches. This is consistent with the assumption of risk-averse households, and cannot be explained by the discount factor alone. We find that the further away from the date of renegotiating the ground lease rent, that is, the longer the duration of the current contract, the higher the price. These findings are interesting, but not surprising. They do confirm that on the housing market, leasehold status, and the uncertainty that comes with it, is accounted for through the price mechanism.

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1.1 Influence of the appraisers and their thoughts

1.1.1 Behavioral information processing and heuristics

Behavioural property research emerge in the 1990-ies and has it's origin in behavioral economics and finance, combining the market inefficiencies from economics and finance and human limitations from psychology (MacCowan & Orr, 2008; Mullainathan & Thaler, 2000). Behavioral property research springs out of the research on the human information processing, including problem solving and task environment (Newell & Simon, 1972; Simon, 1955), and on heuristic problem solving in specific stages of the information process (Kahneman, 2003; Tversky & Kahneman, 1974). Behavioral research can be summarized as the inherent limitations of human memory and problem solving capacity do that individuals or groups of individuals' cannot make perfectly rational decisions¹. Therefore they use heuristics i.e. cognitive shortcuts and rules of thumb, when solving complex problems to simplify their decision making (Bonner, 2008; Mullainathan & Thaler, 2000; Simon, 1978).

In the same way, behavioral property research have been used to study property appraisers cognitive shortcuts in the valuation process, such as deviations from the normative valuation process (Diaz, 1990a, b, 1997; Diaz & Hansz, 1997, 2001; Diaz & Wolverton, 1998; Diaz *et al.*, 2002), or the use of different heuristics such as anchoring and adjustment, and

¹ Since human problem solving capability is limited (both according to brain power and time to spend) we cannot be expected to solve difficult problems optimally. We have limited information processing capabilities i.e. 'bounded rationality' (Simon, 1955). Human working memory can deal with roughly seven cues of information at one time (Miller, 1956).

feedback i.e., client pressure, at different stages of the valuation process (Black *et al.*, 2003; Diaz & Hansz, 2007; Roberts & Henneberry, 2007, and explicit client pressure on property appraisers' value statements (Amidu *et al.*, 2008; Kinnard *et al.*, 1997; Levy & Schuck, 1999, 2005; Nwuba *et al.*, 2015). What all these areas have in common is that they in some way affect information, and thereby the resulting valuations.

Examples of anchoring and/or adjustments are whether the property appraisers anchor their assessments in previously executed appraisals (Diaz, 1990, 1997; Diaz & Hansz, 1997, 2001; Diaz & Wolverton, 1998), property or comparison objects purchase price (Black & Diaz, 1996; Black, 1997; Diaz, *et al.*, 1999; Northcraft & Neale, 1987), provided starting price before sale (Gallimore, 1996; Gallimore & Wolverton, 1997), tax assessment value (Cypher & Hansz, 2003), or the recency effect (i.e. valuation judgments based on emotional reactions and the tendency to focus on recent events) (Gallimore, 1994). Diaz & Hansz (1997, 2001) found that property appraisers who work in unfamiliar markets anchor their valuations on anonymous appraisers valuations, but this anchor behaviour is not found in familiar markets (Diaz, 1997). Diaz and Hansz (1997, 2001) suggest that when property appraisers experience increased uncertainty, they use information they would not normally consider reliable.

Differences between countries, within a country, and an organisation

A major cause of differences in how property appraisers perform their work in different countries are the transparency of their markets. Differences depends directly by information availability (performance measurement, such as property related indices, market fundamental data), and indirectly by regulatory and legal frameworks, governance, and transaction process (cf. GRETI 2008).

Chen and Yu's (2009) comparative study of Taiwanese and Singaporean appraisers showed that most appraisers' confidence in their valuations

grew with greater access to information i.e., information availability. Moreover, when property appraisers' local knowledge and experience increased, so do their confidence and ability to resist client pressure. In fact, lack of transparency is identified as the main cause of client influence, since clients use their knowledge of market transaction data to affect the valuation.

Another cause of differences in how property appraisers perform their work may be the property appraisers education and experience. Although previous research is not consistent. Differences has, for example, occurred between students with various levels of training (Levy & Frethey-Bentham, 2010), between students and experts (Sah *et al.*, 2010), and between novices and experts (Diaz, 1990b) At the same time no differences occurred or between novices and experts² (Diaz, 1997).

When valuing a vacant industrial land (Cypher & Hansz, 2003) students did anchor in tax assessment value while the experts did not. In the study of Sah *et al.* (2010), students did not search information in the same degree as the experts when analysing office property investment opinions, although both students and experts were similar in the prioritisation of information attribute related to each property. The later indicated that the knowledge of value-adding information learned in training seems unaffected by experience.

1.1.2 Valuation process

A point of departure for the valuation process used in this thesis is the model of Levy and Schuck (1999) see Figure 2.

² Students often defined as undergraduate students, and novices are advanced graduated students or trainers with advocate education (Shauteau, 1992).

Figure 1 Valuation within the commercial environment (Levy and Schuck, 1999 p. 383).

In Figure 2 the clients give the valuer (i.e. appraiser) instructions, information, and considerations (i.e. payment). The appraiser gets information indirectly by the client or directly from the property market. Moreover, the appraiser report the valuation result to the client (Levy & Schuck, 1999).

In line with the modified model of Chen and Yu (2009, p. 27), this thesis focus on information and the appraiser, where information of properties can be divided into property object specific information and property market specific information. Moreover, the thesis consider the client as the primary recipient of the valuation. This entails that stakeholders i.e. the third parties (such as lenders) are included in the client concept.

As can be seen, clients (i.e. property owners) may be crucial as information providers for the appraiser. This may lead to conscious or unconscious client pressure. Professional property appraiser independence is essential to the valuation of commercial properties. Since property valuations are uncertain because of the limited information, the uncertainty opens up for client pressure (Crosby *et al.*, 2018). Clients may have both financial incentives and means to influence the appraiser and the valuation process. To influence appraisers, they

must also have the opportunity to do so (Crosby *et al.*, 2010; Levy & Schuck, 2005). The three most common opportunities for clients to influence the appraisers are by instructions, information, and considerations (Levy & Schuck, 1999). Even if the information comes directly from the property market or indirectly from the client, the information flow is crucial for the appraisers when performing their task.

Information flow and two decisions in the valuation process

The valuation process can be described as a function of information, where property appraisers gather, analyse, and assess various kinds of information from different sources to estimate the value of commercial property (Gallimore, 1996; Tidwell & Gallimore, 2014). Information processing are generally described as consisting of three components; input, processing, and output, and often used when describing task complexity such as in the audit judgment research literature (e.g. Bonner, 1994; Libby & Lewis, 1977). This structure of the information process is also appropriate when examining the appraisers valuation process. For example, Klammer *et al.* (2018) use components in the three chronological³ order, starting with input stage activities (i.e. instruction, and information gathering), followed by the process stage (i.e. analysis and assessment) and conclude with the output stage tasks (i.e. valuation report) including the estimated value. Figure 2 demonstrates a simplified valuation process, related to input-process-output stages.

³ It is common to describe the components as chronological, while some activities in the components may be performed simultaneously rather than sequentially, which also is indicated in the findings of Klammer *et al.* (2018).

Figure 2 The simplified valuation process

The valuation process can also be seen as a decision-making process, involving both 'theory of search' and 'theory of choice' (Cyert & March, 1963). The property appraisers estimation of properties market value (i.e. the output flow) can be seen as the primary result of the valuation. Where the appraiser decides what he/she sees as an appropriate value of the specific property object. This is not the only decision the appraisers make in the valuation process. Information search can also be seen as a decision problem. The gathered information from the chosen sources (first decision) according to selected methods to use, is then used to estimate a market value (second decision) (cf. Arrow, 1974; White, 1975). To sum up 'theory of search' applies to property appraisers' first decision regarding which information sources to use, while 'theory of choice' refers to the second decision i.e. the appraisers' assessment of the selected information (cf. Stabell, 1978). Figure 3 demonstrates a simplified valuation process including the two decisions.

Figure 3 The simplified valuation process including the two decisions

Figure 3 shows that the simplified valuation process begins with clients instruction to the appraiser. The appraiser decides (i.e. the first decision) which information types to gather and from which sources, which may result in direct information flows from the property object and the property market to the appraiser, and/or indirect information flows from the property object and the property market, via the property owner, to the property appraiser. The second decision is about appraiser assessment of gathered information, which results in an information output flow including the estimated market value, and a valuation report.

In the first decision they may visually inspect the property and gather data about it and the property market from their own and/or branch-specific databases and property indices. Moreover, clients (property owners) may provide private information about the property and its local market or the market in general to property appraisers (Levy & Schuck, 2005). The different types of property- and market-specific information can be i) income related information (contractual terms of leases, rental income, and vacancy rate), ii) method related information (discount rate, and residual value), iii) costs related information (administration and management, operating and heating costs, maintenance, investment needs, and environmental pollution), and iv) physical property related information (conditions and standards, location, and local environment) (cf. Nordlund, 2008). This wide range of information may have more or less impact at the estimated market value, and therefore be described as value-influencing factors.

In the second decision stage the appraisers interpret and analyses the different types of gathered information. The ability to process available information in a consistent manner is of great importance (cf. Gallimore, 1996; Joslin, 2005). When appraisers perceive difficulty in assessing information from the market or the individual property, they may perceive lack of self-confidence (Mallinson & French, 2000).

1.1.3 Complexity theory

Property appraisers valuation process when gathering, analyzing, and assessing information regarding commercial properties can be seen as a complex task (cf. Campbell, 1988). Particularly since property appraisers gather several types of information and are forced to make several steps of decisions in the valuation process (Amidu, 2011; Gallimore, 1996; Tidwell & Gallimore, 2014). As mentioned previously, are information processing often used when describing task complexity such as in the audit judgment research literature (e.g. Bonner, 1994; Libby & Lewis, 1977).

There exists several different ways of how to define or calculate task complexity. Literature reviews of definitions of task complexity see for example Campbell (1988) and Liu and Li (2012). Some recent studies in behavioral property research has used the task complexity framework, such as by Klammer *et al.* (2018) and by Baffour Awuah and Gyamfi-Yeboah (2017).

Baffour Awuah and Gyamfi-Yeboah (2017) studied the extent of variations among valuations produced by professional valuers in Ghana, by studying differences between valuation task types (identified as residential, retail/office, fuel service station, and mixed land use. Baffour Awuah and Gyamfi-Yeboah (2017) defines task complexity in line with Campbell (1988) as: three criteria for defining a complex task namely: information load, information diversity and the rate of information change.

Rating of valuation tasks complexity was measured by the valuation task complexity characteristics: Multiple pathways (A), Multiple desired outcomes (B), Negatively related desired outcomes (C), Uncertain linkage between pathway activities & desired outcomes (D)

“Campbell (1988) identifies four characteristics that result in increase in information load, information diversity or rate of information change and can be regarded as contributing to task complexity. These are (a) the

presence of multiple potential ways (paths) to arrive at desired end state, (b) the presence of multiple desired outcomes (end states) to be attained, (c) the presence of conflicting interdependence among paths to multiple outcomes and (d) the presence of uncertain or probabilistic links among paths and outcomes.

“Complexity theory (Driver & Streufert, 1965; Schroder et al., 1967; Streufert & Driver, 1967) explains the relationship between the nature of the task and the nature of the decision maker’s thought pattern (Stabell, 1978). The task reflects the complexity of the environment (i) in terms of the amount of information received, while the decision maker’s thought pattern manifests itself in what is called integrated complexity (ii). Integrated complexity is determined by the number of dimensions in the thought pattern, i.e. dimensionality, and is partly determined by the extent and nature of the rules and structures that individuals use to coordinate these dimensions (Hedberg & Jönsson, 1978).”

“Schroder *et al.* (1967) identified three primary properties of a complex task (environment in their terminology): the number of dimensions of information requiring attention (i.e., information load), the number of alternatives associated with each dimension (i.e., information diversity), and the rate of information change (i.e., the degree of uncertainty involved). Complexity increases as each of these dimensions increases.” (Campell, 1988)

Integrated complexity can be explained as a function of the complexity of the environment. This function is determined by the nature of the decision maker’s behavior and the individual’s capacity to manage information. Increased integrated complexity results in a greater ability to generate alternative interpretations. Figure 4 illustrates how integrated complexity increases with increased environmental complexity to a certain level, i.e. the optimum of an inverted U-curve. To reach this optimal level, individuals seek information and tend to combine information from different sources (Schroder *et al.*, 1967).

Figure 4 Integrated Complexity as a Function of the Complexity of the Environment related to optimum

Figure 4 is a modified model of Hedberg and Jönssons (1976) model of Schroder *et al.* (1967) integrated complexity as a function of the complexity of the environment.

“Decision making reaches an optimal level when individuals’ cognitive capacity matches the complexity of their environment (Hedberg & Jönsson; 1978; Streufert & Schroder, 1965). Integrated complexity decreases as the environmental complexity increases above the optimum (Streufert, 1969). This is because individuals cannot handle all available information, and therefore simplify perceived reality using cognitive shortcuts (Kahneman, 2003). In other words, relevant information can be missed because individuals cannot process all available information. Subconsciously, the individual may simplify the task rather than seeking new information. Of course, individuals can also make conscious simplifications by not seeking all relevant information or by overlooking the fact that they lack the information needed to solve the task appropriately (Bonner, 2008).”

Individuals’ thought patterns, and how these patterns are constructed, affect how individuals perceive the environment and therefore how they make assessments and decisions.

“Culture has been described as a social game of unwritten rules observable in practices and values (e.g. symbols, heroes, and rituals) (Hofstede *et al.*, 2010). Some beliefs, for example, concerning how things should or should not be done, are determined by and within the organization. Collective thinking is shared by many individuals and is central to individuals’ understanding of what is happening around them. Cultural differences are expressed in collective thinking that distinguishes members of one group from members of other groups, and Hofstede (1980:43) defines culture as “*the collective mental programming of people in an environment.*” Culture can therefore differ depending on group level, geographical region, or professional environment (Hofstede *et al.*, 2010).”

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(Liu and Li, 2012) “task complexity is understood from the structure of a task. For example, it can be defined as a function of the number of elements of which the task is composed of and the relationships between those elements. A complex task may have many task elements and task elements interconnect with each other.”

Wood (1986) proposed a task model with three essential components: products, acts, and information cues. Based on this task model, Wood structured task complexity with three dimensions: component complexity (i.e., the number of distinct acts and information cues necessary for the completion of the task), coordinative complexity (i.e., the nature of relationships between task inputs and task products), and dynamic complexity (i.e., the stability of the relationships between task inputs and products). The former two dimensions are static complexity due to task design; the latter dimension is dynamic complexity due to changes of the external world which has an effect on the task components and their relationships over a certain time period. This model implies that task complexity is a function of task components, their interaction, and the effect of external factors on the task. Wood's

complexity model is one of the most widely-used objective complexity models.

Campbell's (1988) complexity model is another widely-used objective task complexity model. A complex task has one or more following characteristics: multiple paths, multiple outcomes, conflicting interdependence among paths, and uncertain or probabilistic linkages. Zigurs and Buckland (1998) re-named these four characteristics as solution scheme multiplicity, outcome multiplicity, conflicting interdependence, and solution scheme/outcome uncertainty, respectively. Note that other task characteristics associated with complexity, such as being ill-structured, ambiguous, and difficult, can be seen as consequences or reflections of these four basic characteristics (Campbell, 1988; Zigurs and Buckland, 1998).

Bonner's (1994) complexity model may be the most widely-known model in the auditing literature (Tan *et al.*, 2002). According to the general information processing model, Bonner classified elements of task complexity into three types: input, processing, and output complexity. Each type of task complexity consists of two dimensions: the amount of information and clarity of information. Input complexity is exemplified here. The amount part of input complexity relates to the number of alternatives, the number of attributes per alternative, and the number of cues. As the amount of input increases, a larger information load is placed on human memory and attention. Redundancy among cues should be considered, as it may reduce the negative effect of the number of cues on human information processing capability. Campbell (1988) also argued that if all paths (i.e., alternatives) are likely to arrive at the same desired outcome, redundancy actually may reduce task complexity. The clarity aspect of input complexity relates to cue specification, cue measurement, match between presented cues and stored cues, and presentation format. Unspecified or non-measured cues will cause a lack of clarity, which will produce an unclear input. The mismatch between the manner of

information presentation and the manner of information storage in the human memory system results in more complexity because the information has to be represented or recoded in the human memory system. In nature, the models of Bonner (1994) and Wood (1986) have the same root. Cues, acts, and products in Wood's model are expressed as inputs, process, and outputs in Bonner's model. However, these two studies involve two orthogonal directions while describing task complexity." (Liu and Li, 2012)

..." The input (e.g., information cues, stimuli, data, procedures, guidance, and random events) component has been acknowledged as a basic source of task complexity. Ten CCFs are examined here: clarity, quantity, diversity, inaccuracy, rate of change, redundancy, conflict, unstructured guidance, mismatch, and non-routine events. Input clarity was regarded as an important element of task complexity by Bonner (1994). A task with less specific, unclear information cues or fewer data requires more knowledge. Bonner (1994) argued that the difference between experts and novices is that experts can handle unclear inputs because of their superior knowledge about input specifications and that this CCF might be a primary determinant of overall task complexity. Input quantity has been identified by many researchers (e.g., Wood, 1986; Bonner, 1994; Simnett, 1996; Harvey, 1997).

"the relationship between the complexity induced by input quantity and task performance would be an inverted-U shape. Driver and Streufert (1969) and Simnett (1996) provided several evidences to support this view. Little available information does not allow the task performer to form the correct mental image for performing the task nor to make an effective decision. However, a large quantity of input may place high information load on the memory and attention system of the task performer (Wood, 1986; Bonner, 1994). Thus, there may be an optimal point of input quantity to achieve maximum human performance. Diversity of information (or stimulation) has been

considered as one of the basic elements of task complexity (e.g., Driver and Streufert, 1969).” (Liu and Li, 2012)

“Inaccurate, invalid, or unreliable data result in increased uncertainty (Woods, 1988) and more HIP activities, including inferring and judging. Rate of change has been regarded as another basic element of input complexity (Driver and Streufert, 1969). Campbell (1988) claimed that any objective task characteristic that implies an increase in information load, information diversity, or rate of change could be considered as a contributor to task complexity.” (Liu and Li, 2012)

“Task complexity also increases when a mismatch or inconsistency exists between the manner in which information cues are presented and the manner in which they are stored in the memory system (Bonner, 1994) or between the actual input and the expected input (O'Donnell and Johnson, 2001).” (Liu and Li, 2012)

1.1.4 Personal construct theory

A relevant theory for studying thought patterns i.e. how people unconscious think is Kelly's (1955) personal construct theory. This theory are built on the fundamental postulate:

A person's process are psychologically channelized by the ways in which he anticipates events. (Kelly, 1955, p. 46)

This key assumption is that how a person perceives an entity – e.g. act, event, person, place, thing, or object – determines how he or she behaves in relation to it (Fransella *et al.*, 2004; Wright & Lam, 2002). Kelly (1955) based his personal construct theory on his own philosophy, which he called for Constructive alternativism. Constructive alternativism is defined as:

[D]ifferent people have different ways of constructing the same thing; also, that a single person always has the option of constructing the same thing differently on two separate occasions. (Jankowicz, 2004, p. 15).

Individuals view the world through or own frame of reference (inside our minds). This frame of reference are built on individual representations of previous experiences (such as experience from education, professional experience and where they work) which are stored in memory. Those experiences do the individual use when the individual make his/her interpretations of the world and different phenomena (ex. Jankowicz, 2004; Jansson, 2008; Kelly, 1955/1991).

The individual's thought patterns consist of conceptual systems that the individual uses to understand and interact with his/her surroundings, in the workplace and in the daily life in general. This is similar to hypothesis testing where the individual develops, tests and modifies or rejects hypotheses about their own unique experiences of the outside world continuously (Stewart & Stewart, 1981).

Conceptual systems are composed of constructs, which Kelly (1955/1991) explains by using eleven corollaries, (see Appendix 00). First of all, a individual's construct system is composed of finite number of dichotomous constructs (Dichotomy corollary). The individual uses bipolar constructs to attribute meaning to an entity (Construction corollary) (Kelly, 1955). Individuals value events (i.e. things) based on their opposites characteristics. For example, to express that something is tall (historical) has no real meaning if we can not relate it to something we perceive as short (future-oriented) (Jansson, 2008). In other words, we compare the entity against contrary characteristics were two characteristics forms a dichotomous construct, which simplified can be expressed as a scale reaching from "tall" to "short" in each end point of the scale.

Individuals develops their own unique constructs (i.e. meanings) for the same events (Individuality corollary). Thus, not to say that we can not

understand and accept other people's explanations of concepts. If this were not possible we could not communicate at all. (Jansson, 2008)

Kelly (1955) recognizes that individuals with shared experiences may understand the world in a similar way (Commonality corollary). This means that individuals construe (see the meaning in) events similarly (Jankowicz, 2004).

Existing conceptual systems can thus be extended by the individual acquiring more knowledge in the same area (Experience corollary). Conceptual systems can also be changed, which means that prior knowledge is rejected in favor of new knowledge (Hellgren & Löwstedt, 1997:35). If the whole system is to be effective in anticipating events, it makes sense for individuals to expand the system in a way which increases the accuracy of our predictions and anticipations (Choice corollary). This can be explained as hypothesis testing in favor for the best solution.

What Kelly emphasizes in his theory is that our experience is important for how we take information and make sense because we see the world through our own concepts. He further argues that people make sense on the basis of actual problems and events that occur in our environment (Jansson, 2008).

A construct can be used when creating meaning of different events, but only when the construct makes sense (Range corollary). This means that a construct can not be used for all event/things in all circumstances. (Jankowicz, 2004). Some constructs can accommodate many new events within their range of convenience (for example, good-bad), while others apply to only a few (for example, information has little–major impact on the property's estimated market value). (Modulation corollary)

To map conceptual systems (thought patterns), i.e. re-create individuals' interpretation of events they were exposed to, the repertory grid technique method is an option, (described further in the method section).

Complexity

Another constructivist approach that provides an alternative view of the considered concepts is Crockett's theory of cognitive complexity (e.g., Rosenkrantz & Crockett, 1965). This theory links the personal construct approach to Werner's structural-developmental theory. The latter is influenced by the orthogenetic principle, which states, "Wherever development occurs, it proceeds from a state of relative globality and lack of differentiation to states of increasing differentiation, articulation, and hierarchic integration" (Werner, as cited in Burleson & Waltman, 1988, p. 126).

Complexity is composed of differentiation (number of constructs), articulation (a system with rather abstract and refined constructs), and organization or integration (bonds with constructs; Burleson & Waltman, 1988). Complexity is thought to develop during childhood and adolescence and to be dependent on the extent of experiences and activities in a particular domain, which makes it domain specific (Burleson & Waltman, 1988).

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Nyt ejendomsvurderingssystem i Danmark – en løftestang for kvaliteten af ejendomsregistre

Abstract

Udviklingen af et helt nyt offentligt ejendomsvurderingssystem i Danmark blev sat i værk i 2014 efter årelang diskussion af kvaliteten af de hidtidige vurderinger, og en stærkt kritisk rapport udarbejdet af Folketingets rigsrevisorer i 2013. Det nye system bygger på modellering af ejendomsværdier ved hjælp af ca. 60 forskellige parametre fortrinsvist fra ejendomsregistre og salgsdata fra tinglysningen. Kvalitetskontrol af de således beregnede værdier understøttes af forskellige geografiske systemer, som bl.a. anvender helt nye skråfotos af alle ejendomme i Danmark. Der er desuden tale om at vurderingen i områder, hvor salgsdata er mangelfulde, understøttes af mæglervurderinger. Udviklingen og implementering af de nye vurderinger sker internt i enheder og styrelser under Skatteministeriet, men der samarbejdes med kommuner og andre offentlige styrelser om delleverancer, ligesom en del af dataarbejdet og systemudviklingen er udliciteret. Da de nye vurderinger bygger på at de underliggende data, som fødes ind i modellen, er pålidelige, indebærer nyudviklingen en milliardinvestering i data og systemer, som følgerig har en positiv afsmittende effekt på andre anvendelser af ejendomsdata og den tilhørende digitale infrastruktur. Der præsenteres eksempler på igangværende arbejde med opgradering af data, f.eks. fra Bolig- og Bygningsregistret, samt gives et overblik over den nye vurderingsmodel, som den foreligger beskrevet.

Keywords: Ejendomsvurdering, BBR, ejendomsregister, datakvalitet, Danmark

Indledning

Udviklingen af et helt nyt offentligt ejendomsvurderingssystem i Danmark blev sat i værk i 2014 efter årelang diskussion af kvaliteten af de hidtidige vurderinger, og en stærkt kritisk rapport udarbejdet af Folketingets rigsrevisorer i 2013. Retningslinjerne for det nye system blev udviklet af et ekspertudvalg, som afgav rapport i 2014, mens en overordnet beskrivelse foreligger i form af en generel præsentation af principper, målsætning og tidsplan fra 2016¹.

Udviklingen og implementering af de nye vurderinger sker internt i enheder og styrelser under Skatteministeriet (SKAT), men der samarbejdes med kommuner og andre offentlige styrelser om delleverancer, ligesom en del af dataarbejdet og systemudviklingen er udliciteret. Investeringerne i udviklingen af det nye system er massiv (en ramme på 2,6 milliarder dkk, som allerede er overskredet) og tidsplanen er forsinket. Da de nye vurderinger bygger på at de underliggende data, som fødes ind i modellen, er pålidelige,

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¹ Implementeringscenter for ejendomsvurdering, 2016, Nye og retvisende ejendomsvurderinger.

forventes det nye vurderingssystem at have en positiv afsmittende effekt på andre anvendelser af ejendomsdata og den tilhørende digitale infrastruktur.

Den digitale infrastruktur til statens vurderingssystem havde længe trængt til en opgradering, blandt andet fordi der havde været tvivl om den offentlige ejendomsvurdering siden skattestoppet blev indført i 2001. Før udviklingen af det nye vurderingssystem blev sat i værk i 2014, blev der gennem det såkaldte Grunddataprogram² startet en gennemgribende fornyelse og opgradering af nøgledata og den tilhørende digitale infrastruktur, som omfatter matriklen, tingbogen, bygnings- og boligregistret (BBR), det kommunale ejendomsregister mv. Der er indført en mapning mellem forskellige ejendomsbegreber, ”bestemt fast ejendom” (tinglysningsloven), ”Samlet fast ejendom” (matrikulær definition) og vurderingsejendom, således at der indføres entydighed mellem subsystemer. Der er også i de seneste år sket ændringer i de underliggende datamodeller, f.eks. i forbindelse med overførelse af ansvaret for registrering af ejerlejligheder og bygninger på lejet grund fra tingbogen til matriklen.

Overblik over anvendelsen af data til de nye offentlige ejendomsvurderinger

Den nye ejendomsvurdering bygger på modellering af ejendomsværdier ved hjælp af ca. 60 forskellige parametre fortrinsvist fra ejendomsregistre og salgsdata fra tinglysningen (Colding, Lindegaard, Breumlund, 2017)³.

Data til de nye ejendomsvurderinger skal fødes gennem de offentlige ejendomsregistre og forbedret statistik om ejendomsmarkedet. Desuden bliver der etableret supplerende systemer med bl.a. afstandsberegninger af og nye skråfotos for alle vurderingsejendomme, som indgår i eller skal understøtte kvalitetskontrollen af de beregnede værdier. De nye vurderinger forventes at inddrage plandata fra fortrinsvist lokalplaner, men det er stadig ikke klart, hvorledes disse anvendes. Der er desuden tale om at vurderingen i områder, hvor salgsdata er mangelfulde, understøttes af mæglervurderinger.

Nedenfor gives eksempler på hvorledes reformen af vurderingssystemet spiller ind på ejendomsdata generelt.

Forbedringer vedr. Markedsdata og Prisindeks

Helt centralt for de retvisende ejendomsvurderinger er fuldstændige markedsdata. Det digitale tinglysningssystem føder salgsdata, som anvendes i vurderingen både på et lokalt plan ved at inddrage nabosalg til beregning af ejendomsværdi for hver enkelt ejendom, og i form af prisindeks. I den nye vurderingslov (Lov nr. 654 af 8. jun i 2017, §44) er Danmarks statistik givet et særskilt ansvar for udarbejdelse af prisindeks, som f.eks. anvendes til tilbageskrivning/fremskrivning af salgspriser.

Der er særlige udfordringer ved vurdering af erhvervsejendomme, som ikke er detaljeret beskrevet i tilgængelig information fra SKAT. Det skal bemærkes, at der først gennemføres nyvurdering af boligejendomme (2020) efterfulgt af andre typer af ejendomme i det følgende år.

Opgradering af eksisterende registerdata

SKAT overtog ansvaret for Bygnings- og Boligregistret i 2015. Af særlig interesse for vurderingen er anvendelseskoder for bygninger og delområder deraf, og at alle bygninger er repræsenteret (komplethed) og med korrekt placering. Beliggenhedsdata anvendes f.eks. til afstandsberegninger, som forventes at influere på værdien af ejendommen: afstande til kyst, skov, støjende anlæg mv.

SKAT har således investeret i et kvalitetsløft af anvendelseskoder, specielt for bygningsarealer af erhvervsejendomme, og af geokodningen af bygninger. Der foretages en vis grovkontrol af samspillet mellem

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² Introduktion til Grunddataprogrammet, SDFE, 2017, <https://sdfe.dk/data-skaber-vaerdi/temaer/grunddataprogrammet/>

³ Tina Svan Colding, Lasse Skakkebæk Lindegaard, Lars Breumlund, 2017, Fremtidens Ejendomsvurdering, Perspektiv nr. 31, 2017, <https://somaesthetics.aau.dk/index.php/gfp/article/view/2119>

registerdata (A/N) og kortdata vha arealdata fra bygningernes fodaftryk, men der har ikke været ressourcer til en fuldstændig kontrol eller opgradering af bygningsdata. En sikring af samspillet mellem BBR og matriklen forudsætter således, at bygningerne er beliggende på matrikelkortet "på de rigtige parceller" svarende til de juridiske forhold. Der er en begrundet formodning om, at der mangler et stort antal bygninger i BBR, ligesom angivelsen af etagekvadratmeter for erhvervsbygninger kan være fejlbehæftede.

Datakvalitet i BBR

Det har de sidste 15 år blevet lavet flere undersøgelser som peger på den dårlige datakvalitet i BBR. I 2004 blev det i en undersøgelse (EBST 2004) påpeget at visse brugere angiver at der er relativt mange fejl i BBR og at op til 20-50% af ejendomme og bygninger er behæftede med fejl⁴. Det konkluderes også at anvendelsen af fejlagtige BBR data kan få konsekvenser for brugerne, da BBR indgår i løsningen af en bred vifte af opgaver. Det er især oplysninger om garager, carporte, terrasser og lignende, der er behæftede med fejl. Det forklares ofte med, at ejeren, som har oplysningspligten, ikke altid melder den slags ændringer til kommunerne eller at kommunerne ikke melder byggesager som afsluttede. Arealangivelserne er desuden ofte behæftet med fejl, at borgerne ikke altid kender reglerne for opmåling og borgerne desuden ikke har et incitament til at opgive det korrekte areal. Fejlene er koncentreret på enfamiliehuse, og der er ydermere en større fejlfrekvens på ældre huse og landejendomme.

En vejledning om kvalitetssikring i BBR-arbejdet fra 2006 (EBST 2006)⁵ angiver at det indenfor den registrerede bygningsmasse skønnes at der på landsplan er ca. 160.000 bygninger med fejlagtige oplysninger om varmekonforhold i BBR. For ca. 230.000 bygninger indeholder BBR fejlagtige oplysninger om materialer, og for ca. 170.000 bygninger er der fejl i oplysninger vedr. toiletforhold. Det vurderes at ca. 3/4 million bygninger har arealafvigelser på mindst 5m², heraf dog kun ca. 160.000 bygninger (ca. 6 pct.), hvor arealafvigelsen skønnes at ligge over 25m².

I 2007 gennemførtes en undersøgelse⁶ som bl.a. viste at der i en mellemstor købstadskommune var afvigelser på mere end 25m² i 4% af alle enfamiliehuse. Dette bekræftedes i en spørgeskemaundersøgelse hvor kommunerne vurderede at 3,8% af landets enfamiliehuse har fejl på mere end 25m² (EBST 2007, s. 4). Det fremgår desuden at det skønnes at mellem hver fjerde og hver anden småbygning under 50m² ikke er registreret i BBR. (EBST 2007, s. 5).

En rapport fra Skatteministeriet 2014⁷ konkluderer at oplysningerne i BBR på ejerboligområdet generelt har en god datakvalitet, da det er tale om relativt få alvorlige fejl når det gælder vurderingsmæssigt afgørende forhold vedr. husets ydre karakteristika, f.eks. areal (SM 2014, s. 13). Det vides dog mindre om kvaliteten på oplysninger for bygningens inder forhold som toilet og bad og antal værelser. (SM 2014, s. 13).

En undersøgelse fra 2015 (MBBL 2015)⁸ påpeger at god datakvalitet i BBR er vigtig i takt med øget brug af registret, som bruges af bl.a. statslige, regionale og kommunale myndigheder og en række private virksomheder. Det påpeges endvidere at det er en kompleks opgave at anskueliggøre hvad som er god

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⁴ EBST (2004). Interessentanalyse af BBR registret. Rapport fra Epinion A/S 21 December 2004. Erhvervs- og Byggestyrelsen.

⁵ EBST (2006). Kvalitetssikring i BBR-arbejdet. En sammenfattende vejledning om hvordan datakvaliteten i BBR kan forbedres. Erhvervs- og Byggestyrelsen? Maj 2006. <http://w21.dk/file/4681/spoergeskemaundersoegelse.pdf>

⁶ EBST (2007). Overblik over fejl og mangler i BBR. Erhvervs- og Byggestyrelsen. 2007. https://boligejer.dk/file/7080/Rapport_om_fejl_og_mangler_i_BBR.pdf

⁷ SM (2014). Forbedring af ejendomsvurderingen. Skatteministeriet. https://www.skm.dk/media/1106957/Forbedring-af-ejendomsvurderingen_web.pdf

⁸ MBBL (2015) Datakvaliteten af ejerboliger i BBR. Ministeriet for By, Bolig og Landdistrikter. SAS Institute https://ki.bbr.dk/file/571501/datakvalitet_af_ejerboliger_i_bbr.pdf

datakvalitet, da datakvalitet generelt ikke et veldefineret begreb. (MBBL 2015, s. 5). En del fejl kan afhjælpes med logiske kontroller ved indberetning, f.eks. at et parcelhus ikke må have et negativt areal eller at grundarealen er mindre end bebygget areal (MBBL 2015, s.7). Disse logiske kontroller kan dog ikke identificere ikke logiske fejl, som f.eks. at et areal er opmålt forkert.

Anvendelse af plandata

Anvendelse af plandata til vurderingsformål tilsiger, at kommunernes registrering af lokalplaner forfines eksempelvis med (digital) opdeling af lokalplaner i delområder (se www.plandata.dk), ligesom der er behov for oplysninger om restrummeligheder og udnyttelsespotentialer. Hvorledes SKATs ønsker bliver effektueret i forhold til planmyndighedernes ønsker og behov, er fortsat uklart. Der kan opstå forskellige præferencer mellem SKAT, som ønsker så præcise angivelser så tidligt som muligt, og planmyndigheden, som ofte forhandler de konkrete bebyggelsesplaner med bygherrerne senere efter lokalplanens vedtagelse.

Supplerende data til kvalitetskontrol og understøttelse af den modelbaserede ejendomsvurdering Som noget helt nyt, har SKAT udbygget datagrundlaget for vurdering med beregnede afstandsdata og relativ beliggenhed af betydning for markedsværdien: afstande til skov, sø og strand, herunder beregninger af om den konkrete bolig har havudsigt. Afstande til større veje og tekniske anlæg forventes også at indgå. Hvorledes afstandsforhold konkret påvirker værdien, ud over de forhold som allerede er indlejret i områdets salgspriser, bliver interessant at få belyst.

Skråfotos (kontor kontrol)

SKAT har rekvireret skråfotos af alle vurderingsejendomme, som kan benyttes til kontorkontrol sammen med øvrige arealoplysninger, når vurderingerne skal færdigbearbejdes gennem den kommende vurderingsportal. Alle disse fotos er åbent tilgængelige gennem Styrelsen for Dataforsyning og Effektivisering, SDFE⁹. Dermed kan mange andre offentlige administrative opgaver lettes, men samtidigt er danskerne kommet endnu et skridt frem mod fuld overvågning, som evt. også kan benyttes til utilsigtede formål.

Diskussion og konklusion

Bygnings- og boligregistret blev oprindeligt oprettet i 1977 i forbindelse med overgangen fra boligtællinger til registerdata, men kvaliteten i BBR har været svingende. Nu har skatteministeriet overtaget ansvaret for den store opgave med at forbedre kvaliteten deraf, samtidigt med at der kommer ny fokus på data kvaliteten.

Grunddataprogrammet såvel som vurderingen er forsinket. Vil problemer med enkelte datasæt, f.eks. plandata, kunne påvirke processen? Det er f.eks. uklart hvorledes plandata anvendes i vurderingen.

Fysiske data spiller hovedrollen i processen, mens der mangler socio-demografiske data og oplysninger om lejeboliger (socialt boligbyggeri), som kan påvirke markedet i lokalområder.

Ejendomsvurderingerne bygger på et allerede igangværende projekt, Grunddataprogrammet, som dermed kan opnå nogle væsentlige synergieffekter. Det er dog et spørgsmål om datakvaliteten er god nok for alle forskellige opgaver som BBR anvendes til. Mere forskning er derfor nødvendig for at identificere hvilken kvalitet som er ”god nok” til de forskellige opgaver. Vil f.eks. forskellige parametre virkeligt give mere præcise vurderinger og er interpolationen af ejendomsværdi troværdig? Er det for ambitiøst?

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⁹ <https://skraafoto.kortforsyningen.dk/oblivisionjs/soff/index.aspx?project=Denmark&lon=10.2027929&lat=56.1277927>

Armerin, Hallgren and Song 2019 Predicting house prices - a review of the current state of knowledge and methods

Fredrik Armerin, Jonas Hallgren and Han-Suck Song

Department of Real Estate and Construction Management
KTH Royal Institute of Technology

Abstract

Både privata och offentliga aktörer är i behov av att kunna göra bra prediktioner av bostadsprisernas utveckling. Denna forskning syftar till att bidra till att öka kvalitén i sådana beslutsunderlag. Syftet med denna forskning är att göra en systematisk analys och sammanställning av prognosmodeller för bostadspriser.

Hur bostadspriser utvecklas har en stor betydelse för enskilda hushåll, fastighets- och byggaktörer samt banker och det finansiella systemets stabilitet. Det finns flera skäl till detta: En mycket stor andel av hushållens tillgångar bland de som äger sina bostäder (inklusive bostadsrätter) utgörs av bostadens värde. Många hushåll finansierar sina bostadsköp med bolån. En stor andel av de ledande bankernas utlåning utgörs av bolån till hushåll. Byggbolag som bygger bostäder finansierar normalt en stor andel av nyproduktionskostnaderna med lånat kapital. Alla dessa faktorer innebär att det finns stora risker för både enskilda aktörer, det finansiella systemet och samhällsekonomin i stort om bostadspriserna uppvisar stora prisstegringar med efterföljande kraftiga prisfall.

I tider med kraftiga bostadsprisökningar ökar skuldsättningen bland de hushåll som har möjlighet att lånefinansiera bostadsköp, medan hushåll med sämre ekonomiska förutsättningar inte överhuvudtaget har möjlighet att köpa en bostad (t.ex. på grund av bolånetak och amorteringskrav). Om och när ett kraftigt prisfall sker kan ett stort antal hushåll, bostads- och fastighetsbolag samt finansiella institut hamna i ekonomiska svårigheter, vilket i slutändan kan skapa en allvarlig och kostsam samhällsekonomisk kris!

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2 years ago at BVC 2017 in Oslo

Different kinds of AVM and the market value –
The TEGoVA technical document in EVS 2016
and
the German experience

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Automatic Valuation

Experience in Germany
and what really happens

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Und den finden Sie nicht über den dicken Daumen oder durch einfache Vergleiche mit anderen Angeboten. Ihre Immobilie ist ein Unikat. Die Analyse eines marktgerechten Angebotspreises ist der erste und wichtigste Schritt für Ihren erfolgreichen Immobilienverkauf. Denn ein nachträgliches Korrigieren des Preises ist in den meisten Fällen fatal!

Wir analysieren für Sie den Marktwert Ihrer Immobilie mit aufwändigen und erprobten Wertermittlungsverfahren. Als geprüfter Sachverständiger für die Bewertung von bebauten und unbebauten Grundstücken kennt Christoph Bempohl bewährte Methoden zur Feststellung eines Immobilienwertes – und auch den regionalen Markt.

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Das Preisgefälle auf den regionalen Immobilienmärkten ist immer wieder mal mehr oder weniger starken Schwankungen ausgesetzt. Das bedeutet auch, dass der Preis, den ein Wohn- oder Gewerbeobjekt erzielt, sich im Laufe der Zeit verändert. So wird der einstige Anschaffungswert Ihrer Immobilie höchstwahrscheinlich vom heutigen Weiterverkaufswert abweichen. Welchen Betrag Ihr Objekt bei einer Veräußerung einbringen kann, ermitteln wir anhand einer Bandbreite von Faktoren.

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Ihrer Immobilie !

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Wir wissen den Wert Ihrer Immobilie zu schätzen

Berlin, im Spätsommer 2018

Sehr geehrter Herr Bischoff,

für Sie als Eigentümer ist es ungeachtet eines geplanten Verkaufs oder einer anstehenden Vermietung wissenswert, welchen Wert Ihre Immobilie derzeit hat. Mit dem beigefügten Gutschein erhalten Sie eine **kostenfreie und unverbindliche Marktpreiseinschätzung** durch unsere qualifizierten Immobilienmakler (IHK, PersCert®, WertCert®).

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Ihnen die bestmögliche Beratung am Markt zu bieten, ist für uns selbstverständlich. Jeden Tag überzeugen wir unsere Kunden mit unseren Kenntnissen über die aktuelle Marktentwicklung und verfügen über exzellente Kontakte zu potenziellen Käufern – regional und überregional. Zudem erstellen wir Ihnen eine effektive Vermarktungsstrategie – perfekt auf Ihre Immobilie abgestimmt.

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Mommsenstraße 55
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Wir suchen dringend für vorgemerkte Kaufinteressenten eine geeignete Immobilie

Sehr geehrte Damen und Herren,

als Immobilienberatungsunternehmen, welches bereits schon über zehn Jahre in Berlin tätig ist, haben wir in den letzten Monaten in Ihrer unmittelbaren Nachbarschaft den Verkauf von drei Immobilien erfolgreich begleiten dürfen.

Dadurch, dass die Nachfrage von vorgemerkten Kaufinteressenten nach einer geeigneten Immobilie in Ihrer unmittelbaren Nachbarschaft nach wie vor sehr hoch ist, und das Interesse sowohl an Grundstücken, Eigentumswohnungen und Häusern weiterhin steigt, wenden wir uns heute einmal direkt an Sie mit der Bitte, mit uns – natürlich unverbindlich – in Kontakt zu treten, sollte eine Verkaufabsicht Ihrer Immobilie in der nächsten Zeit bestehen.

Selbstverständlich übernehmen wir gerne im Vorfeld eine kostenfreie und neutrale Einwertung bzw. Marktpreisbewertung Ihrer Immobilie, sollte dies gewünscht sein. Sie erreichen unsere Mitarbeiter jederzeit in unserem Büro in der Mommsenstraße 55 in Berlin-Charlottenburg unter der Telefonnummer: 030 - 375 926 - 65 oder per Mail: Info@Deutscher-Immobilien-Service.de

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1. A lot of members of the BVS wrote mails or discussed about the new offers in the market of valuation reports.
2. Most of them were offered by brokers for free.
2. Are these reports better than ours, equal or more worst than ours?
3. How can we test them?
4. Some of our members had personal experience but not more.

Let's make a test !!!!

But how?

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Once in Spring 2018 the BVS got a call from one of our serious TV stations.
They asked for an expert to make a report about the offers of the broker for
valuation reports for free.

I was asked and was very happy:

Let's test these Experts !!!!

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The Idea

This Station (Second German TV – ZDF) has an TV-Magazine about economics and consumers.

In this magazine every time there is a section with tests about workmen, traders, consultants. The frame about this section is very easy:

There is a grandmother who needs help or has something to repair or want to sell or buy some things or services.

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The Idea

We needed:

- ❖ a grandmother - the TV Station had an female actor
- ❖ a property with a family house – the producer found a nice building in Berlin
  - ❖ a qualified expert – I said ok and was happy
    - ❖ a fake story to tell the brokers
    - ❖ some broker– selected together with me

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The Idea

We started:

- ❖ the grandmother had a training-session with me for special words and phrases
- ❖ five brokers in two days made the data – every two hours another broker
  - ❖ the grandma got earphones and there were hidden cameras
- ❖ I was placed in front of the house in a car with a screen from the scene inside the house and a microphone to tell the grandma questions and remarks to help her

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The Realisation

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The Realisation

311.282 – 518.804 €

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The Property

Size of the Property	land plot 363: 518 m ² ; land plot 362: 67 m Total 585 m ²
Size of the building	385 m ² , living space 121 m ²
Registered charge	- land plot 362 must given to the state for free, if the street would be rebuild, - the neighbour behind the property can drive and walk to reach his home and he can uns this area for pipes and wires
Year of construction	1978
Type of construction	prefabricated home with a wooden panel construction,
Special equipment	Pool, empty since 4 years, destroyed
Modernisation	never
Environment problems	asbestos-containing material, poison in the wooden construction (Formaldehyde)

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The Property

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The Results

Broker 1	146.000 € (demolition) or 350.000 €
Broker 2	367.000 € or 331.000 € or 410.000 €
Broker 3	165.000 € (demolition of the building)
Broker 4	430.000 €
Broker 5	no answer and no value
Bischoff	126.000 € (demolition of the building, less for the rights of the neighbour and the state)

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The broker's knowledge as experts in valuation

only some examples

- ❖ no one could read the land register and the map
- ❖ three broker didn't know anything about asbestos-containing material in buildings like this, sold by this company
- ❖ two broker said, that it is not necessary to tell the truth about this house
- ❖ four brokers forgot the cost for repairing an modernisation
- ❖ there was no broker who could declare how the value was found out (methods, calculation, facts like standard-group, remaining life expectancy, etc)

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The broker's knowledge as experts in valuation

Some mistakes in the calculation

- ❖ wrong details in the different spaces (land plot, living space, etc.)
- ❖ unknown factors for development of the market or for the location
- ❖ forgotten influence of the rights of the neighbour
- ❖ a very long time for the remaining life expectancy
- ❖ wrong facts for the price of land
- ❖ using the volume in m^3 and not the area in m^2 and didn't notice it
- ❖ nobody could explain, what he or she is doing
- ❖ nobody said something about accuracy and the method of the valuation

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The broker's knowledge as experts in valuation

Noticables

- ❖ None of them made the market value but there were estimated values, calculated value for sale price or something like this
- ❖ Every broker had a full exclusion of every liability
- ❖ all the valuations and reports are not able to prove the market value for banks or authorities
- ❖ All of them used an automatic valuation model. They filled a form or made only an entry on the screen of the tablet
- ❖ There was no Valuer like it is necessary

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What is an “Automated Valuation Model”?

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What is an “Automated Valuation Model”?

AVM is a Black Box

Black Box No. 1

The Box of prices and offers

Black Box No. 2

The Box of the valuation model

Black Box No. 3

The Box of result and liability

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Black Box No. 1

The Box of prices and offers

- ❖ Are there real prices from contracts?
- ❖ Are there offers from brokers or sellers?
- ❖ Are there prices from now or from the last year?
- ❖ Are there prices from the area around the valuation property?
- ❖ Are there real prices from contracts?
- ❖ Who controlled the prices?
- ❖ Are there some corrections?
- ❖ Who published the prices?
- ❖ Is there any data protection?

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Black Box No. 2

The Box of the valuation model

- ❖ Regression model calculated with which data?
- ❖ Comparism model calculated with which data?
- ❖ Other statistics models calculated with which data?
- ❖ More than one model?
- ❖ What are the statistic results and description of accuracy?
- ❖ How often is the model tested?
- ❖ Who could change the data?
- ❖ Is there a special interest for a special result?

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Black Box No. 3

The Box of result and liability

- ❖ Which value does the client get from the box?
- ❖ Which date of valuation does the box produce?
- ❖ Is there only the value of the property or ist there a full report?
- ❖ Is the valuation comprehensible and the client can understand everything
- ❖ Is there any liability for the result?
- ❖ Who accepted this value like a bank or the tax authority?

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EVIP 6

Automated Valuation Models (AVM)

2. Definition

2.1 Automated Valuation Models (AVMs) can be defined as statistic-based computer programmes, which use property information (e.g. comparable sales and property characteristics etc.) to generate property-related values or suggested values.

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Automated Valuation Models (AVM)

2. Definition

...

2.2 For this purpose, the user must first record selected data in relation to the property to be valued. Specific information is then attributed to this data and this permits a direct appraisal of the value. The information is attributed using algorithms which search for suitable comparable data in very large electronic databases. The search depends in particular on the valuation approach being used, on country-specific rules and practices, on the type of property, on the purpose of the valuation and on the available data.

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3. Scope

3.1 AVMs are mainly used in the context of monitoring and adjusting of values of standardised residential properties in the context of supervisory requirements for credit institutions. They also play a role in property valuation for securitization, taxation, auditing and credit risk ratings.

3.2 The usage of AVMs depends on the valuation purpose. In the case of valuations for transaction purposes, an AVM produces a market value on a fully computerised basis. Valuations for lending purposes (mortgage origination) produce market and/or mortgage lending values and require control mechanisms by a professional valuer at all instances of the process in order to comply with banking supervisory rules.

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3. Scope

...

3.3 For the avoidance of doubt, as properties valued using AVMs have generally not been inspected, neither inside nor outside, such valuations will therefore not be EVS compliant, even if the valuation process is valuer-assisted. If the property has been inspected then the valuation can be EVS compliant, as long as the valuation process has been valuer-assisted.

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4.3 Valuation Algorithm

4.3.1 AVMs should rely on recognised valuation methods which are the comparison, income and replacement cost methods. They should reflect market practice and give the same priority to methods as if they had been applied by the valuer.

4.3.2 Depending on the purpose of the valuation and its basis of value, the model must enable different valuation inputs within the same valuation parameters.

4.3.4 The valuation programme must be in line with the assembling of the valuation data in order to ensure a factual concordance between the valuation scales of the programme and the inputs be derived from statistics and data banks.

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4.5 Validation

4.5.1 Validation is particularly important to the acceptance of AVM-based valuations. The benchmark could consist of actual sales prices, as market values generated by the model must correspond to them on average. At this stage again, valuer's assistance is required. AVM values shall be submitted to a plausibility check by a professional valuer. Valuers shall have the possibility to validate values on a single property basis, i.e. to manually overwrite AVM values if necessary.

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4.5 Validation

...

4.5.2 More generally, all AVM results shall be validated through comprehensive statistical analysis. Back-testing can be conducted through a comparison between market values and sales prices on the basis of a large number of cases. Statistical reviews should disclose the conclusions of the validation exercise.

4.5.3 In order to ensure both the suitability and quality of the chosen AVM model, it is recommended to process regular model validations by qualified third parties, whose skills should ideally include knowledge of the limitations of the tool.

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Requirements of the valuation

„Simple Figure is enough“

- ❖ Assessment for buying or selling
- ❖ Curiosity
- ❖ Planning the Future

„only small text,
not so many words“

- ❖ Basic for investments
- ❖ Legal problems and questions
- ❖ Decisions for tax problems
- ❖ Accounting
- ❖ „something for the papers, only the figure must be clear“

„Just for the tax authority“
„I need the report for the court“
„I want to show my former partner,
what I can do“
„He (She) has to bleed“

- ❖ Basic for investments
- ❖ Legal problems and questions
- ❖ Decisions for tax problems
- ❖ Accounting
- ❖ „something for the papers, only the figure must be clear“

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Criteria of a decision for a Valuation Report

Price and Costs

Nothing up to Thousands of Euros

Time to deliver the report

Some minutes up to some weeks

Titel and profession of the expert

Big names and Titles,
Differences not to find, but...

Valuation with a wished result

It exists really

The result must be without any mistake

No guarantee

Liability

Who is liable and for what?

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Prices of an Automated Valuation (incl. 19 % VAT)

**ImmobilienPreisKalkulator
Niedersachsen**

19,90 €

Immoscout24

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immonet

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Time until the delivery

online: just now

Research-document must sent: 3 to 7 days

Valuation report: 1 to 2 weeks

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Liability

There is no liability

In the general business terms (GBT) you can find everywhere exclusions of liability

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Accuracy

?

Experience:

Great differences for the same property

Accuracy is better in property markets with many sales (flats, family houses)

No consideration of special influences (rights on the property like life estate or right of way, contamination, very large property, neighbourhood, etc.)

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Conclusion

Online-Valuation is a business

Qualified valuation reports are needed and are another business

Fast valuation is a business too

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Urban Land and Property
Chaired by Magnus Andersson

Shrinking Megacity : Some issues of post-suburbanization in Tokyo Metropolitan Area

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Urban shrinkage is typically manifested as population decline, emerging vacant houses, and underused lands. In Japan, because of nationwide rapid aging and declining population, urban shrinkage becomes a common issue not only for small cities but also for major urban areas. It is projected that the population of the Tokyo Metropolitan Area, which is known as the world's largest megacity, decreases during 2014 and 2030. Especially in its suburbs, many suburban cities have already started experiencing population decline, and they are expected to lose a greater number of populations in the next few decades. These projections indicate the importance of discussing a way of shifting from 'growth-oriented' mindset, which is overwhelming in the current megacity planning, into more 'spatial-management' mindset that encourages efficient and effective (re)use of existing urban fabric. A major body of literature in urban studies strives to analyze the issues relevant to the growth of megacities mainly through detecting urban growth patterns. Following such a research direction, it is important to capture and analyze patterns of urban shrinkage. Notwithstanding the importance, a limited number of studies works on such a research topic. Thus, in order to grasp planning issues induced by a shrinking megacity phenomenon, this paper strives to capture and analyze such a spatial pattern of urban shrinkage. More specifically, the paper examines the trajectory and actual situation of urban shrinkage by organizing social factors based on the history of suburban development in Tokyo Metropolitan Area.

Keywords: *Urban shrinkage; suburban development; depopulation; compact city; megacity*

1. Introduction

Urban shrinkage becomes an important topic in the literature of urban studies because of the aging population and population decline observed across many developed countries (Hasse *et al.*, 2014; Nelle *et al.*, 2017; Li *et al.*, 2018; Batunova, 2018). Urban shrinkage is typically manifested as local economic decline, emerging vacant houses and underused lands (Hasse *et al.*, 2014). In Japan, because of nationwide rapid aging and declining population, urban shrinkage becomes a common issue not only for small cities but also for major urban areas. It is projected that the population of the Tokyo Metropolitan Area (hereafter TMA), which is known as the world's largest megacity (Bagan, 2012), decreases during 2014 and 2030 although the total population of megacities in the world is expected to increase during the same period (UN, 2015). These projections indicate the importance of discussing a way of shifting from 'growth-oriented' mindset, which is overwhelming in the current

megacity planning, into 'spatial-management' mindset that encourages effective use of existing urban fabric. A major body of literature in urban studies tries to analyze the issues relevant to the growth of megacities mainly through detecting urban growth patterns (Kuang *et al.*, 2014; Hernandez-Flores *et al.*, 2017). Following such a research direction, it is also important to analyze patterns of urban shrinkage

Fig. 1 The Tokyo Metropolitan Area

(Sakamoto *et al.*, 2017; Nakano, 2018). In spite of the importance, a limited number of studies works on such a topic. Thus, in order to grasp issues induced by a shrinking megacity phenomenon, this paper strives to capture the spatial pattern of urban shrinkage. More specifically, this paper examines the trajectory and actual situation of urban shrinkage by grouping social factors.

2. Data

The empirical data in this paper derives from the statistics published by the central government. Municipal population data during 1930 and 2015 were obtained from National Population Census, and the data of population projection was provided by National Institute of Population and Social Security Research. The source of housing stock data was the Housing and Land Survey for 1988, 1998, and 2013, published by the Ministry of Land, Infrastructure, Transportation and Tourism (MLIT). All the data used in this paper is open-access data accessible in the Portal Site of Official Statistics of Japan (<https://www.e-stat.go.jp/>).

3. Tokyo Metropolitan Area (TMA)

3.1 Definition

The geographical scope of this paper is the TMA. The TMA includes 5 prefectures such as Tokyo, Chiba, Kanagawa, Saitama, and Ibaraki, the area is defined by the Tokyo Metropolitan Development Plan. In this plan, TMA consist of 202 cities and wards (See Fig.1), and its suburbs defined as “suburban development areas” consists of 162 cities and wards (See Fig.2).

3.2 Geography

The total area of TMA is about 9,000 km² and approximately 80 percent of total area is habitable land. Most of the area is located on the largest flat plain in Japan, called the Kanto Plain (approximately 17,000 km²). This is one of the reason why the urbanized area have been able to spread widely to the suburbs.

3.3 Transportation and urbanization

TMA is known as a “transit megacity” that has the following characteristics of its spatial structure.

Fig. 2 Municipalities belonging to the Tokyo Metropolitan Suburbs

Fig. 3 Railway network

Fig. 4 Population density at 500m grid cells, 2015

Fig.5 Population projection of central cities and suburban cities in TMA

- 1) The total railroad length is 2,705 km and the total number of railway stations is 1,510 in TMA (Fig. 3). More than half of the total railroad length is developed and managed by the private sector.
- 2) Daily commuting behavior depends on railway transportation. According to the Transportation Census, 44 million passengers are carried by railway transportation per a day (MLIT, 2017).
- 3) Populated areas are situated radially alongside the railroad networks (see Fig. 4). Because of the importance of railway transportation, the distance to the railway station has a huge influence on land prices and housing demand in TMA.

4. Actual situation of urban shrinkage

4.1 Demographic trend

To illustrate the long-term population trend in TMA, this paper calculates the total population of central cities and suburban cities using municipal population data. The result of calculation is summarized in Fig.5. The figure indicates following two points about the population trend. The addition of total population during last 90 years depends on the increment of the population in suburban cities. During last half century (1960-2010), the total population of central cities has not fluctuate greatly, but the total population of suburban cities has quadrupled. The researchers point out the major factors that affected rapidly increasing population in the suburbs from following four perspectives.

1) Housing development policy in post-war era

Since 140 years ago, the government (which is called Edo Shogunate) controlled urbanization in order to ensure the capital defense policy. Therefore, there were only 24 cities with a population of 3,000 or more before the modernization of Japan (Nakano, 2018). After the modernization era, some areas were urbanized through land readjustment projects providing residential districts, but as shown in Fig.5, these projects did not affect the population trend critically before the World War II. After the WWII, housing shortage became an crucial issue in the urban planning field because many houses were destroyed by the war. In order to address the problem, the national government enacted a new housing policy that was composed of three acts such as the Government Housing Loan Corporation Act of 1950, the Public Housing Act of 1951, and the Japan Housing Corporation Act of 1955. Through these housing policies, a large amount of farmlands and military bases located in the suburbs was rapidly converted into residential lands (Machimura, 2016).

2) Home-owning society

The housing policy established in 1950s promoted the acquirement of homes among the middle classes, that also enhanced the economic recovery and social stability (Hirayama, 2014; Zhang, 2017). The policy has led to an increase in the number of privately-owned detached house, especially among middle-aged family household. At the same time, because the land prices had risen in the central cities of TMA driven by

the steady economic recovery, house developments had sprawled into the suburbs.

3) Transit oriented development by private sector

Private railway corporations have been an important player to provide housing in the suburbs. There are about 30 private railway corporations in TMA, and many of them have various business fields other than transportation service, such as real estate industry, commercial facility management and leisure services. These railway corporations developed houses and neighborhood community alongside their railway networks cooperating with municipale governments (Yajima *et al.* 2014).

4) Enterprise welfare

The distinctive point of housing provision in Japan is the role of enterprises that is not only employer but also provider of a housing welfare service to their employees. Many Japanese enterprises have their own corporate welfare systems to support their employees to acquire houses through a financial assistance or providing cheap-rent accomodation. Besides the housing allowances, these enterprises pay a commuting allowance to their staffs. These various financial supports by enterprises enable people to acquire houses in areas remote from their workplaces. However, due to a suburban lifestyle with a long commuting time, these welfare and housing acquirence systems are based heavily on the male-breadwinner model which prevented Japanese females from pursuing their own business career.

4.2 Urban shrinkage projection

Second point of what we can understand from Fig.5 is the future population decline observed especially in the TMA suburbs. The total population of the suburban cities is expected to decline by 1 million during next 10 years (2020-2030). More specifically, population decline is projected to emerge mainly across the area remote from a station (see Fig.6). According to Nakano and Deguchi (2019), the total number of populations within a *station area*, which is an area inside the 800m bird distance buffer from a railway station, have increased by 4.9 % during the last 10 years, yet during the same period of time,

Blue cells represent areas of significantly declining in population;
red cells represent areas of significantly increasing in population

Fig.6 Population change from 2010 to 2050

Table 1 Proportion of housing stock by land use zone in Tokyo, Kanagawa, Saitama and Chiba

	1988	1998	2013
Total housing stock	11,319,000	13,995,500	15,727,700
Industrial zone (%)	10.8	10.5	11.3
Commercial zone (%)	16.9	18.3	19.7
Residential zone (%)	64.2	63.2	62.0
The others (%)	8.1	8.0	7.0

Table 2 Population by typology of residence in the suburban cities

	1995	2005	2015
Low-rise residence	17,636,466	17,589,932	17,776,079
Mid-rise residence	5,647,148	6,440,870	6,676,650
High-rise residence	619,308	1,216,675	1,648,129
Low-rise residence (%)	73.8	69.7	68.1
Mid-rise residence (%)	23.6	25.5	25.6
High-rise residence (%)	2.6	4.8	6.3

Note: This is calculated with the data of Tokyo, Kanagawa, Saitama and Chiba excluding Tokyo Special districts.

the population outside the *station area* has increased only by 0.3%. This indicates a simple correspondence between the urban shrinkage phenomenon and the proximity to railway stations in TMA.

Photo 1 Cityscape of a suburban *station area* with high-rise residential buildings (Kawaguchi station)

The increasing population density within the *station areas* has led to a new housing trend in the suburban cities. Table 1 shows a growing number of housing stocks observed in the commercial zone instead of the residential zone. This is because a majority of the *station areas* is originally categorized into the “commercial zone” by the city planning. The original planning purpose of the commercial zone is to densely develop commercial facilities such as banks, cinemas, restaurants and department stores. Hence the population who live in high-rise residential building is significantly increasing, as shown in Table 2 and Photo 1.

5. Discussion and conclusion

5.1 The pattern of urban shrinkage in a megacity

Urban shrinkage is often represented by depopulation, decline labor market, and decreasing demand on land use for commercial activities (Hasse *et al*, 2012). Some of those findings are compatible with the case of TMA, but more precisely, the suburbs polarize into densely inhabited areas and depopulated areas. In many cases, the housing stocks built during the period with growing population are situated in such depopulated areas, which are very remote from a station. An increasing number of vacant houses and the sustainability of the maintenance of social infrastructures are becoming new critical urban problem within these areas. On the other hand, the densely inhabited suburban areas, which are located

within the *station area*, have a greater number of housing stocks and population ever than before despite the overall depopulating trend within the entire TMA. This is a new finding of the urban shrinkage phenomenon, but why does a population increase happen in the *station area*?

From the perspective of housing development, it is possible to argue that there are demand-side and supply-side reasons. As for the demand-side, the demand for housing developments within the *station areas* has increased recently because the lifestyle that prefers to live closer to a public transportation node is becoming ever more popular. This change in the lifestyle is happening mainly because of an increasing number of the double income families which *was not* supposed to be a majority of the welfare system in the past. Also in the period of the depopulation, the land prices are generally prone to decline, and this makes housing developments at the *station area* much easier than ever. As for the supply-side, the demand for commercial floors has been decreasing since e-commerce is widely adopted by different industries, and that trend leads to a decrease of the demand for more commercial land use. Thus, there is an increasing incentive for land owners of commercial zone to convert their lands into residential use sites, which is more profitable nowadays.

5.2 Challenges to a “compact megacity”

The national and municipal governments probably have a positive image about these trends because that

is suitable for their “compact city” policy. The “compact city” policy in Japan promotes the redesign of a diffused urban structure through densification of urban fabric along transportation systems. Certainly, these geographical trends lead the TMA to a megacity with a compact spatial structure, but in its process, the institutional shift of urban planning is inevitable. Firstly, a measure to reduce the damage of “reverse urban sprawl” is desired to be discussed. “Reverse urban sprawl” is the problem of the unpredictability and irregularity of emerging vacant lots and houses in the suburbs. As mentioned above, the housing stocks built during the period of the growing population diffuse to the areas inconvenient in the public transportation services. Senior people live in a privately-owned detached houses becomes also a critical problem for these areas. Secondly, improving urban amenities such as park, school, walkway and public facilities is indispensable to the densely inhabited suburban areas. Because a majority of these areas is included in the commercial zone, where residential facility development is *not* an original intention of the urban land-use zoning, municipal governments have no obligation to develop or improve the urban amenities according to the urban planning law in Japan. Further research should pay more attention to analyzing and proposing a preferable design of densely suburban environment and methods to realize good urban amenities through the densification of housing provision around a railway station that is a key to design a “compact megacity”.

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Title: Vacant urban land in Tokyo – a case study of Kita-Senju

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In recent years, the number of vacant houses is increasing in Japan, as the population decline in local communities. In this context also the urban settings experience depopulations even in large cities such as Tokyo. In this paper we are analyzing Kita-Senju, a centrally located neighborhood in Tokyo. The analysis is focusing on the presence of vacant urban land. Within the neighborhood there are large number of vacant land.

Vacant and derelict land, which often includes abandoned buildings and is frequently used as a dumpsite, is very discouraging for residents and conveys negative images about their community. According to Kivell, “derelict and vacant land is a significant part of the overall land use pattern of most cities and amounts to a major problem in a number of them” (1993, p.175). Abandoned buildings are fire hazards, may host drug trafficking activities (Cohen, 2001), and can be indicator of neighborhood decline, reduce a sense of community, and discourage investment (Goldstein et al., 2001). This reduces the quality of life and property values for the whole neighborhood, further reducing redevelopment and investment, suppressing local tax bases, and stressing municipal budgets due to the administrative and maintenance costs incurred (Crauderueff et al, 2012). Previous research highlight vacant land suffers from both political and economic problems (Németh & Langhorst, 2014).

Vacant and derelict land, which often includes abandoned buildings and is frequently used as a dumpsite, is very discouraging for residents and conveys negative images about their community. According to Kivell, “derelict and vacant land is a significant part of the overall land use pattern of most cities and amounts to a major problem in a number of them” (1993, p.175). Abandoned buildings are fire hazards, may host drug trafficking activities (Cohen, 2001), are an indicator of neighborhood decline, reduce a sense of community, and discourage investment (Goldstein et al., 2001). This reduces the quality of life and property values for the whole neighborhood, further reducing redevelopment and investment, suppressing local tax bases, and stressing municipal budgets due to the administrative and maintenance costs incurred (Crauderueff et al, 2012; U.S. Government Accountability Office, 2011). Vacant land suffers from both political and economic problems (Németh & Langhorst, 2014).

Proposed abstract

Real Estate Research Conference 9-10 May, Malmö

Public space and the politics of property: the case of the attempted Apple store in the King's Garden of Stockholm

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In the past decades, urban public spaces in many Western cities have been greatly transformed with increasing privatization, commodification and control. Many scholars have voiced concern about the future of public space, whether we are witnessing its end, or we are seeing the transformation of the meaning of “the public” itself (Staeheli and Mitchell 2008, Madden 2010).

Central to these discussions are questions about to whom public space belongs, what activities it accommodates and how it is related to the politics of property (Blomley 2004). While the questions of access and use of public space under privatisation have been widely studied, the connection between public space and the politics of land and property is yet to be fully explored, especially with regards to the dual role of the municipality as land owner and regulator (Staeheli and Mitchell 2008, Olsson 2018). This is particularly relevant for Sweden, where a strong tradition of public ownership and management of public space has begun to change but has yet attracted due notice.

This paper explores the discourse of public space in Sweden through the lenses of property politics. The paper is based on a case study of Apple's attempt to build a flagship store in the Kings' Garden, one of the most prestigious public spaces in central Stockholm. Although Apple's application was finally rejected, the planning process and the discussions surrounded this case illuminate the contradictory nature of public space as a public property and illustrate how the focus on the rationale of land/property ownership may lead to the erosion of the public quality of public space and the shrinkage of the public realm.

Keywords: Public space, Property, Privatisation, Stockholm, Apple.

8th Real Estate Research Conference – 2019, Malmö University

Attract firms and live in Economic Activity Zones

The new factors that make regions attractive: towards “inhabiting” activity zones¹

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Catherine Mercier-Suissa, Jean Moulin Lyon 3 University, Magellan research centre EA 3713
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CoActis research centre, EA 4161

Introduction

During the growth's period, French policies were in favour of the construction of activity zones in city outskirts and the relocation of urban settlements to peri-urban areas (Delamarre et al, 2015). These policies somewhat endorsed urban sprawl, commuter mobility and the functional specialisation of space (Larrue, 2010).

All that is now changing: in the face of the challenges associated with sustainable development (SD), planning and urban or peri-urban renovation policies today attempt to encourage mixed-use urban spaces and the increase of population density and land use diversity to reduce the

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¹ Led by IAE Lyon, this study was conducted within the framework of a 7-month project (June 2018 to April 2019) entitled CoPartDev (Co-construction partnership of development projects for businesses and regions). It was funded by Pulsalys, Société d'Accélération du Transfert de Technologies (SATT) Lyon – Saint-Etienne (an organisation working towards the acceleration of the transfer of technology).

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effects of urban sprawl and preserve urban ecosystem services (Brueckner, 2001; Grimm et al., 2008; Elmqvist et al., 2013).

Beyond their environmental impact, these policies have generally failed to encourage social and functional diversity, even in the very specific and emblematic case of eco-neighbourhoods (Ademe, 2018): criticism has often been levelled against these neighbourhoods because of their isolation (which encourages the use of private cars), the lack of functional diversity (which separates housing and professional uses) and the effect of gentrification associated with higher real estate and land prices (Renauld, 2014).

While functional diversity is often highlighted as an ideal to be achieved, the issues associated with the occupation of space are often analysed in a fragmented manner between residential uses and productive uses. On the one hand, economic attractiveness is thought to explain why businesses establish themselves in generally dedicated activity zones or productive spaces and prefer a wide labour market context and non-economic amenities likely to attract future employees (Mercier-Suissa, 2004). On the other hand, it is assumed that residential attractiveness explains why and how people settle on different spaces, depending primarily on the living conditions and the associated amenities,³ which make it possible to invest in the life of local communities through services or infrastructures (Bourdeau-Lepage, 2015; Bourdeau-Lepage et Golain, 2015). This analysis applies to urban areas as well as to less attractive areas such as rural areas or small towns whose centres are currently being abandoned.

To the best of our knowledge, the available literature in management and economics has hardly addressed these two aspects in parallel. While several studies have shown that there are intrinsic factors at play in regions, i.e., physical, geographical, economic, social and political factors that are decisive in the choice of the location of a business (Crozet et al., 2000), little interest has been paid to residential attractiveness. Our study thus aims to take a cross-cutting approach to these two aspects of attractiveness, i.e., economic and residential attractiveness. Based on a review of the literature about the different criteria of economic attractiveness as perceived by local communities, we will show that in the case of an Economic Activity Zone (EAZ), these traditional economic criteria hardly help in differentiating the EAZs located in the same region. Indeed, the factors of attractiveness highlighted on the websites of local authorities largely promote the same elements (Bouba-Olga, 2011).

Consequently, to describe the attractiveness of EAZs in a more detailed manner that may allow us to discern the differences between them, in addition to the traditional economic criteria, we will also consider new differentiating elements developed from the specific geographical question of living. Regional attractiveness should not be understood from the needs of businesses alone but also from the perspective of users' needs (businesses, residents, employees and local communities). The question, then, is to understand how various stakeholders invest, develop and enhance their region.

To test the living hypothesis, we will compare the forms of development and investment of five EAZs located in the same geographical location, i.e., in Lyon East (the department of the Rhône, France), but sufficiently different to allow us to propose a typology of the characteristics of living in this specific context.

In the first part, we will show the contributions and limitations of so-called traditional attractiveness criteria. These criteria are not always applicable to the internal issues of EAZs.

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³ While Economics and Management studies prefer the term "positive externalities", Geography and Urban Planning studies privilege the term "amenities".

Drawing on five case studies, the second part will propose alternative criteria, which we will then develop and justify in the third part.

Part 1: Regional attractiveness according to local communities

We will begin by analysing how the factors of regional attractiveness are currently presented to potential investors by French local authorities.

The development of regional attractiveness by local authorities is often guided by the definition proposed by Fabrice Hatem (2004): *“Regional attractiveness is the ability of a given region to attract substantial direct investment (DI), irrespective of whether the investors are French or foreign.”*⁴

This definition concerns a region’s economic attractiveness and refers to the location factors of national or foreign companies. Hatem (2004) suggests that the approaches analysing attractiveness may be broken down into five broad categories: macroeconomic approaches, meso approaches, microeconomic approaches, approaches based on the analysis of decision-making processes and, lastly, approaches focused on the image of a region.

Macroeconomic approaches allow analysts to develop global indicators to measure the “mean” attractiveness of a country or a region (EU; NAFTA, Asia). They make it possible to classify countries and thus to understand relative territorial competitiveness (United Nations Conference on Trade And Development (UNCTAD) studies⁵). Three types of location factors have been identified:

- a. “Prerequisite”: political, social stability...
- b. “Differentiating factors”: clusters, networks, clubs...
- c. “Discriminating factors”: labour costs, taxation levels...

Meso economic approaches, based on the work of A. Marshall (1920), highlight agglomeration effects. These approaches analyse competitiveness clusters and businesses’ networks (Porter, 1993). Regional economy studies (Colletis et Pecqueur, 1993, 2004) have analysed the conditions for the development of specific assets (research centres, engineering schools, qualified workforce...) in local production systems (LPS). They have identified the strategic assets of a region as well as regional factors of differentiation and attractiveness.

Microeconomic approaches are based on comparisons of profitability according to various sites. Their objective is to determine the best possible location for a specific project.

Decision-making approaches focus on the decision process to choose the project location. It therefore involves analysing the specific decisions taken by individual agents.

Lastly, marketing-based approaches, which focus on a region’s image are designed to enhance the value of specific locations. They allow the implementation of a marketing discourse and a regional communication strategy, and create a “distinct” image around a region. Local development authorities are currently developing territorial marketing policies which seek to make regions appealing by promoting their merits and uniqueness. However, Olivier Bouba-Olga (2011) argues that:

“Policies to enhance regional attractiveness evokes images of an arms race. Regions are increasingly funding corporate services in an attempt to attract them, but because

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⁴ It is our translation.

⁵ **IPIE**: KPI in terms of inward investment; **IPAEI**: indicator of a region’s potential to attract in terms of inward investment. Methodology available on the UNCTAD website devoted to the global investment report, “The inward FDI potential index-Methodology” - www.unctad.org

all the regions are doing the same thing, there are no significant changes in attractiveness.”⁶

From these five approaches emerge the factors that determine the location and thus attractiveness of businesses. We refer to these factors, which are economic factors above all, as traditional factors. We find :

(a) general factors derived from econometric studies, economic statistics such as wage rates, GDP, and tax rates (Gaffard, 2005) are decisive traditional factors in the choice of the location of a production or distribution activity for a company hesitating between two different regions of the world or between two countries with distinct characteristics (Christian et al., 2000).

(b) specific factors derived primarily from polls, a market's proximity, the existence of scarce resources, the qualifications of the workforce, the quality of the business environment and infrastructure, and potential access to a cluster or a business network also explain the choice of business location. While these latter factors are somewhat more distinctive than the former ones at the sub-regional level and are decisive in the choice of business location, they are more relevant in describing a region than in differentiating geographically close EAZs.

That said, could these factors allow us to differentiate geographically close EAZs located in the same region? We will return to this later.

These different approaches to regional attractiveness reveal two distinct visions: the first comprises **investors** seeking location factors conducive to the development of their activities, and the second involves **public authorities**, which put forward the characteristics or strengths of their region (and therefore of their EAZs) based on the values they seek to promote. It is primarily on the referral sites of EAZs that one may identify the factors of location, and thus attractiveness, adopted by public authorities.

According to the grid developed by Rouquette (2009), it is possible to compare different web sites that highlight the specific factors of each zone, as perceived by local authorities: these are “**traditional attractiveness factors**” applied at the local communities level (See Table 1 Annex 1).

The websites of local authorities rarely report on all these values (Mercier-Suissa and Thivant, 2012). The analysis presented on these websites, highlighting an attempt to increase regional attractiveness via websites, indicates that while there is an obvious willingness to provide information to businesses, the data are sometimes difficult for businesses to use because they are poorly described or absent⁷.

In addition, while these criteria may enable local authorities to enhance EAZs at the **sub-regional scale**, one may wonder whether they are relevant for differentiating geographically close regions. While the characteristics of different EAZs help inform the location choice of a business, they do not provide information on the region's land use, which we believe differs across regions.

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⁶ It is our translation.

⁷ The analysis of ten websites reveal the following issues:

1. A somewhat vague presentation (real availability of land)
2. Transport links or infrastructure are not always clearly indicated or are poorly positioned.
3. Lack of information on the dynamics of the employment market.
4. The websites are exclusively in French (what of foreign investors such as English-speaking investors?)

Drawing on the analysis of five geographically close EAZs, we will thus attempt to define new factors of differentiation.

Part 2: Empirical analysis of five EAZs in Lyon East

To better understand the functioning of an EAZ and highlight the new attractiveness factors, we conducted an empirical study on five EAZs located to the east of Lyon. These EAZs were selected because of their diversity and their geographical proximity⁸.

Methodology

Following several field visits, we wrote a discovery report, which provided an initial description of the EAZs. We undertook documentary research for each zone using different sources: archives, research studies, and urban planning documents and wrote a review for each EAZ. We then developed interview guides (adapted to each area) for each of the stakeholders, managers, urban developers, head of business associations, public authorities involved (Chamber of Commerce and Industry, Town Hall, Metropolis...), and users (employees and residents). We conducted in-depth interviews lasting approximately one hour. These interviews were recorded then transcribed (See Table 2 Annex 2) before being coded and analysed, allowing us to undertake a content analysis (Hubermann and Miles, 1984).

In addition, we administered questionnaires online or via face-to-face encounters to question the area's users such as employees or residents.

The information collected from the documentary review, various discourses, surveys, and observation made data triangulation possible, allowing us to ensure validity.

This approach led us to highlight the games actors play and to understand the governance of each area. It also enabled us to develop the diagnostics of the five EAZs based on a uniform diagnosis model and to identify challenges specific to each EAZ. We then undertook a comparative analysis of the EAZs to identify the factors of attractiveness of each zone. Lastly, we examined the development scenario of each zone.

To complement and enrich this study, walks in urban areas allowed us to develop photographic reports, which in turn enabled us to develop landscape diagnoses and identify new factors of attractiveness.

Analysing EAZs

The five EAZs analysed are located in Lyon East. This region boasts a wide variety of economic sites (Technology Parks, Business Parks, EAZs, Concerted Development Zones (CDZ), and Industrial Zones (IZ), ranging from business parks to logistic zones). There are strong interactions between these enclaves and their development is closely linked. Two airports of the Lyon metropolitan area are located there. The five zones were selected because of their potential for renewal, densification, land use intensification, and the opportunity to develop new service offers. The following zones, located in three territories more or less in connexion

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⁸ The CEREMA (2014, p 7) defines Economic Activity Zones as follows: "An economic activity zone refers to the concentration or grouping of economic activities (crafts, tertiary, industrial and logistics) on a perimeter corresponding to a land use operation undertaken by a public contractor or by private developers/investors who sell or lease land and buildings to businesses". Influenced by policies and excluding all forms of private land use, these zones are often referred to by different names: business parks, eco-parks, eco-zones, clusters of economic and technological activities, etc. The five zones we analysed all correspond to these definitions because they all depend on public development operations, often in partnership with private operators.

with Grandlyon Metropol (*Porte des Alpes*, *Meyzieu-Rhône Amont* and *Communauté de Communes de l'Est Lyonnais*), were selected:

- in the *Porte des Alpes* area: « Parc Technologique » and « ZAC Berliet »,
- in the *Meyzieu-Rhône-Amont* area and Metropolitan region: Meyzieu-Les Gaulnes and the « Carré de Soie »,
- and in the « *Communauté de Communes de l'Est Lyonnais* » area (CCEL): « ZA Mi-Plaine ».

Map 1a: Economic sectors of Lyon East and the identification of the five EAZs selected

Source : From www.economie.grandlyon.com

Map 1b: Economic sectors of Lyon East and the identification of the five EAZs selected

Source : HERRERA Kévin, Avril 2019

Key findings of the empirical study

Each EAZ has different issues and characteristics, as summed up in Table 3.

Table 3: Presentation and main features of the 5 activity zones selected in Lyon East

Zones Criteria	Parc Technologique de Lyon	ZAC Berliet	ZI Genas Mi-Plaine	ZI Meyzieu – Parc Les Gaulnes	Carré de Soie
Localisation					
Creation date	Project realized in 95-96 with SERL – Opening in 2002	2009 Urban renewal from a Renault Trucks test track	50's	1961	2009 urban projet (re-habilitation and and urban extension).
Studied area Main activity	Whole area Services	West of Saint-Priest city Structuring automotive industry	Old part of the zone. Logistic	Old perimeter Varied industries	Area bounded by Avenue du Bohem North, la rue Alfred de Musset South, la rue de la Poudrette West, l'avenue Roger Salengro East. Services and late industry (TASE)
Traditional factors	140 ha / 200 to 220 firms / good accessibility / Land attractiveness, no extension impossible.	100 ha (ZAC) / 110 headquarter / Getway and exit for Metropolitan area (Rocade Est et D318) / Available land.	300 ha / 180 firms / Saturated access roads Available land 12 ha.	137 ha / 200 firms members of business club (AIRM) / Good accesiblity / Available land 5,7 ha.	90 ha out of 500 ha / more than 1000 firms / Good accessibility / Available land including wastelands.
Strenghts Weaknesses	Environment Lack of social life Showcase effect	Heritage Inhabitants social life not enough considered	Economic dynamism Logistics Structured around truck traffic	Territorial Industrial Ecology Experiment failure	Heritage Mixity. Internal access and image
Synthesis	Environmental area without functional and social mixity	Dominant sector Mixity in development	Aging area Underpromoted mixity	Disconnected area, but economic and environmental innovation.	Mixity promoted, but large perimeter and urban metropolitian model.

The areas studied were geographically close to one another. They were set up at different moments, primarily around two main periods: the 1950s to the 1960s (ZI Genas Mi-Plaine, ZI Meyzieu) and in the 2000s for the other three EAZs analysed. External accessibility is still present (highways, airports...). Their essential interests range from industry (ZAC Berliet, ZI Meyzieu) to the tertiary sector (Parc Technologique, Carré de Soie), or logistics (ZI Genas Mi-Plaine). Each EAZ is marked to a greater or lesser extent by its history: the development of two areas has been strongly marked by their history: ZAC Berliet, whose history is related to the single automotive industry, and Carré de Soie, with its iconic TASE factory. Functional and social diversity is more and less present in studied areas. The amenities available in the zones are related to the economic situation (logistics versus offices) and to development choices (showcasing versus functionality of the zone). SD is not addressed in the same manner in each zone.

The **Technology Park**, a landscaped park, has been built entirely with an environmental target of quality. It comes across as a showcase for environmental technologies for prestigious multinational companies gathered in an association. There are no employees here and services are limited to a few catering services and an organic market. There are no houses. Passers-by and families go to the park during their leisure time.

ZAC Berliet is a former industrial zone that was developed on a mono-industry model. As such, it has a strong industrial history. The history of the site, collective imagination, the proximity to employment, and the family implantation of a paternalistic company have all played a major role in helping former inhabitants take ownership of the area. Recent urban renewal has brought new populations with new expectations in terms of services: nurseries, schools, accessible shops, gyms, etc. There is thus some form of dissociation between the expectations of people from different generations. Urban policies have taken the elements of functional diversity into account.

The **ZI Genas Mi-Plaine** zone, dedicated to logistics, is characterised by complex governance. Indeed, it is attached to different public institutions of inter-municipal cooperation (IMC) which have different objectives and means. The relationship between the historical urban developers and the local authorities is rather complex. The ZI Genas Mi-Plaine is an abandoned zone disconnected from the city. It is a degraded area stacked with several overlapping layers of development. In addition to noise nuisance and heavy traffic, there are practically no services. Moreover, there is a segregating effect associated with access to the few services available which are reserved for lorry drivers. This zone is a particularly emblematic example of the constraints preventing the involvement of different people in this space.

ZI Meyzieu – Parc des Gaulnes is a traditional non-specialised industrial zone which has attempted to renew itself through innovative economic actions around industrial ecology. The SIEL project (Industrial Synergies of Lyon East), driven by the Association of industrialists of Meyzieu region (AIRM) between 2013 and 2016, was abandoned and the orientation of the zone was refocused on more traditional economic issues. Suffering from an outdated image and struggling to attract employees, the zone's manager decided to implement an employment service in relation with the public service. In addition, gaps were identified between the activity zones and the city. Although the inhabitants of Meyzieu regularly pass

through the EAZ while going to work or to their places of entertainment, there are neither exchanges nor economic ties between these inhabitants and the businesses present in the EAZ.

The **Carré de Soie** is an urban area currently undergoing substantial urban renovation and renewal. Relatively compartmentalised spaces that appear somewhat non-integrated have been maintained. The main pole of service is a shopping centre defined by an ultra-modernist image. This image appears incompatible with the heritage image of the former adjacent working-class neighbourhoods, an image associated with an iconic factory (which has since been renovated) and a rich social life, some traces of which still remain in the urban landscape.

All these elements have allowed us to propose Annex 3 - Table 3, which summarises the issues encountered in each area.

This analysis shows that the criteria we refer to as traditional criteria do not allow us to sufficiently differentiate between the EAZs analysed. Beyond traditional criteria (land and economic activities), we identified three major issues associated with the development of zones: environmental issues, the cohesion of actors in the EAZs, and functional and social diversity. This means that to understand regional attractiveness, other criteria must be taken into account.

Part 3 - Results and discussion

The issues identified in the activity zones we have analysed led us to review the criteria that may make it possible to differentiate between these zones. As mentioned earlier, the criteria we perceive as relevant relate more to the internal rather than the external characteristics of the zones. They thus relate to the lifestyles and land uses of the zone and concern both residents and businesses.

Such a perspective invites us to shift from a production vision of activity zones (which revolves around attractiveness and location) and to highlight characteristics more in line with inhabitants' concerns: the city must attract as many residents as companies (Moonen et al., 2015). There is thus a need to shift towards a residential vision of productive areas. This may mean taking an interest in the locational decisions of households: beyond traditional locational criteria (transportation costs/housing prices), households (or inhabitants) find appeal in different amenities, such as natural amenities, facilities, access to rapid transport systems, and the quality of schools (Bourdeau-Lepage, 2015).

We thus propose to first review the issue of attractiveness through the lens of "new criteria". These criteria lie at the intersection of the expectations of businesses and residents as they take an interest in the issue of the mixed uses and functions of activity zones, or in larger spaces if the zones are already integrated within mixed spaces.

These criteria, which can be found in Table 4, have allowed us to develop a new typology of the zones analysed to characterise the **modes of inhabitation** of each zone. It is thus possible to classify the zones according to a **decreasing gradient of habitability** which, in Table 4, primarily relies on the criteria of functional and social diversity. The forms of habitability are also dependent on the area's history (for instance the type of economic exploitation) and the structure of the associated habitat (for instance, whether or not the habitat may be turned into a heritage site). The nature of the insertion within the urban fabric (for instance

connected to a metropolis) is a decisive factor undoubtedly related to local policies and can thus not be easily changed in the short term.

The “Carré de soie” zone has the most mixed-use developments because it is at the centre of an urban renewal project in which diversity is a major concern. Diversity, however, has been formalised based on metropolitan criteria: for example, inhabitants evoke the absence of local businesses despite the presence of the huge shopping centre that has been built on the zone. Vegetation in the public spaces is scant, and the area has a somewhat mineral appearance.

At the other end of the typology, the Genas Mi-Plaine zone is an emblematic figure of a logistics activity zone, complete with associated nuisances: noise, traffic-related risks, unattractive public spaces, insufficiently used public services, etc. Between the two, the ZAC Berliet has more diverse uses. However, there is a large gap between former inhabitants (workers) and new inhabitants (young families) despite the local authorities’ attempts to promote social diversity through initiatives such as the intergenerational park. The technology park represents for businesses what eco-neighbourhoods represent for residential spaces: a beautiful but scarcely used environment, which comes off as a showcase for handpicked businesses often associated with major international groups. For instance, recreational activities are undertaken on days other than working days, by families with no ties to the businesses in the zone.

The Meyzieu zone is interesting for the experimentation of industrial ecology which symbolises the potential shift from the productive model and a movement towards new business models. Despite its failure, it shows that change is possible. The production space, however, appears to be disconnected from the city, despite the existence of renovation and integration projects.

Table 4: New criteria of attractiveness for the five EAZs analysed in Lyon East

ZAE Internal attractivity criteria	Carré de Soie	ZAC Berliet	Parc technologique	Meyzieu	Genas
Internal mobility + access	Integrated in the city	Partly off-center	Infrequent public transport	Sidewalks in poor condition	Unprotected bike path
Living environment	Modern urbanism	City gardens of the 30s atmosphere	Beautiful, but scarcely used environment	Green zone, where uses cohabit (road + bike path + pedestrian path, but high voltage lines)	Sidewalks present but wastes and parked cars.
Housing, habitat	Mixity of habitat Dense vertical urbanism Ordinary buildings.	City garden habitat and ZAC collective housing	Non housing Hotel : business tourism	Proximity of housing, but public transport is the upside of public parking.	Few housing One allotment
Public places	Landscaped esplanade Collective gardens	Multigenerational family park Collective gardens outskirts	Domesticated nature Landscaped walk ways	Green zone	Green area located near bonduelle company Food truck
Collective life	Territorial project, but no proximity services.	Collective life promoted by public policies	Only business club, which is very active	Food truck difficult to find, located in a container	Chip shop Weak collective life (« smoke outside »).
Comments	Mixity Modern urbanism Linearity Flow area (“façadisme”, “cornichisme”)	New forms of allotment : vertical housing vs horizontal housing Industrial history.	Mixity not considered and depending on the weekdays	« Controlled » and « regulatory » biodiversity No collective life, even if proximity of the city centre. Zone potentiellement aménagée sous certains aspects, mais dont la configuration empêche tout développement d’une vie collective	Area mainly dedicated to economic activity Ordinary landscape.
Classification	Metropolitan living	Allotment living	Smart living	Frontier living	Industrial living

Drawing on the “transformation of activity zones into residential areas” criteria, the typology we propose allows an intuitive understanding of the inhabitation criterion. We would like, however, to further our understanding of this concept and better grasp how it is applied. To this end, we must amply justify our desire to integrate the issue of “economic inhabitation” and use the concept of inhabiting rather than that of location (residential or economic).

We have borrowed the concept of inhabitation used here from geography studies, notably from the founding studies of modern French geography, i.e., Vidalian geography (Morel-Brochet et al., 2012). Here, inhabitation is analysed from the perspective of both land use and lifestyles, with a focus on permanent habitation and environmental constraints (Lazzarotti, 2015).

More recently, notably in line with changing lifestyles, inhabitation has increasingly emerged as a concept that seeks to transcend mere consideration of permanent lifestyles within clearly defined and stable locations in order to take into account mobility and the multifaceted space that individuals occupy in the world (Lazzarotti, 2004).

This concept means several things (Lazzarotti, 2015). In particular, the concept of inhabitation may be mobilised effectively to address the relationship between individuals and their environment and the conditions for their compatibility, as the analysis of E. Reclus’ works by Lefort and Pelletier (2015) proposes. The concept of inhabitation thus appears to be in line with the modern issues concerning the transformation of modes of production and lifestyles, associated with attempts to reduce the impact of human activity on the environment.

We thus believe that inhabitation is capable of expressing how individuals take ownership of their space and shape it. In our view, the concept makes it possible to do away with the usual distinction between an approach based on lifestyles (the issue of residential attractiveness) and an approach based on production activities (the issue of economic attractiveness). It seems necessary to focus on the **uses and users of activity zones** (i.e., on residents, employees, local communities or businesses) to more entirely free ourselves from the dichotomous view of space conveyed by studies that have focused on traditional factors of attractiveness.

By paying attention to uses and users, we can adopt a collective perspective to our study: we have therefore decided to disregard the sensory dimension of inhabitation which is merely one of the numerous possible entry points to this study (Lazarotti, 2015). Moreover, we have also chosen to approach the study by focusing on collective actors rather than on individuals’ experiences (Lussault, 2015).

Our vision of inhabitation also differs from the totalitarian view of the urban utopias of the 19th century such as that defended by Godin and his social palace (*Le Familistère*), where productive and social functions took place within the same space. Although the workers employed by the factory and living in *Le Familistère* had largely better living conditions than other workers of the time, they were in reality subjected to some form of social control, as Foucault’s studies highlighted and exemplified through the example of the Panopticon. To respond to criticism concerning the possibility of drifting towards a logic of confinement or reduced freedom specific to the Foucauldian view⁹, we must thus assess **the terms of production (or the making) of this inhabitation**.

Insofar as our fundamental view is that uses (and their hybridisation) should shape space, it seems reasonably coherent to propose a constructivist and pragmatist interpretation of inhabitation (Lussault and Stock, 2010). Nevertheless, rather than base our interpretation on

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⁹ In some ways, several elements of this totalitarian utopia may be found in the vision of eco-neighbourhoods as autonomous spaces.

individuals' subjective relationship to space, we propose to focus on the social interactions between individuals to understand the terms that shape the construction of this sociability. To this end, we must ideally begin by establishing an analytical framework to understand the different forms of construction and then analyse them. This study will propose a number of hypotheses relative to the first phase before proposing indicators to assess the second phase. We posit that inhabitation requires functional and social diversity, which means that in addition to environmental sustainability criteria, users' involvement in the zone beyond business-related functions must also be developed. This involvement requires three types of sociability (or social interactions) that allow the co-construction of the territory around a mode of inhabitation:

- **sociability that attracts inhabitants:** based on the services available such as shops, schools outside the places of living themselves and "local" businesses (for instance, with the shopping centre as a symbol of metropolitan trade, a local market in the area could be a good criterion);
- **sociability that attracts employees:** the question of internal mobility in activity zones is important, and the absence of this mobility is a factor of exclusion with regard to the possible uses of the zone. Beyond this requirement, the integration of employees in the different spaces of the zone is necessary if it is to be progressively considered as a living space. Company mobility plans, sports associations, collective events created by companies and local associations (such as cross-country sports), product sales, or a concierge service are potential elements for the construction of this sociability.
- **sociability shared between inhabitants and employees and, more broadly, different forms of hybridisation of uses and users:** activities between inhabitants and employees are often rarely integrative. One might imagine creating shared spaces, such as co-working spaces, or creating different sharing options as proposed by a functional economy (for instance, shared parking, car sharing, or sharing equipment between employees and inhabitants). The development of public spaces is important because, other than spaces for recreational or walking purpose, it also allows to create meeting places and places for socialising (Collectif point virgule, 2017).

Ultimately, rather than attempt to determine the specific forms of sociability, the challenge is to try and understand the conditions for the potential co-construction of different forms of cooperation between users across the spaces we analysed. Several innovative examples of activities from companies, employees or residents, and associations or local communities have been considered: the organisation of races by companies, festive shows organised on EAZs, joint activities in public spaces, sports activities that encourage mixing, or the incorporation of the economic activity of both employees and residents.

This implies opening up spaces and lifestyles and rethinking their configuration as well as their relationship to the environment, the circulation and flow within the zones, the types of activities, the shops, the houses, the integration of buildings, and so on. Naturally, the idea is to recreate proximity, quality of life, and bring nature into cities, all made possible by an increase in service-based activities that have made residential and production activities compatible and indeed complementary.

While one may accept this new conception of inhabitation, much remains to be done with regard to the operationalisation of the criteria. Several options make it possible to propose an initial screening of these criteria: studies on sustainable territories (Bourdeau-Lepage, 2015) undertaken in the Greater Paris area propose criteria focused on residential attractiveness developed from a variation of the concept of amenities (Bourdeau-Lepage, 2015) and capabilities (Bourdeau-Lepage et al., 2018). These criteria shift away from the cross-cutting dimension linked to the quality of territories that interests us and underscore the difficulty associated with data collection.

For businesses, the issue of quality has largely been addressed through corporate (via corporate social responsibility models for instance) or territorial approaches (labels and certifications such as the PALME ecological Charter)¹⁰. These approaches have often taken into account environmental and landscape quality issues and now also focus on urban sprawl and land artificialisation (Gillio, 2014). More ambitious actions today speak of the sustainable planning and management of these activity zones from a more global framework (ARPE, 2018). According to this ARPE report, this implies shifting from a logic of economic development to a logic of “economic planning”, which must be conceived as an “urban project”. Alongside these changes can also be found changes associated with production models such as those related to industrial and territorial ecology or to a circular economy.

ARPE’s document is thus completely aligned with our inhabitation concerns and offers practical solutions consistent with our views: one of the challenges facing these zones today is the need to reclassify them and include them in the urban fabric, and from a functional perspective, a reconstruction of how they work or what we may refer to as “urbanity”. However, while the objectives are clear, their operationalisation based on criteria has not been explicitly proposed.

We therefore propose a first draft of a criteria grid. This grid draws on a review of several studies focused primarily on quality and territorial planning proposed by the OECD (OECD, 2014) specifically for France. These studies were initiated following the work undertaken by the commission led by Stiglitz-Sen-Fitoussi (Stiglitz et al., 2009) on well-being measurement and the role of GDP. We also drew on other studies on the territorial indicators of well-being (Jany-Catrice and Zotti, 2009) and our own work on the issues of territorial development, performance measurement of industrial and territorial ecology approaches (Decouzon and Maillefert, 2012; ELIPSE Platform), and new business models (Maillefert and Robert, 2017).

Our reflections around these studies and our own empirical study suggest that nine areas may help characterise the inhabitation of activity zones: living conditions, amenities, services available within the zone, internal mobility and access, housing quality, the quality of life in relation to work, the existence of corporate networks promoting sustainable development, mixed-use spaces, a functionality economy, and new economic models. Wherever possible, we will propose how these criteria may be assessed and provide the available information sources (see Table 5 in Annex).

Previous local studies on how criteria may be operationalised have highlighted the challenges associated with operationalisation, notably in connection with the availability of data (Bourdeau-Lepage et al., 2018)

Each criterion must thus be assessed, standardised, and possibly weighted to allow the ratings to be developed more homogeneously. As Table 4 shows, based on an evaluation of each of

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¹⁰ PALME: A programme for environmental management and certification

the indicators, it is possible to obtain a representation using a radar chart, and thus to interpret and compare the results obtained for each economic activity zone analysed. Each type of habitation model can therefore be associated with an ideal-typical configuration obtained at any given time. It thus seems necessary to reflect on how the analysis may be extended to other areas, including rural areas, an activity that will undoubtedly require the mobilisation of new criteria.

Figure 1: Example of a representation using a radar chart

Conclusion

Several members of a multidisciplinary team (economics, management, geography, urban planning, architecture) have worked together for months to develop a social and environmental diagnosis based on a common approach. We conducted interviews with regional actors and proposed zone maps. A photographic report enabled us to illustrate the different ways zones are inhabited and to propose scenarios for potential developments. Thus, for instance, with regard to the Technology Park, we observed the development of some form of social grouping which may be compared to gated communities in urban neighbourhoods undergoing gentrification. Conversely, with regard to the ZAC Berliet, the duality of the occupation of the space makes it difficult to develop a commercial offer that may help reconcile the people's expectations. With regard to the Carré de soie, the scope of the project has led to a new compartmentalisation of space by limiting functional diversity. Much like territories, which are no longer administrative subdivisions of the national space but autonomous multipliers of development (Brezzi et. al 2016), EAZs create value. They provide services that not only enhance the economic dynamism of businesses but also have an impact on individuals' well-being. Most of the factors that affect daily life are determined locally. This explains why even in the same country, the quality of well-being differs across spaces. For instance, land use, transport and housing differ across the EAZs analysed. It is these elements and how they are used that make it possible to differentiate between these zones.

Beyond external factors such as accessibility or the cost of land and real estate, businesses are becoming increasingly sensitive to internal criteria such as the living conditions within EAZs, the well-being of their employees, and even the biodiversity of these zones (see the ELIPSE reference document). This interest is reflected in the participation in different actions aimed at enhancing the value of different zones: often in line with CSR policies, businesses frequently implement plans such as innovative mobility plans (for instance car sharing) to facilitate employees' access to the work site and reduce transportation impacts. These actions complement traditional shared-services models common in EAZs: sharing waste management services, security services, or even access to amenities, as revealed by industrial ecology studies in activity parks (Sterr and Ott, 2004; Gibbs and Deutz, 2007; Brulot et al., 2014).

These new factors primarily concern living and working conditions, i.e., the factors relate to a new approach involving multifunctional spaces capable of accommodating different users. In a logic of the mutability of space, amenities are also expected to be reversible, i.e., able to be used differently depending on the weather.

While economic attractiveness is largely concerned with businesses, residential attractiveness relates to inhabitants/residents living in the region. In both cases, it is those who use these spaces (entrepreneurs, employees, craftsmen, and residents) who will be more or less receptive to the various economic and cross-cutting criteria. Businesses may thus decide to settle in an EAZ because of land prices, business taxes, the presence or absence of a demand for proximity, and whether residents will pay attention to real estate prices, living conditions, and the quality of infrastructure. However, all users are receptive to **new factors of attractiveness in relation to SD**, factors we sought to identify and organise based on the issues encountered in the zones analysed.

SD thus provides an opportunity to reflect on the new forms of regional development (multifunctionality of spaces and reversibility, new vision of habitation) which combine hybrid actors such as businesses, local authorities, and residents, all affected by this issue. Regional development is also backed by a context of the "territorial servitisation" of economies (Lafuente et al., 2019). Employees are increasingly placed at the centre of the concerns of businesses and local authorities, which, through relevant implantation decisions, wish to propose an enjoyable and stimulating working environment. In parallel, local authorities seek to offer their inhabitants a pleasant living environment which also takes into account their professional lives. It is thus increasingly difficult to dissociate urban and economic development, and all stakeholders show an interest in working in favour of social and functional diversity within their territories.

EAZs could thus become the hub of a co-construction of spaces and uses, i.e., of inhabitation (Lazzarotti et al., 2012; Lussault et al., 2007). The concept of inhabitation relates to the investment and development of territories by their inhabitants: investing in one's territory on a daily basis does not only mean using it but developing it as well.

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Annex 1: Table1: Analysis grid of websites of local authorities for the promotion of activity zones

Economic Activity Zone		
Administrative informations	Presentation	Name of zon
		Region, department, city
		Available surface in Ha
		Possibility of extension
		Vocation
		Contacts and web sites
		Proximity of cities and distance in km
Industrial informations ou industrial attractiveness	Connexions	Highway
		Routes, trainstation,
		airports, ports
	Infrastructures	Electricity, gas, water
		Telecommunication, High band
		Railway, waste water treatment plant
	Services	Clearing centre, videoconference centre...
		Business incubator
		Post office, banking agency, carpooling, corporate restaurants, shared nurseries
	Environmental rules	Architecture, urbanism
		Emissions of gas, noise standard...
	Financial information	Land price per m ²
		Taxation : CFE (Cotisation Foncière des entreprises), CET (Contribution économique territoriale), TLE (Taxe locale d'équipement), tax exemption
		Settlement facility
	Economic information	competitors, suppliers, economic viability, labour force offer, labor force skills
Commercial information	Land and building portfolio for sale	Land for sale
		Bulding for sale

Source: From Rouquette (2009, p. 41)

Annex 2 - Table 2 - Identification of actors interviewed

Zones Actors	Parc Technologique de Lyon	ZAC Berliet	ZI Genas Mi-Plaine	ZI Meyzieu – Parc Les Gaulnes	Carré de Soie
Number	4	7	12	13	39
Types / Occupations	2 firms (Regional manager, HRD) Business Club (President) Metropolitan strategic organization (SERL) (project manager)	3 inhabitants 1 sports association (Project manager) Real Estate Developer Local democracy promotion officer (Saint-Priest city)	Consular chamber of Lyon (mobility officer) Food Truck (manager) Genas town hall (urbanist officer) Private real estate developer Business club (President) Relaxation room for workers Workers CCEL (economic developer)	10 inhabitants Metropol of Lyon (economic developer) Firm (Veolia Campus manager) Town hall (Mayor assistant urbanism and roads)	31 inhabitants Project house (economic developer, project manager) Brewery (manager) Firm (Design Manager) Association (founder, officer communication between firm and authorities).
Type of inquiry	Directed interviews face to face recorded and transcribed	Semi-directed interviews face to face recorded and transcribed	Semi-directed interviews face to face or by phone recorded and transcribed	Survey Semi-directed interviews face to face recorded and transcribed	Online survey ligne Semi-directed interviews face to face or by phone recorded and transcribed
Duration	1h to 2h	1h to 2h	1h to 2h	15 min 1h to 2h	10 min 30 min to 1h

Annex 3 - Table 3: The challenges facing the five EAZs analysed in Lyon East

ZAE Main challenges	Parc Technologique de Lyon	ZAC Berliet	ZI Genas Mi-Plaine	ZI Meyzieu – Parc Les Gaulnes	Carré de Soie
Economic challenge	No more land availability. Relocation of projects in ZAC Berliet.	Social cohesion between stakeholders to consolidate	Development pull by a new activity park : Parc Ever Est.	Difficulties to attract qualified workers.	Implementation of « living » landscape
Environmental challenge	Landscape harmonization between ZAC Berliet and Parc Technologique	Industrial identity maintained considering sustainable development constraints.	Public governance: different publics actors and different goals.	Sustainable development of economic activity.	Urban sprawl. Urban food: local food autonomy.
Social challenge	Territorial mixity, including working places.	Improve quality of life and inhabitants spare-time shared activities.	Sustainable development and mobility uses.	Break down the border between areas. Create link between businesses and inhabitants.	Functional and social mixity (shops, amenities...)

Property Management

Chaired by Ju Liu

LOGISTICS REAL ESTATE IN THE CONTEXT OF E-BUSINESS: STRATEGIC BUSINESS MODELLING

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Abstract

Logistics is a hinder for the growing e-business sector. The logistics companies have problems to deliver ordered goods to consumers and customers in a timely way. The transport chain involves logistics real estate that could improve the structure for e-business. Therefore, the development of logistics real estate has potential to dramatically improve e-logistics. However, the logistics real estate sector has grown to be a complex web of actors with real estate focus rather than logistics.

When it comes to logistics solutions, there is a need to map functions and recourses to better understand the complexity of the logistics property business. There is a need to align and develop logistics real estate based on understanding context of e-business logistics.

The purpose of this paper is to understand the complex web of actors servicing e-logistics and, especially the logistics real estate actors related to this chain by mapping relations.

Theoretically, we draw on strategic business modelling literature to outline who is the customer and who is the supplier. Also, what should be done in-house and what should be outsourced. Through the business model descriptions, we are equipped to better understand customer segments, value propositions, chains, customer relationships, revenue streams, resources, activities, partnerships, and costs. Logistics literature is used to substantiate knowledge of e-business and logistics service provision. Real estate literature is remarkable quiet on logistics issues despite the growing importance of the business segment of logistics real estate. Findings are described as a set of propositions related to current business model developments in which value propositions are dynamically adapted. The professional logistics property developer we expect to origin from different backgrounds (logistics, real estate and e-business), to develop flexible value propositions related to logistics services and with potential to develop better customer service and understanding e-business demands.

Implications are that resources for value creation related to e-business order fulfilment, transport and last-mile logistics are put forward. Managers of logistics properties should be aware of e-business logic related to logistics, as well as the value co-creation potentials related to adapting strategic development.

Future research is to continue to develop understanding of how logistics property business is working. First, by our theoretical model, second, by a pilot study offering a tentative model to e-logistics with sound logistics real estate development.

Key words: logistics real estate, e-supply chain, strategy, business modelling, and logistics network.

INTRODUCTION

Value creation potential of e-business is enormous. E-business is changing our way of doing business where new types of business models are innovated (Amit & Zott, 2001; Jocevski, Arvidsson, Miragliotta, Ghezzi, & Mangiaracina, 2019). E-business is moving away from the conventional understanding of product and service thinking, where there is a producer or service provider in one hand and buyer at the other end. Two e-business trends can be seen now of days; co-production in value creation (Normann, 2001) and e-logistics where value is produced in complex service chains where new business models are emerging. McRae (2015) points out that Uber owns no cars, Facebook does not create any content, the retailer Alibab has no stock, and Airbnb own no properties. These actors do not own but using resources, who prides the services? New and different business models are being created that are changing the landscape of how we do business (McRae, 2015).

New business models in the logistics service chain it is about planning of service production where capacity and flexibility are key, distribution centers with staff, transportation and handling of goods. But e-business is often about small packages and therefore automation is needed in warehouses that need to be situated close to urban areas where the deliveries are made (Ferne, Sparks, & McKinnon, 2010). The logistics service chain needs new logistics models as well as new value propositions and re-organising coordination with partners (Ishfaq, Defee, Gibson, & Raja, 2016; Jocevski et al., 2019; Kembro, Norrman, & Eriksson, 2018; Rai, Verlinde, Macharis, Schoutteet, & Vanhaverbeke, 2019). And it is in the innovated logistics service chain, in the interstices between the logistics provider and consumer, that the logistics real estate provider may contribute to value co-creation by services that complements the logistics service chain, for example, up time, support and maintenance, service agreements, control of costs and resources. In the complex web of e-logistics actors little is known of real estate actors. Therefore, focusing on real estate actors, e-logistics and mapping up relations is an important issue for academics and practitioners.

One way of how to study and understand better this complexity of actors and value creation is to use the business model from a strategic point (Brekalo, Albers, & Delfmann, 2013; Jocevski et al., 2019; Kembro et al., 2018; König, Caldwell, & Ghadge, 2018; Marchet, Melacini, Perotti, Sassi, & Tappia, 2017). A tentative description of business model is a description of value proposition for customers and other stakeholders, and how it is associated to revenue and cost structure (Johnson, 2010; Johnson et al 2017, Afuah 2014, Osterwalder & Pigneur, 2010). Usages of the business model construct has exploded since 1995 (Zott et al.,2010).

The purpose of this paper is to understand the complex web of actors of e-business logistics and, especially the logistics real estate actors related to logistic chain of e-business.

Theoretically, we draw on strategic business modelling literature to outline who is the customer and who is the supplier. Also, what should be done in-house and what should be outsourced. Through the business model descriptions, we are equipped to better understand customer segments, value propositions, chains, customer relationships, revenue streams, resources, activities, partnerships, and costs. Logistics literature is used to substantiate knowledge of e-business and logistics service provision. Real estate literature is remarkable quiet on logistics issues despite the growing importance of the business segment of logistics real estate.

The paper will be structure as following; first, by theorizing business models in a service business context, define contemporary logistics knowledge of the sprawling e-logistics problem involving key actors and functions and further develop conceptualisation concerning these actors potential to dynamic value co-creation. Finally, findings are described as a set of propositions related to current

business model developments in which value propositions are dynamically adapted The professional logistics property developer we expect to origin from different backgrounds (logistics, real estate and e-business), to develop flexible value propositions related to logistics services and with potential to develop better customer service and understanding e-business demands.

STRATEGIC BUSINESS MODEL IN SERVICE INDUSTRY

A model is always a simplified description of reality. This is also true when discussing and using business models (Baden-Fuller & Morgan, 2010). Business logic will in business models specify the central logic for how value is created (Linder & Cantrell 2000). We would like to show in this paper how the business model could be used as a tool to analyze e-business logistics, especially logistics property business.

The main idea with using business model thinking is to figure out what customers want, when they want it, how they want it, etc. It is as a tool for capturing value creation, related to costs and revenue streams (Teece 2010). We use the widely applied business model, Canvas by Osterwalder and Pigneur (2010) and Osterwalder et al (2014). The Canvas model has been used by many researchers and practitioners and is regarded as simple and transparent (Beh, et al. 2016), and applicable for service business (Ojasalo & Ojasalo, 2015). A critique of Canvas is that Osterwalder and Pigneur are just putting together all sides of business in the model, sometimes conflicting with each other (Frankelius and Norrman, 2014). However, we understand this transparency as a strength with the model. Our arguments using Canvas are, that it is simple to communicate, has a strong practice orientation, is in use in service business as well as production business (Ching & Fauvel, 2013). Also, Canvas business model assumption is that value is to be created through upstream and downstream relationships. The concept of value is central with innovative opportunities (Osterwalder and Pigneur 2010). How managers and people in business constantly think about how to create values for actors within the model as well building new businesses, or new way of doing businesses. Innovation is possible by understanding, not only selling side except also the production and service side.

The Canvas model has two perspectives which it want to capture; one side is value proposition (Osterwalder and Pineur (2010; 2014), focusing on customer profile. Its focus is on understanding the customer. Secondly; it is the Value Map, meaning how the company will create value for the customer. The idea with the model is to create a fit between those two. There are several connections to other business models, discussing similar things (see, for example, Gordjin & Akkerman 2001; Johnson 2010).

Figure 1: The strategic business Canvas model (adapted from Osterwalder & Pineur 2010 and Ojasalo & Ojasalo 2015)

The basic understanding of the model (Figure 1) is based on those two categories in the bottom; understanding the cost and the revenue stream. What we want to know is actually who is our key partner. It is those people, companies like supplier, joint venture or different alliances partners that we have relationship with. What we are asking is those resources that we need to from our partners. The reason for identifying key partners is for example to reduce uncertainty. It could also be that we need some resources that we do not own our self (Osterwalder & Pineur 2010). Ojasalo & Ojasalo (2015) discuss key partnering from two points of view, company and customers. It is important to take into account the benefits partners will have from the cooperation and the customers understanding about the key partner. It is important to understand what are the main activities you need and can be found with your partner(s) that they can deliver, i.e. your key partners core competence (Prahalad & Hamel 1990).

Key activities has to do with the how the company are interacting with its customer and different partners. It has a strong connection to what value proposition requirements. What are the companies primarily activities like production, how problem are solved, different kind of networking or connections, support, to mention some (Osterwalder & Pineur 2010). Ojasalo and Ojasalo (2015) call this "Mobilizing recourses and partners". It has to do with utilizing and develop customer, partners and resources together.

To be able to do your business companies need recourses. Key resources are needed to be able to keep relationship with stakeholders and be able to perform key activities. It could be physical

resources, infrastructure, personnel, and trademark, i.e. everything that is crucial in your company. (Osterwalder & Pineur 2010) From a service point of view (Ojasalo & Ojasalo 2015) the focus is on knowledge, skills, and immaterial resources that is needed or required for being able to fulfill value proposition.

Value Proposition means that you need to understand what products or service each customer segments are looking for. It could be standard issues like the price and quality. But it could also be issues like design. The main question that needs to be asked is: What needs are you fulfilling to the customers? Is there something new that we are selling and delivering, how are we performing the value could be another characteristics, price, risk would also be an example of characteristics of value propositions according to Osterwalder and Pineur (2010) Ojasalo and Ojasalo (2015) add company view to this and mean that the company could ask at least two questions; what value are the company selling and to understand what is unique in our offering.

What Osterwalder and Pineur call "Customer relationship" Ojasalo and Ojasalo call "value creation". According to Osterwalder and Pineur it could be seen in a different way, arms-length or very close relationship What type of relationship is in place need to be identified by understand and define in a proper way different customer segment. As an example of changes in customer relationship is the how self-service in grocery stores has been more and more applied. Self-service is much more used now of days than before. E-business has as well changes the way customer relationship looks today. It could be a question of how much each relationship should cost. Ojasalo and Ojasalo (2015) pinpoint the differences between the customer and the company. The companies offering need to be rooted into customer's own way of thinking.

Interaction and co-production (Ojasalo & Ojasalo 2015) has to do with which channels our customers segments want to be reach (Osterwalder & Pineur 2010). It is to understand your current sale channels based on customers activities and context.. To understand the whole it is necessary to understand the whole value chain or Supply chain to be able to support coproduction and interaction. So it is not only your own channels except both upstream and downstream channels that need to be understood. Channel decision and understanding has strong connection to customer relationship.

We need to understand who is our customer. It is about define or customer into segments. Those segments are those groups of people or companies, which the company wants to create value for. Here it is important to understand who are your most important customers and who are not so important. By understanding and segmenting you customer in a good way, it is more simple to direct marketing communication to just that segment.

The last two categories in the model are Revenue stream and Cost structure. Revenue stream has to do with identifying the value the customers are willing to pay for. It is not only what they are paying except also how they are paying. Two issues are needed to take into account; what type of sale decision of price model (Osterwalder and Pineur 2010). From a service point of view (Ojasalo and Ojasalo 2015) both understanding of the company's logic of both financial and non-financial factors need to be taken into account. Also from it is important to measure (KPI's) customers business as well to understand what they are willing to pay.

The last category is the cost structure. It means that companies should be aware what is the most important cost(s) in the cost structure model (Osterwalder and Pineur 2010). Do we actually know which resources and which activities cost the most? How does our revenue model look like; is our price based on cost (cost driven) or the value (value driven)? This is similar to Ojasalo and Ojasalo's

(2015) view that there is a need to understand cost structure from both the company's view and the customer point of view.

These nine categories will help the business owner and other business people to have a clear overview of its business model. The business model will help them to map up their business as it is today, current structure. Only when the business owner knows his current situation from both its own and their customer view they is it possible to use the model to analyze different outcomes or scenarios based on real information about the business today.

LOGISTICS REAL ESTATE IN THE CONTEXT OF E-BUSINESS

E-business is a virtual market that to some extent is hindered by a service gap in terms of logistics. Logistics is actually regarded as the major hindrance for e-business companies, since value-adding opportunities are poorly understood and provided solutions not necessarily match problems (Manners-Bell, 2016). Logistics has since decades been vitalized in global supply chains by third-party logistics firms' (TPLs') capabilities that drive efficiency as well as innovation (Marchet, Melacini, Sassi, & Tappia, 2017), where the TPLs could be seen as a factory of services or a "service lernstatt" (Prockl, Pflaum, & Kotzab, 2012).

E-business may, at least temporarily have driven TPLs on their knees, because of different demands. E-business implies that TPLs need to handle larger share of return flows, controlling not pallets to few destinations but parcels to many simultaneous delivery points and facing expectations of consumers. E-business logistics is about order fulfilment, internal transport and last-mile transport (Rai, Verlinde, Macharis, Schoutteet, & Vanhaverbeke, 2019). Warehousing and order fulfilment are managed in centralized and automated centres where speed, costs, precision and convenience are valued (Ishfaq, Defee, Gibson, & Raja, 2016). Balancing objectives of capacity and resource utilization with increased flexibility in operations is a goal (Kembro, et al., 2018). Transport between central warehouses and decentralized centres are being commoditized (Rai et al., 2019). Last mile transport are dependent on specific contingency variables, such as consumer geographical density, consumer time convenience, demand volume, order response time, order visibility, product availability, product customisability, product freshness, product margin, product returnability, service capacity (Lim, Jin, & Srai, 2018), and alignment between delivery responsiveness and product variety (Lim & Winkenbach, 2019).

Retailers seize their value proposition and evaluate best possible last-mile logistics in terms of facility and inventory locations related to network structure, types of information systems necessary, choice of partners with whom to build relationships, expectations about already-established partnerships; and assessment of existing competitive advantages based on service uniqueness and service modularity (Lim & Winkenbach, 2019). Rai et al., (2019) find distinct differences between food retailers' and non-food retailers' need and use of TPLs services, in order to taking best advantage of e-business, implying that TPLs need service differentiation in their offerings regarding order fulfilment, internal transport and last mile transport. In the context of e-business, retailers' service chain is less dependent on the traditional solutions of TPL-firm are offering. Solutions that create value through economies of scale and scope, integration or innovation by problem solving are not as fit as a value creation based on exploration among cost and value drivers of others in the relevant network (Wang, Persson, & Huemer, 2016). Partnering with local companies or invest in physical touchpoints for delivery/returns are suggested to fulfil new customer expectations (Jocovski et al., (2019 Investments in technology, Jocovski et al., (2019) denote as relevant to innovate their business model. RFID for flow management or automation for warehouse efficiency and control of order fulfilment. But do they need to own the resources to use them?

A separation between asset-based and nonasset-based logistics service providers are common. But assets in themselves are not value drivers. König et al., (2018) argue that investments in assets need to be leveraged with relationship and network capabilities. Expressed as a logistics alliance capability necessary in this service industry, Brekalo et al., (2013) the variety of supply chain actors and different logistics alliance constellations (TPLs, original equipment manufacturer, and combinations) include that embrace a scope and diversity of logistics activities. The capability improves through learning about necessary integration and coordination of joint logistics processes, information exchange and monitoring mechanisms. But hitherto logistics real estate actors are not recognised in logistics research as such partners.

Logistics real estate actors are sometimes asset-owners and sometimes pure real estate brokers. They develop a part of e-business relevant value network, but their capabilities are only related to assets rather than the higher value drivers relational capability or knowledge capability connected to logistics alliance actors (König et al., 2018). E-business driven consumption is increasing demand of new logistics properties. Logistics real estate assets are important resources for TPLs. Strategic development of TPLs are based typically in an ability to high customer adaptation based on assets such as warehouses or in a high degree of problem-solving ability that are taken advantage of as service packages sold to many customers (Hertz & Alfredsson, 2003). The role of the TPL provider and logistics real estate actors are unclear in terms of value creation. Competencies may be complementary for the good of the e-business value chain.

The logistics sector is an important business area to real estate investors: *“Regardless of whether we look at a holding period of one, three or five years, logistics real estate has consistently outperformed both all property and all industrials in terms of total returns, capital growth and rental value growth.”* (Andrew Marston, director in CBRE’s UK Research team, 25th of August, 2016, Logistics Manager News).

Real estate actors are not the only ones going into logistics real estate business, it is also an important business area for the huge e-retailers. A case study by Manners-Bell (2016, p. 299-300) discusses Amazon’s international network of fulfilment centres with personnel and information system together with last-mile solutions for efficiency and innovation in the distribution system, which is closer to the characteristics that Rai et al., (2019) see among food retailers than the non-food retailers. Also Alibaba invests in order to be able to deliver orders in time to Chinese business and homes Manners-Bell (2016, p. 300-301). Alibaba partners with an investment company and a banking group to develop a logistics network including investments in establishing a nationwide warehouse network. According to Manners-Bell (2016) the strategies are to be a “professional” logistics property developer rather than to risk more logistics break-downs. E-retailers appears to develop their own e-logistics networks resources.

Resources to be managed for professional warehousing in this context are physical layout (e.g. placement of docks, lane depth and stacking height), storage equipment, handling equipment, automation solutions, information systems, and labor (e.g. ergonomics, scheduling, rotation, shifts) (Kembro, Norrman, & Eriksson, 2018). The two main problems to develop e-business logistics are to develop value proposition and physical distribution network (Kembro et al., 2018). In order to provide innovative and efficient services, new types of competencies and capabilities are needed and as the TPL not necessarily is apt, the retailer may need to insource some operations or use other actors such as from the logistics real estate sector. But there is to our knowledge no research to provide evidence that logistics real estate service providers are apt for value co-creation and developing logistics property as nodes in a logistics network rather than a real estate network. Beyond their logistics assets, actors need logistics alliance capabilities (Brekalo et al., 2013), and

relational and knowledge capabilities (König et al., 2018). Such capabilities are likely to contribute to e-business logistics value creation rather than value in matching place with a tenant.

Logistics may be a farfetched vision or an opening to a new business segment among real estate actors. Real estate opportunities are seen in value added investing, because low entry barriers has opened for new investors that alongside the existing investor base create pricing competition for core still they have experience in the sector (O'Roarty, 2009). Most often however real estate literature mostly discusses logistics real estate in terms of land use problems. An exception is Roulac (1999) that outlines real estate value chain connections. Real estate serves different business functions and value purposes. For example, if the firm that will the occupy and utilize a real estate aims for physically efficient rather than market-responsive business processes, then the goal is place in low cost of doing business and aims are to related to high efficiency, extended duration, tenancy commitment. Instead if the firm search ready market access, then space flexibility and interior layout are (Roulac, 1999).

Business modell-ing

We have outlined a business model to assist firms to understand and develop value propositions, based on it's business logic (Baden-Fuller & Morgan, 2010; Casadesus-Masanell & Ricart, 2010). It is a map and a perspective of one firm, based on known revenue streams, existing cost structures and planned or existing supply chains for the customer. Business-model work demands in-depth understanding of the network of customers and suppliers, but it is still a static tool for individual firms that have gathered knowledge of its' customers' and suppliers' strategic options.

The e-business logistics problem, however, is that existing networks and markets of logistics hinders e-business. Efficient and flexible logistics is difficult to create in a dynamic and new environment (Fernie, Sparks, & McKinnon, 2010). Known business logics is not enough in such a situation, new competencies are needed for TPLs in fulfilment activities related to preparing orders for delivery, internal transport from distribution centres to next stop and last mile transport ie. the way orders reach end-consumers (Rai, Verlinde, Macharis, Schoutteet, & Vanhaverbeke, 2019). E-business logistics is under development and attracts many different types of actors. These have different types of possibilities to make use of assets and resources in order to take part in value creation. The situation is an opening for creative managers to stretch capabilities and find new ways of value co-creation in the e-business logistics network. Intertwined development of value propositions and the physical distribution network is needed to facilitate e-business (Ishfaq, Defee, Gibson, & Raja, 2016; Kembro, Norrman, & Eriksson, 2018)

If the business-model work implies that each firm has its' logic then business modelling should be seen as a network-perspective for a better understanding of other actors' logic (Mason & Leek, 2008). Different combinations of actors may propose value to advance both physically efficient and market-responsive e-business processes (Marchet, Melacini, Sassi, & Tappia, 2017; Roulac, 1999). Arguments that e-business will eliminate the role of real estate providers, logistics providers and e-retailers in one or another way are exaggerating but roles are likely to change to better accommodate new conditions. Business modelling is clarifying gaps in the value chain where service providers of real estate, logistics and retail by experimenting with business models create innovation (Doganova & Eyquem-Renault, 2009), by changes in the way activities are organized, the type of activities that are executed, and the level of participation of the actors engaged in performing those activities (Sorescu, Frambach, Singh, Rangaswamy, & Bridges, 2011), and from innovation in the making in which their expectations, their interests, and the problems they raise decide its' success (Akrich, Callon, & Latour, 2002; Akrich, Callon, Latour, & Monaghan, 2002).

DISCUSSIONS AND CONCLUSIONS

Theoretical implications

Logistics real estate in the context of e-business seems to rely on strategic business modelling for value co-creation in different logistics alliances.

Findings are described as a set of propositions related to current business model developments in which value propositions may be dynamically adapted. The professional logistics property developer we expect to originate from different backgrounds (logistics, real estate and retail), in order to develop flexible value propositions related to logistics services and with potential to develop better customer service and understanding e-business demands.

Proposition 1: Logistics in the context of e-business is poorly understood in terms of different partners' value offer and value logic. The lack of capabilities leads to e-retailers developing vertically integrated logistics networks to serve their customers, since needed services are difficult to source from existing service providers' value offers.

Logistics service provider boundaries are challenged (Brekalo et al., 2013; König et al., 2018). Their traditional value logics, i.e. economies of scale and scope, economies of integration and economies of innovation is connected to traditional types of demands (Wang et al., 2016; Marchet et al., 2017). E-logistics demands of effective order fulfilment, transport and last mile distribution calls for additional resources and capabilities and a network for value logic interactions (Wang et al., 2016). Order fulfilment relies on warehouse resources of which logistics real estate actors contribute with assets capability while there is a need of also relational capability and knowledge capability (Brekalo et al., 2013; König et al., 2018).

Proposition 2: Logistics real estate actors need to be an active part in understanding, not only customers of logistics real estate except it is important to understand what end customer is asking for value in the e-business segment. To be able to support and to be an active part in creating and innovation within and between companies in e-logistics, logistics service relationships and industry knowledge is vital.

New types of business model, i.e. e-business, mean that new requirements in warehouses, layout and how to deliver the last mile. Traditional logistics networks are looking for solutions and partners to fulfill those requirements. The logistics real estate actors have derived value from the increase in e-business based on their assets, but logistics competence is lacking, hence the difficulties to contribute to e-logistics value co-creation.

Practical implications

A service chain with actors from real estate, logistics and retail is complex. Efficient and flexible logistics is difficult to create in this dynamic and new environment (Fernie, Sparks, & McKinnon, 2010). Business-model innovation demands in-depth understanding of the network of customers and suppliers. This is achieved by experimenting (Doganova & Eyquem-Renault, 2009), by changes in the way activities are organized, the type of activities that are executed, and the level of participation of the actors engaged in performing those activities (Sorescu et al., 2011), and influencing expectations, interests, and the problems raised (Akrich et al., 2002; Akrich, Callon, Latour, & Monaghan, 2002).

Proposition 3: The role of real estate providers, logistics providers and e-retailers are likely to change to better accommodate e-logistics. Logistics real estate actors' business model in the logistics segment is underestimating logistics real estate actors' potential to contribute to value in the logistics service provision. It is not enough to just focus on traditional

real estate business, when value is to be created in a logistics context. As logistic real estate actor the relational capability and knowledge capability is developed through focusing on both the own company as well as partner companies. Accordingly, we have identified three main streams in this paper which we see as a way of understanding and be more innovative with logistics alliance partners.

Proposition 3a: It is a need to deliver value to not only your partner except you need to deliver value in your own organization as well. Value has as strong connection information transparency in the whole chain from producers to customers. It has to do with identification of key partner, identify key activities, and key resources.

Proposition 3b: We need not only to deliver value; we need to create value as well, and collaborate for such purpose in the whole chain. The value proposition is in such a way adapted to input, such as know who is our customer, how to reach them as so on.

Proposition 3c: Has to do with how we seize value based on understanding both the cost structure as well as understand revenue stream. By sharing information about cost is and understand what customer are willing to pay, the business model can create value to everyone in the chain.

Future research is to continue to develop understanding of how logistics property business is working. First, by our theoretical model, second, by a pilot study offering a tentative model to e-logistics with sound logistics real estate development.

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Creating innovative new strategy in housing renovation: A case study

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Introduction

New construction is still highly normative in determining routines and procedures in housing renovation, despite the growing attention given to the existing building stock. Most of the construction industry's regulations and instruments still aim at achieving sustainable new construction and there is a lack of routines, policies and regulations that focus on the renovation process. The dialogue or interaction with the tenants, and how it influences the housing renovation process has for example been largely overlooked. We argue that the renovation process has been dominated by a technology-and-engineering-focused model---"the rationalistic renovation model" which is influenced by new construction. Real estate companies have for long been using this model as their main strategy to develop project processes and to achieve project goals in renovation.

The aim of this paper is to understand the process of strategy formation and change in renovation projects and to explore ways to transform the rationalistic renovation model into a more inclusive one. Adopting Mintzberg's definition of strategy as pattern, this paper discusses a housing renovation project over seven years (2009-2016) that was carried out by a Swedish real estate company. We try to understand how "the rationalistic renovation model" (figure 1) was used and developed into something new.

Attention to the renovation process has increased in recent years. Renovation may often be preferable to demolition and new construction as means of reducing total energy use, e.g. there are studies showing that the actual life of a building exceeds the estimated service life (Kohler and Yang, 2007, van der Flier and Thomsen, 2006). In terms of resource use and environmental impact, including both production and operation, renovation is often preferable to demolition (Thomson and van der Flier, 2009, Itard, Klunder and Visscher, 2006).

However, renovation processes are complex and more uncertain in terms of decision making, planning and execution than the processes of new construction (Thuvander et al., 2012, Femenías and Fudge, 2010, Revers, 2001, Rosenfeld and Shohet, 1999). The qualities and deficiencies of the building need to be known, e.g. in the case used in this study the uncertainty of the deficiencies in the building was extensive and documents about the design and installations lacking. In renovation processes emphasis should be laid on the preliminary investigation phase in terms of time and resources to achieve good results (Feminias and Fudge, 2010). In the schematic overview of a renovation process (Nordling and Reppen 2000; Thuvander et al., 2012) shown in figure 1, the involvement of the tenants, the users, is peripheral. This model represents the "rationalistic renovation process" which mirrors shared beliefs in the construction industry. The shared beliefs and industry wisdom (Melander, 1997) is based on a "cognitive and interactionist view of reality, describes collectively shared ideas, beliefs, values and norms about the rules of the games and possible strategic action in the industrial

field” (Hellgren et al., 1993:103). Obviously, in the rationalistic renovation process, the technology and engineering issues are put in the centre and the tenants needs are ignored.

*Figure 1. A rationalistic model of the renovation process
(Nordling and Reppen, 2000; Thuvander et al., 2012)*

Due to the complexity and distinctive characteristics of renovation, there is a need to distinguish renovation process from new construction process. It is important to focus and develop knowledge about the renovation process and bring tenants back to the project conversation. This study contributes to such knowledge by combining a rationalistic way of doing renovation and interaction with the tenants.

The paper tries to understand the process of strategy formation and change in a housing renovation project of a Swedish real estate company. The research questions are: 1) what made the unrealised renovation strategy unrealised? 2) what made the emergent strategy emerge? 3) what are the theoretical and practical implications?

In the following section, based on literature review of strategy theories, the theoretical perspectives and analytical framework will be introduced. The third section presents research design, data collection and data analysis. The fourth section provides a general background of the case and the company. The fifth section presents the main findings. In the sixth section the theoretical contributions and practical implications will be discussed. In the final section we

conclude the paper by illustrating Mintzberg's model of strategy as pattern with findings from our case study of housing renovation.

Strategy formation and change in renovation projects

In this paper, strategy is defined as the guideline of actions that an organization uses to achieve its goals. We highlight three important arguments in strategy literature for understanding how strategy is formulated, changed and actualised.

Firstly, *strategy is a mediating force which matches the internal resources and the external context* (Hofer and Schendel, 1978). Internal resources refer to tangible assets, such as financial and human resources, inventory and machinery. Importantly, internal resources also include intangible resources, such as the organisation's vision, shared values and beliefs, organisational routine and practices, organisational reputation, information, knowledge, social connection etc. (Barney, 2001). Such intangible internal resources typically have broader and more stable influence on organisational behaviour. External context includes industrial wisdom, business opportunities, competition, law and regulations, technology advances, stakeholders such as customers and suppliers etc. Strategy formation is a process of matching the internal resources with the external context. The degree of such match is the so-called *strategic fit*. The project performance depends on the extent to which the internal resources fit the external context through the formation and actualization of strategy. The function of strategy is to match the internal resources with external context. Therefore, change of internal resources and/or external context may consequently lead to strategy change.

Secondly, *strategy is a dynamic process*. It is not a once-for-ever guideline but a changing pattern with old parts discarded and new elements emerging. Mintzberg's strategy-as-pattern theory catches the dynamic nature of strategy and looks into the process of strategy formation along the whole process of actions. The starting point is an intended strategy. On the way of actualising the intended strategy, part of it is discarded, part is actualised and new emergent parts join in. The discarded part is the so-called *unrealised strategy*. The rest is actualised and becomes *deliberate strategy* while the new joining part is the *emergent strategy*. One can summarise Mintzberg's strategy pattern as:

$$\text{Deliberate strategy} = \text{intended strategy} - \text{unrealised strategy}$$

$$\text{Realised strategy} = \text{deliberate strategy} + \text{emergent strategy}$$

Now, the logical questions are: 1) what made the unrealised strategy unrealised? And 2) what made the emergent strategy emerge? In other words, what was the mechanism behind strategy change?

According to the premise mentioned before, strategy is the outcome of the process through which the organisation matches its internal resources and external context to pursue strategy fit. When internal resources are renewed and external context disturbed, the strategy will have to change accordingly. In this paper, internal renewal refers to significant change in internal resources, such as hiring key employees, gaining or losing sizable financial resources, adopting game-changing new technology, etc. External disturbance refers to significant change in

external context, such as critical new law and regulations, technological revolution, fundamental change of consumer behaviour, emergence of a strong new competitor etc. Based on this argument, the paper develops a theoretical framework as shown in Figure 2 and applies it to understand the process of strategy formation and change in our case of housing renovation.

Figure 2. An analytical framework for understanding the process of strategy formulation and change

We use the term renovation in this paper, and the case we use is a consistent upgrading of a building, but there is no generally accepted definition to describe building changes (Thuvander et al., 2012), instead there are a large variety of overlapping terms. Common terms are for example alteration and adaptation. Some authors use the term renovation to indicate a minimum of intervention (Ebbert, 2010), while others see the term as indicating more consistent upgrading (Douglas, 2006). In general, a renovation process has more or less the same phases as the process of new construction, but with consideration of occupancy and use from the start. The phases in new construction according to Thuvander et al. (2012) are pre-design, preliminary investigation, design, construction, commissioning and occupancy use. The focus of this paper is on the process of the renovation of a housing project and the strategy of the housing company over the whole process in relation to the tenants. There is only scarce previous work on strategy in the renovation literature or on renovation in the strategy literature. Lind et al. (2016) use the term sustainable renovation strategy, but not as we understand related theoretical to Mintzberg in their understanding of different options of renovation.

Method and material

The research design included both semi-structured interviews and text analysis. Interviews were made with four representatives from the housing company working with the renovation process, and with one stakeholders outside the company but involved in the process and with x tenants. Interviews with professionals took place at their current workplaces, and interviews with the tenants in their homes. The interviews lasted for about one hour and were recorded and transcribed. The text analysis included project plans and documents from the housing company but also material collected from the tenants. Events before and during the renovation appeared in the local newspaper and we got access to clips that had been collected by the tenants.

Case description and analysis

General information of the renovation project

The estate studied is considered to have many architectural qualities and was one of the first buildings in Sweden inspired by the functionalistic architecture. The house was built in 1938 and was considered to be modern at that time. It included a mix of small and large apartments, the latter intended for more wealthy people. A daycare center was located in a building nearby.

The building was bought by the present owner (a housing company) in 1999 from a private owner who was related to the constructor. The estate had been kept in the family, no major renovations had been made, and the building was in rather poor condition. In general, according to the rationalistic model of renovation (Figure 1), the motives for renovation are the tenants' needs and requirements. However, this was not the argument when the housing company initiated the plan to renovate the building. Actually, the tenants had made renovations in their own apartments and consequently did not find any major renovation needed. According to Real estate manager A, the residents did not perceive themselves as regular tenants, more like owners of their apartments. "The former owner had told the tenants: "you can do what you want in the apartment, but I am not going to pay for any renovations or something like that". Thus the management strategy for the building by the former owner was a "let go" strategy. (Quotes from the tenants needed).

With the present owner, the building experienced two renovations. One is a small scale renovation in 2000 and the other is a significant renovation from 2009 till 2016. In figure 3 we present the renovation process longitudinally starting with the purchase of the house in 1999 and ending with the completion of the renovation process in 2016.

Figure 3. Critical events in the process of renovation from 1999 to 2016

Renovation project 1: the replacement of the original windows

When the housing company bought the house in 1999 the majority of the tenants wanted to buy the house and to organize it as a tenant-owner cooperative. They did not accomplish to buy it, although they had registered a tenant-owner cooperative with this aim. However, the building was placed in a company and sold to the present owner together with another building. In consequence the tenants had no opportunity to buy the house.

The poor condition of the house led to a decision to remove and replace the windows in 2000, although the original windows had been invented and constructed by the original constructor and were considered to be valuable for the house and the architecture. Many of the tenants were provoked by the decision to replace the windows, since it was known that new windows did not have the same quality as old, but also that the new windows had a smaller glass area than the original, with the consequence that the amount of daylight in the apartments decreased. In this case there was no formal need for the housing company to have a dialogue with the tenants, since renovating or replacing windows is considered to be regular maintenance work and there is no raise of the rent. The relationship between the housing company and the tenants was restrained already when the house was bought in 1999, and did not improve with the removal of the original windows, which caused strong reactions from the tenants. The tenants contacted media, and this was the first time the tenant dissatisfaction with the management of the building was expressed openly. There were headlines in the local paper like “Window expert critical to decision” “Fönsterexpert kritisk mot beslut” “Tenants criticize the change of windows” “Boende kritiserar HSB efter fönsterbyte”, and it was mainly a critique for not preserving the architecture. Some of the tenants were journalists, and this made the access to media easier.

Renovation project 2: significant renovation of the whole building

Decision of renovation

The housing company had not carried out any large renovation projects before, so when starting to plan the project, Real estate manager A, who formerly worked for the Property owner association (Fastighetsägarna) as a rent negotiator, wanted to make an inspection in all the apartments, and information about this was sent out by mail to all tenants.

At this point there was already suspicion towards the housing company, and a black market for the rental contracts had developed, as the rent was lower than in the surrounding area and the building was a popular and well-known.

The resistance towards us was great and many of the tenants had invested a large amount of money in their apartments, it seemed as they did not know that they lived in a rental apartment (Real estate manager A).

Immediately there was resistance – the tenants did not want to let the housing company into their apartments, “they were suspicious towards us and that we were having bad intentions” says Real estate manager A.

“When we finally got into most of the apartments we discovered that the building was in worse condition than we thought. There were renovations inside the apartments that had not been properly made, they were not done by professional craftsmen, and even in the bathrooms, there were for example jacuzzis not installed in a proper way. The bathrooms and kitchens were not in good condition, there were mold problems everywhere”, says Real estate manager A.

Another problem with the building was that it had no consistent logic of installation. Bathrooms and kitchens are normally situated above or below each other in an apartment building, in order to minimize the wiring system. The problem was that the renovation had to be made for the

entire building, since the wiring was intertwined between the sections. There was no possibility to renovate only some bathrooms or kitchens since there was no logic between the different floors and apartments in terms of wiring and pipes, and there was also poor (or no) documentation of the installations.

After all inspections were made, the plans of the renovation were clearer and thereafter the housing company invited all the tenants to an information meeting to present the plan to renovate. This took place in 2009, the tenants' reactions were not positive, it was an atmosphere of resistance, and one representative of the housing company says "I have seldom been so close to get rotten tomatoes thrown at me" (Real estate manager A).

Most of the tenants attended the information meeting, everyone wanted to know what the new rent level would become after the renovation. Real estate manager A was considered by the tenants to be linked to (and stigmatized by) the rental system, due to the former job at the Property owner association (Fastighetsägarna), and the tenants were suspicious about the renovation and the future rent increase.

The tenants were not satisfied with the presented renovation strategy and the outcome of the meeting, and they "made strong voice" in the media about the planned, as argued, luxury renovation. The leader of the tenants' voice was a lawyer. Real estate manager A who presented the strategy also had a background as lawyer and felt that the housing company did the right thing but he also realized that it could be considered to be a "cock-fight" between two male lawyers (Real estate manager A and the tenant representative).

Dispute and high court decision

In a large scale renovation when the standard level is raised, the tenants have to accept the renovation individually for each apartment. Most of the tenants did not approve of the renovation, and the housing company had to go to Rent tribunal (Hyresnämnden) to get approval to renovate. The Rent tribunal decided in favor of the housing company, then the tenants appealed to the High court and the renovation process was "put on ice" between 2009 and 2012. The High court decided in 2012 that the renovation was necessary and the company could get started. The delay of the process meant that the project documents had to be updated, which increased the cost for the housing company.

Real estate manager A left the company in 2011 for a new position in another housing company. Real estate manager B with previous experience from another housing company was employed and just by a coincidence she was watching a television program about important architecture in Sweden, the house studied in this case was highlighted as an historical building that had made an impact. Real estate manager B now realized that the company had to restore the building and take into account the cultural heritage perspective. The housing company decided to appoint a person to be responsible for cultural heritage aspects in the renovation process. There were no big meetings any more with the tenants, the dialogue with tenants was made individually. This was the strategy of the new Real estate manager B.

During the renovation process there were different people from the housing company involved: a) Real estate manager A; b) Real estate manager B; c) construction project leader; d) cultural heritage project leader and e) facilitator for the tenants (project coordinator). The role of facilitator was needed as a link between the housing company, the entrepreneur and the tenants. Real estate manager A, left the company when the renovation project was “put on ice” and Real estate manager B was employed before the renovation was started in 2013.

Restart and completion of the renovation

The “voice” from the tenants had now given up resistance against the renovation as such and turned to resistance against tenants moving out from their apartments during the renovation, since many of the tenants were old and some sick. This meant that the housing company proceeded with the renovation plans but had also to involve a “facilitator” to find solutions for the tenants and their needs during the renovation, and also to decide that some of the tenants did not need to move out during the renovation. This caused a lot of discussion about justice and also further delays of the renovation process.

The *intended strategy* used by the housing company as motive for the renovation was based on the age of the building, technical and performance deficiencies and the legal rights of the housing company to renovate. When the process started again in 2013 the chosen strategy was to communicate individually (in dialogue) with the tenants. There were no assemblies any more but instead an ongoing dialog individually with the tenants. *We did not have any big information meetings during my time in the renovation project, because I do not believe in having those types of meetings when there were as much as 60 households* (Real estate manager B). There was a change in strategy about how to communicate due to the changing attitude towards the renovation process. *I think it's a lot about communication and we got better and better in communicating with the tenants in this project. Because I think we underestimated the communication with the tenants at the beginning of the project and focused more on our rights as a property owner.* Property owners' actions will be influenced to a high degree by their manager/owner's directives and business plans reflected Real estate manager B. The well-known building was also important part of the branding of the company, and this made it important to keep it in good condition as a symbol of the company and their quality standard. Since the building is well known in the city it would be noticed if it was not maintained properly according to Real estate manager A. *It is a famous building in the city, and suitable for the owner's branding to actually take good care of it.*

Main findings

Based on the case analysis, the paper generates three main findings which are related to the role of external disturbance and internal renewal, as well as the mechanism of strategy change.

The external disturbance plays the role as a trigger of strategy change.

The meaning is twofold. First, external disturbance pushes the situation to a desired state and sets off the mechanism for change. It is like an electric spark in a spark-ignition engine of a car. It provides a precondition for igniting the engine for change but does not necessarily lead to

change. Second, the external disturbance alone may not necessarily lead to strategy change. Whether change will happen depends on the degree to which external disturbance is strong enough. When the external disturbance is not strong enough, the project will be able to absorb the external shock without changing the project strategy. In our case, the external disturbance was not ignorable. The company had to change their renovation project strategy.

Internal renewal plays the role as driving force in the formation of innovative new strategy

The meaning is twofold. First, internal renewal is not a must for strategy change. A firm can change its project strategy "in the box" with the same group of managers, financial resources, organisational routines, practices, norms and beliefs. Second, the new internal competence is the source of changing from the old strategy to a new and innovative strategy. Nevertheless, if the internal competence is not renewed, provided strong external disturbance, it is still difficult to generate an innovative new strategy due to the stability and robustness of the collective mindset. The new renovation strategy which switched from the rationalistic model to a more inclusive one can be attributed to the employment of a new real estate manager with previous personal experiences of communicating with tenants as a real estate manager in another company. The company claims that the employment of this specific new manager was done without any intention of switching to a customer-oriented approach. Nevertheless, this employment played a critical role in introducing a new customer-oriented and less rationalistic mindset to the project.

The mechanism of strategy change is based on the interplay of external disturbance and internal renewal

Strategy is an intermediate force which matches the internal resources and the external context. Replacing the windows meant a minor external disturbance with stable and unchanged internal resources, thus strategy change did not happen. When the whole building was renovated a large scale external disturbance occurred together with an internal renewal, and in consequence a new strategy with more customer communication and acknowledging cultural heritage aspects emerged. The new strategy was the outcome of the external disturbance and the internal new competences.

Discussion

Creating innovative new strategy needs double means (internal and external). We round up the paper by illustrating four ideal-type circumstances based on Mintzberg's model with examples from our case.

Based on the Mintzberg's framework we suggest four ideal-type situations or circumstances and their respective logic of strategy change. These four circumstances show four different patterns of how internal resources and external context jointly influence strategy change.

Ideal type 1: Neither external disturbance nor internal renewal

This is a stable circumstance with neither external disturbance nor internal renewal. In this circumstance, the firm formulates an intended strategy. The intended strategy will also be

actualised and the intended outcome of the project will be achieved. In our case study this model is relevant to the situation before the estate was sold to the present owner.

Figure 3. Stylised illustration of ideal type 1

Ideal type 2: External disturbance with no internal renewal

In this circumstance, the external disturbance is strong so that the organisation has to change their strategy to cope with the disturbance. Part of the intended strategy has to be discarded and an emergent strategy to be added. The emergent strategy is formulated by the same group of personnel based on the same financial and technological resources, the same information and knowledge base and the same vision, values, beliefs and routines. Hence, one can hardly expect the emergent strategy to be an “out of the box” strategy. It may only be a substitute with minor change at the tactical level with no innovation attached. As a consequence, the outcome of the project will be modified but not too different from the previously intended.

In our case of renovation this was the situation at the time when the original windows were replaced and, even more acutely, during the trial of the renovation by the courts.

Figure 4. Stylised illustration of ideal type 2

Ideal type 3: No external disturbance but internal renewal

In this circumstance, the external context keeps stable and unchanged while the organisation significantly renews internal resources, such as hire a new manager, acquire new machinery

and technology, change its vision etc. Since there is no external demand for a change of strategy, the change of strategy may to some extent be due to lack of legitimacy and driving force. All the change in strategy will be solely directed by internal resources. The internal renewal may, but not necessarily, lead to the discard of part of the intended strategy and the introduction of an emergent strategy. To what extent the emergent strategy will be substitute or innovative depends on the innovativeness embedded in the internal renewal. One may expect that the change of CEO to one with a new mindset and competence, rather than the change to a machine with higher efficiency, may bring forward a new strategy. Among all the internal resources, human resource is the most active driver of change (Liu and Li 2009, more literature needed). Influenced by the innovativeness of an emergent strategy, the project outcome can probably just be a modified version of the intended outcome, but it can also be a new outcome that was not intended from the start.

In our case this corresponds to the situation when Real estate manager A left the firm and was replaced by Real estate manager B. According to the owner, this crucial change of staff was not intended to signal any change of strategy for the renovation.

Figure 5. Stylised illustration of ideal type 3

Ideal type 4: External disturbance with internal renewal

In this circumstance, external disturbance comes in and the organisation has to discard part of their intended strategy to cope with the external change. At the same time, new organisational resources are introduced. Particularly when new minds are employed and new social connections are built, the doors to new ideas are open. An innovative strategy may be formulated. This ideal type represents the gbest chance for an organisation to create innovation. The driving force of strategy change is twofold. On the one hand, the external context demands change. This pushing force provides urgency as well as legitimacy for a change of strategy. On the other hand, the internal resources support change. This pulling force offers capability of strategy change. The synergy between pushing and pulling forces creates a situation where innovative change in strategy is likely to happen. With the realisation of the new strategy, the project is expected to yield new outcome that is different from the intended one.

In our case this corresponds to the situation when real estate manager B had seen the television program and realized that the company had to take into account the cultural heritage perspective and introduced new forms of tenant communication.

Figure 6. Stylised illustration of ideal type 4

Conclusions

The mechanisms of strategy change are based on the interplay of external disturbance and internal renewal. The external disturbance is the trigger of strategy change but does not necessarily lead to a strategy change, particularly not to an innovative new strategy. The internal new competence is the source of changing from an old strategy to an innovative new strategy. Among all the resources, human resource is the most active and effective one for innovation. The employment of a new manager opens the door for new insights, inspirations and norms for the creation of innovative new strategy.

Real estate industry needs a transform from the rationalistic renovation model to a more inclusive one. The success of the transformation relies on two important factors. One is to introduce new mindset to the industry by recruiting, training and empowering of employees with the awareness and skills of working on the social side of renovation projects. The other is to enhance legislation and regulation to promote renovation toward sustainability.

Abstract

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The Resilient Real Estate Owner- Crisis or no Crisis:

A Manual for Everyday Management

Background

In times of fast development of technical devices and systems our everyday life becomes more and more vulnerable for disruptions. Our homes and neighborhoods are important for us in many ways, both physically as well as in a social and psychical perspective. When something extraordinary happens it is of great importance that you as an individual are prepared to manage the situation. The Swedish Government and MSB, the Swedish Civil Contingencies Agency says that you as a citizen have to: *be prepared to take your own responsibility to provide for yourself and your family for one week in a crises situation.*

After the second WW there was a widely spread awareness of how our society can be affected of some type of crisis. In telephone books in every home there were directions and guidelines on how to act and how to handle safety, security and evacuations. Sweden had also resources in both military as in civil forces to manage extraordinary situations. In Housing areas there was a tradition to build rooms for protection for nuclear attacks and for storing food. Water could be provided from hand driven pumps without need of electricity. For some years ago political decisions made the military forces reduce their resources and were also given other directions and missions. The interpretation of the global development gave this kind of basis for decisions. This period of time decreased built military facilities as well as the number of employees, and consequently a great loss of knowledge and strength. It seems that resources as well as insights and knowledge have been lost in a quiet process in this transition, concerning everyday life in crises. In new directions from the Ministry of defense “Resistance Focus on total defense and the design of civil defense 2021-2025” (Ds 2017:66) describes how these forces are going to be built up again in a more updated version. There are clear governmental directions for how this development will be operated in a national and regional perspective. Lately during, electricity loss, hurricanes, large scale wood fires and streams of refugees the national strength has been tested. Collaboration and better communication between different actors responsible for different sectors is one main general mission.

How can Real Estate Owners contribute to more resilient housing areas and commercial facilities?

Our needs of supply and systems providing electricity, communications, heat, locks and water can be secured if working proactive. As a Real Estate owner there are possibilities to be proactive in these situations if the systems are well identified, well known and documented. Are these everyday life providing-systems secured and reliable today? What negative consequences can be foreseen and therefor able to avoid?

A Manual for Everyday Management

New directions in governmental directions for civil defense can be connected to long term sustainable development and business ideas. Safety and security are important for the tenants and part of social sustainability. System for supporting electricity, heat and communications must be provided by property owners and needs certain knowledge and skills. The tenants’ needs for everyday life, behavior and detailed

knowledge about their homes can also be a resource. In proactive work for resilience this resource can be included in collaboration with the owners, both before and during some type of extraordinary situation. For the Property Owners a trustful role can be developed and give good opportunities for long term relations with the tenants.

1. The building

Documents and service manuals of all imbedded systems in a modern building including a lot of information must be interpreted and understood when managing the physical building. Are there alternative systems that can secure the systems needed for everyday life if the general system fails? With a manual for extraordinary situations this can be clarified for the technical systems.

2. Neighborhoods and “Safety points”

For the tenants the fundamental need of water, food, and information and communication must be provided immediate after loss of electricity for example. When loss of electricity for one day in Kista for some years ago people started fires when trying to cook food on grills at balconies. Without available information people tried to heat water for feeding their children. In this area lived many people from other countries without knowledge of what actors that was responsible for managing these situations. Information is essential in these extraordinary situations. In some neighborhoods there can be fifteen up to thirty languages spoken. Scenarios when panic and chaos quickly spreads when people try to survive are often seen in movies. Experiences from real life also tell us about people helping each other in a most generous way. The idea of building “Safety points” are already spread in some areas, but can be more efficiently used in everyday life as places for meetings and social activities. Real Estate owners can both contribute to social sustainability, safety and proactive work in case of extraordinary situations if providing a “Safety Point”. If you as a tenant know where to find information, get water and be able to cook food before a minor or major crisis, a lot of confusion and uncertainty can be avoided in the situation.

Method

Empirical data can be used by following up different projects in both commercial facilities and in residential areas. A network with actors' involved can become a forum for discussions and workshop with questions about how to identify technical vulnerability and achieve more resilient and robust housing areas. Tools to be used in workshops can be for example: stating different scenarios and questions that start with: what if? 24 hours without electricity. Seminars, workshops and interviews will be documented.

Aim

The aim with this paper is to propose the possibilities to meet the governmental directions, efforts and collaboration to meet extraordinary situations and crisis in society. New directions in governmental organizations mobilize collaboration between: the Swedish Civil Contingencies Agency, Country Administrative Boards, The police force, Customs Service, Municipalities and civil defense organizations. How can Real Estate companies work proactive and take responsibility within the sector, in collaboration with their own tenants and other actors. The study will probably detect gaps concerning technology, awareness, knowledge, roles and division of responsibility. The result will be a suggestion for “A manual for Real Estate Owners” with guidelines for management of both the building and supporting their tenants. The aim is to clarify a more proactive and preventive role in extraordinary situations, regarding the building and for tenants in housing areas and commercial facilities. And will also suggest a model for a combination with “Safety points” in crises and “Meeting points” for social activities in everyday life in a neighborhood.

Land Management

Chaired by Peter Parker

Analysis of Interaction between Stakeholders, Influencing Factors, and Institutions in Real Estate Projects

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Abstract

Obtaining a deeper understanding on how different factors participating in real estate development projects affect each other and the entire system is extremely important for the design of the organisation. Due to limited financial and personal resources, not all aspects of the real estate project can be monitored by the developer and his agents. In many construction and real estate related research activities, the Cross-Impact-Analysis (CIA) has proven to be a powerful tool to understanding complex systems.¹ It can be used to understand how the factors influencing real estate development projects behave and interact with each other. This allows the project developer to allocate the resources in an efficient and adequate way.

In the first step of the CIA all elements influencing real estate development projects are derived from a systematic literature review. The derivation of the factors runs along the phases of the real estate development process. The variables are classified into the groups *Laws*, *Processes*, *Stakeholder* and *Issues*. Following the influence of the derived variables on each other is determined using a set of fixed rules.² For each category, specific rules apply to weight the mutual influence. The weights are collected in the matrix of sensitivity. The active and passive sum as well as the P- and Q- values allow interpreting the roles of the variables. The active sum indicates the influence of a particular variable on the entire system, whereas the passive sum indicates how strongly a variable is influenced by the system. The P- and Q- Values serve as a measure of the criticality or the buffering character of a variable. Plotting the variables to a coordinate system finally visualizes the allocation of roles the variables play within the context of the real estate project (see Figure 1: Role allocation).³

Variables in the top left sector 1 (active variables), in the top right sector 2 (critical variables) and in the bottom right sector 4 (reactive variables) are particularly significant for understanding the complex system real estate development.

In sector 1 lie effective lever to control and steer the system. These variables are characterized by high active and low passive sums meaning that they have a high influence on the system while being hardly affected by it. In the case of real estate development, these factors include the market and location factors and the rulings of the development plan. The project developer needs to allocate most of his resources on understanding and analysing these variables, as they are only influenceable for a very short period during the real estate development process. Later, these factors can no more be altered but continue to have a very high impact on most of the remaining variables.

Elements with very high active and passive sums are called critical variables and sit in sector 2. Concerning their active sum they are similar to the variables of sector 1, but additionally they also

¹ See: Schischko, Roman: Standardizing of Cooperative Procedures to Increase Potentials of Value Generation in Land and Project Development; Altmann, Isabella Christine: The Influence of obsolescence on the value of real estate; Gottanka, Christoph: Positioning of Construction Companies in the Competitive Market regarding Added Value and Organization

² Vester, Frederic: Die Kunst vernetzt zu denken. München 2002, S. 227.

³ Zimmermann, Josef; Eber, Wolfgang: Mathematical background of key performance indicators for organizational structures in construction and real estate management. In: Procedia Engineering. Volume 85 /2014, p. 574.

show very high passive sums. This means, they are strongly affected by other variables of the real estate development system. Combining these characteristics leads in particular to a high risk of destabilization of the entire system. Such variables are e.g. *facade* and *rent per square meter* of the building as well as *citizen participation* and *definition of the target group*. Due to their high passive sum Critical variables need to be monitored throughout the entire project, as variations arise from many different factors. Additionally the project developer needs to thoroughly analyse any potential implications, if he wishes to modify any of the critical variables.

Figure 1: Role allocation

project success. *Financing conditions*, *pre-letting rate* and *marketing process* are examples of reactive variables, helping a project developer to survey the project. These are mainly Key-Performance-Indicators, defined by the project developer to ensure the project success.

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SPATIAL PLANNING AND REAL ESTATE IN THE 18TH CENTURY – THE CASE STUDY OF EASTERN CROATIA:

Abstract

Acquisition of real estate is known to be related to the role of the state, i.e. to the socio-political organization of the state through the determination of the legal and economic framework while the establishment of settlements is related to spatial planning.

Scientific literature has neglected interdisciplinary historical research (especially in south-eastern Europe) on real estate in the way to link spatial planning / regulation of villages and acquisition of real estate through land development and the effects on the economy.

Therefore, the subject of this paper is the research on the connection between state planning, private property acquisition and regulation of villages in eastern Croatia during the 18th century, part of the Habsburg Monarchy at the time.

Following the signing of the 1699 Peace Treaty of Srijemski Karlovci, signed by representatives of the Holy League (Habsburg Monarchy, Venetian Republic, Poland, Russia) and the Ottoman Empire, preconditions for the economic development of eastern Croatia were created.

A fact not to be neglected is that much of the area at that time was under forests, flooded land, swamps and pastures. The goal of the Monarchy was to populate the war-torn area with the population grouped into compact settlements (instead of scattered ones) that would engage in agriculture, forestry and fishing, as well as serve as soldiers when needed.

It is safe to say that ambitious projections of the future were made at that time, in which all land should have been put to use to a maximum and in a transparent manner. What followed was a transformation of space through the process of population, building of settlements and acquisition of real estate.

Experts from different professions (surveyors, hydro-technicians, builders, lawyers, etc.) were engaged in such a big venture. Eastern Croatia had thus been populated by Hungarians, Slovaks, Czechs, Serbs, some Italians, the local population and others.

Maps produced during the First Military Survey from 1781 to 1783 already show formed - grouped settlements.

With the ambitious state plan, eastern Croatia began to export wood and surplus agricultural products during the 19th century.

Key words: Croatia, historical view of land management, spatial planning, planned villages, spatial structure of villages, spatial identity

Introduction

In this presentation I shall discuss contemporary real estate acquisition in eastern Croatia and its relation to spatial planning i.e. Regulation of settlements and landscape.

The historical story raises a question if such a story on real estate acquisition and settlement regulation can become a tourist attraction - namely, whether it could be a "story" to get to know Croatia better.

Each village in Croatia, be it larger or smaller, was founded or died under the influence of specific political, legal, economic, social, cultural and natural conditions. As the conditions changed, so did the relation towards the village, including its spatial structure and spatial identity.

The prevailing opinion in the wider professional public is for Croatian villages to have been founded spontaneously, without any regulation plan. Most recent research indicates a significant number of planned/regulated villages in Croatia (over 250) which have been integrated into the landscape and contribute to the diversity of space, and thus also to spatial identity. Although the reasons for their emergence differ (bad weather, natural disasters or socio-economic reasons), their spatial role has not been recognized as heritage and in turn has not been put to use for tourism purposes.

Around 3 centuries ago, Croatian settlements got their specific shape, but very little research has been made on the acquisition of real estate by settlements.

Thus one can ask oneself whether real property can impact spatial identity such as the spatial structure of rural settlements - the look of rural statements.

Therefore, the subject of this paper is the research of the connection between state planning, private property acquisition and regulation of villages in eastern Croatia during the 18th century, part of the Hapsburg Monarchy at the time.

To get an insight into the problem of historical land management and planning / regulation of villages in the last 250 years, short insight into the process of permanent spatial transformation on the area of Croatia is needed.

Land management is known to be linked to the role of the state, i.e. its socio-political organization. Land management is regulated through the legal and economic as well as spatial planning system. It is, therefore, not unusual that land management is reflected in space. With the cooperation between land management and spatial planning not only are property-legal relations sorted out, but the space is shaped, the spatial identity of a certain space is formed which, inter alia, contributes to spatial diversity, and can be described through cultural landscape.

Interdisciplinary historical research has been neglected in scientific literature (especially in south-eastern Europe) on historical aspect of land management in the way that acquiring property, organization of space, spatial planning / regulation of villages and property acquisition are linked and the consequences for the society, economy and space are researched.

In Croatia, there is almost no literature, and thus also research, that connects the historic aspect of land management and spatial planning.

Although urban culture in Croatia boasts 25 centuries of existence, as particularly visible in Adriatic towns, research on planning of rural settlements and their land management has been neglected.

Croatian towns along the coast had statutes (rules/regulations) already in the 13th century, for e.g. Korčula, later also Split and Dubrovnik.

Croatia's rural space was included in numerous modernization and globalization processes (strong depopulation, deruralization etc.). According to the EUROSTAT's rural typology, 79.1% of Croatian territory has been characterized as predominantly rural area (Eurostat regional yearbook, 2012).

Given the so-called rural characterization of Croatian space, we may ask ourselves, inter alia, how did villages in eastern Croatia appear, who designed them, were they planned, what was the purpose/intention behind their development etc.

A world-known example of rural area land management in Croatia, dating back to the Antiquity, is the Stari Grad Plain on the island of Hvar (Dalmatia). In 2008, this ancient example of land management was inscribed in the UNESCO cultural and natural heritage list. Still visible today is centuriation or planning of agricultural plots or a geometrical order of agricultural plots.

In Croatia, settlements were mainly formed by the 18th and the beginning of 19th century, and this paper aims at showing land management as an interdisciplinary process (from the settlement plan via planning/regulating new settlements to property acquisition) from middle 18th century onwards.

Picture 1: Stari Grad Plain, Island of Hvar, Dalmatia, UNESCO heritage

To understand the regulation of villages in the Middle Ages, i.e. feudalism *urbaria* (lat. *urbarium*) are of great help - a collection of legal acts which, inter alia, contains data on relationships between settlements, the number of farms and people etc. One such *urbarium* is Slavonia *Urbarium* by Empress Maria Theresa which entered into force in 1756. The development of country organization called for land survey. Although there had existed individual surveys by individual owners, the first systematic topographic and economic survey, the so-called Josephine land survey took place during the 18th century when Empress Maria Theresa reorganized and founded a command for the production of maps and plans. Thus, the first systematic cadastral survey in the territory of Croatia began in 1817, within the Austro-Hungarian Monarchy, the so-called Franciscan Cadastre (after Emperor Francis I). Thus, a cadastral survey was made for Istria from 1817 to 1822. After Istria, Croatia and Slavonia were surveyed.

Due to wars in the territory of Croatia, people migrated and many villages disappeared. For example, due to the Ottoman expansion in the 16th century, inhabitants of Croatia at the time sought a new space for life and work, moving towards the "Austrian-Hungarian-Slovak contact space". For example, in eastern Austria there are still 50, in western Hungary 14 and in the area around Bratislava 4 Croatian villages (Holjevac, 2005).

What is the situation like today? To explain the present state of settlements throughout Croatia, it can be concluded that there are numerous and small settlements in Croatia. The contemporary network of settlements in Croatia still largely reflects the organization of space from the traditional agrarian society, although the increase in the number of urban population and the extinction of settlements and the erosion of the settlement network indicate its reconfiguration. Nearly 40% of all inhabited places have fewer than 100 inhabitants (39.3%). However, only 113,914 inhabitants or 2.7% of the total population lives in them. At the same time, the four large urban settlements with more than 80,000 inhabitants (Zagreb, Split, Rijeka and Osijek) account for almost a quarter of Croatian population (1,067,772 or 24.92%) (Tab. 1).

Tab 6. Number of settlements and inhabitants by settlement size in Croatia, 2011

	Number of settlements	Number of inhabitants	, %	
			Settlements	Inhabitants
Total	6.756	4,284,889	100.00	100.00
Settlements without inhabitants	150	-	2.22	-
Up to 100 inhabitants	2.653	113.914	39.27	2.66
101 – 200	1.318	192.193	19.51	4.49
201 – 500	1.448	461.114	21.43	10.76
501 – 1 000	658	462.788	9.74	10.80
1 001 - 1 500	195	240.133	2.89	5.60
1 501 - 2 000	113	194.258	1.67	4.53
2 001 - 5 000	143	434.201	2.12	10.13
5 001 - 10 000	39	264.060	0.58	6.16
10 001 - 20 000	20	274.938	0.30	6.42
20 001 - 50 000	11	342.971	0.16	8.00
50 001 - 100 000	5	320.651	0.07	7.48
100 001 - 200 000	2	295.505	0.03	6.90
200 001 and more inhabitants	1	688.163	0.01	16.06

Resources: Census of Population, Households and Dwellings 2011, Central Bureau of Statistics, www.dzs.hr

About land management and spatial planning of villages in eastern Croatia

Given that the research has a reference to historical experience, historical sources were used, as well as literature in Croatian and German, followed by collection, analysis and valorisation of archival cartographic material.

Picture 3, Podravina in Croatia and Hungary - same geographic area but different land management - reflection of space conditions - size of agricultural plots (Googlemaps)

About land management and spatial planning of villages in eastern Croatia

The eastern part of Croatia, which refers to the present day area of Slavonia and Baranja, went through great spatial changes after the war with the Ottoman Empire (peace treaty in 1699): This devastated area had to be put into the function of military defense (border area with the Ottoman Empire), yet not as a passive military area but also with a function of housing and employment.

The Ottoman Empire's military power was on the decline and the "army" needed to be "converted" into the civil sector i.e. "employ it". There was not enough human capital so land price was relatively low. Therefore, it was decided at the state level to put lowland, forest and fertile land between two rivers (Drava and Sava) into the function of housing and function of agricultural and forestry production.

Human losses during long-lasting wars were compensated through colonization (settlement) during the 18th and 19th centuries. Thus, eastern Croatia was populated by inhabitants from present-day

Germany, Austria, Hungary, Slovakia, the Czech Republic, and some from Italy and France.¹ This means that the migration route ran north - south, primarily due to land prices.

The area of Gorski Kotar (direction Zagreb - Rijeka - towards the sea) has prompted the construction of new roads and in the late 19th century of new railways. Roads generated trade and initiated the construction of new settlements. Thus, for example, during the construction of the Karolina Road between 1725 and 1732 (route Karlovac - Dubovac - Novigrad na Dobri - Bosiljevo - Vrbovsko - Ravna Gora - Stari Laz - Mrkopalj - Fuzine - Zlobin - Meja, with branches towards Bakar and Rijeka) forests were cleared and deforested land transformed into arable land.

Past scattered settlements had to be regulated and agricultural land had to be prepared for agricultural production. Existing forests (mainly oak forests) had to be cleared to prepare agricultural land. Valuable timber was exported, inter alia, to France for the production of wine barrels.

Due to the increasingly intensive agricultural production and its market orientation, new spatial organization was sought, such that would be spatially and functionally adapted to contemporary requirements of agricultural production. In mid-19th century, specific settlements were built in Slavonia and Baranja, called "wastelands", for the production and dwelling. Zoning was introduced - production and residential zones.

Picture 4, Scheme of "wastelands"/ pustara in Baranja

¹ Individual calls to populate an area were used even at the end of the 19th century when some landowners called the population to clear and settle certain spaces.

However, by looking at the wider image of the area, it is evident that at the end of the 18th and the beginning of the 19th century, soil melioration was done, that is, the drainage of the wetlands for agricultural production and settlement.

With this “interdisciplinary” project, a new spatial identity was created.

Following the signing of the 1699 Peace Treaty of Srijemski Karlovci, signed by representatives of the Holy League (Habsburg Monarchy, Venetian Republic, Poland, Russia) and the Ottoman Empire, preconditions for the economic development of eastern Croatia were created.

A fact not to be neglected is that much of the area at that time was under forests, flooded land, swamps and pastures. The goal of the Monarchy was to populate the war-torn area with the population grouped into compact settlements (instead of scattered ones) that would engage in agriculture, forestry and fishing, as well as serve as soldiers when needed.

It is safe to say that ambitious projections of the future were made at that time, in which all land should have been put to use to a maximum and in a transparent manner. What followed was a transformation of space through the process of population, building settlements and acquisition of real estate.

Experts from different professions (surveyors, hydro-technicians, builders, lawyers, etc.) were engaged in such a big venture. Eastern Croatia has thus been populated by Hungarians, Slovaks, Czechs, Serbs, some Italians, the local population and others.

Maps produced by the First Military Survey undertaken from 1781 to 1783 already show formed - grouped settlements.

Alongside that large state project – interdisciplinary land management – population, land development, settlement regulation, agricultural production etc. were carried out.

Real estate acquisition agreements have been preserved.

Land management heritage

We can now go back to the beginning and ask if land management can be heritage together with the new spatial structures of the village?

Integrated view of cultural heritage is encouraged in numerous documents on the global, and especially on the European and national levels. Based on the framework convention of the Council of Europe on the value of cultural heritage for the society (known as the Faro Convention, 2005) The European Council adopted a decision in 2014 stating that "cultural heritage is a strategic resource for the sustainable Europe".

Conclusion

Looking into land management that was linked to spatial planning in eastern Croatia during the 18th century, it is safe to conclude it was a large state interdisciplinary project (settlement, cadastre, hydro-technical works, agronomists, etc.).

Although the urban planning-rurism profession is mainly of opinion that villages appeared spontaneously, the examples show the opposite - eastern Croatian villages were planned, but in cities.

The mentioned land management project in cooperation with numerous and different professions and as a public policy has regulated

- Real estate registry (cadastre)
- Rural land and property
- Housing and living
- Ensured ownership of real estate with the help of Real Estate Law
- Regulated property management
- Started organized agricultural and forestry production, which, although in its beginnings intended for own survival, soon became economically profitable and generated surplus of agricultural products.

It can be concluded that populating eastern Croatia during the 18th century was a big strategic project of the state government which, in addition to regulating colonization/population, registering property, arranging ownership, initiating agricultural production and forestry, regulating and designing the village, etc. In short, it was a big land management project closely linked to spatial planning.

Today, this entire state-level interdisciplinary project is presented here from the historical point of view, primarily as a "land management project" from which one can learn a lot. This socio-economic strategic project through land management was certainly a "project for the future". Such a comprehensive project made a mark on the space (although it survived several centuries and various socio-economic organizations).

The contribution of the 18th century national project is multidimensional because it:

- contributes to the spatial identity that is recognizable even today,
- contributes to spatial diversity (no village is identical),
- represents economic-agricultural and cultural and rural heritage (material and immaterial).

This large land management project, although designed as a top-down project, had features of environmental acceptability and sustainability with a transnational culture.

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Circular Economy in the Real Estate Sector – a Review

Riikka Kyrö

ABSTRACT

Only very recently has the concept of circular economy gained momentum in the public sphere, and inspired consequent research. Within the field of built environment, the debate is even more nascent. This study aims at developing the definition of circular economy specifically for the purposes of the real estate sector. A definition of circular economy in real estate, is derived from the results of a systematic literature review. The systematic database search returned altogether 144 articles, of which 83 were found relevant to the review. Notably, all articles date from 2016-2019, confirming the novelty of the research area. The majority of the articles discuss the use of salvaged or recycled building materials in new construction, or building material banks (also referred to as urban mining). Moreover, approximately one quarter of the articles consider circularity on the city scale, leaning towards the disciplines of urban metabolism and industrial ecology. Interestingly, the existing building scale, which is most relevant to the real estate sector, is the focus of only 15 scientific articles at the time of the review. An additional few articles discuss the built environment holistically, and provide insight on all three aforementioned scales. The definition of circular economy in the real estate sector is developed based on the articles from the last two categories. To the best of the author's knowledge, this is the first explicit definition of circular economy in the context of the real estate sector. Based on the review, despite recent advancements in literature, much more research is needed about the transition to a circular economy on the scale of existing buildings. Therefore, the study also outlines a future research agenda, focusing on implications to the real estate management profession.

Keywords: built environment, buildings, circular economy, literature review, real estate sector, real estate management

Individual Metering and Charging

- A theoretical study about hot water consumption, overcrowding and fuel poverty

Abstract

Individual metering and charging (IMC) in multi-apartment buildings implies that the final costumers should pay only for the actual consumption of energy. The purpose is to achieve a fair cost allocation and to make tenants aware of their consumption, which could lead to an energy saving. According to an EU-directive from 2012, all member states shall implement laws that decrees IMC. However, the Swedish National Board of Housing, Building and Planning (Boverket) condemns IMC as not being cost-efficient and therefore there is for the moment no requirement for IMC in Sweden.

The purpose with this study is to describe today's situation of implementing IMC of hot water, and to analyse underlying reasons why entire residential areas or individual multi-apartment buildings have higher hot water consumption compared to others. The aim of the study is to be able to draw general conclusions about economic consequences for the tenants with IMC of hot water and to see whether there is a risk of fuel poverty. The study is limited to investigate only rental apartments situated in Sweden. The study is theoretical and is based on information gathering from authorities, organizations and researchers. The core of the research is topical and affected by politics, housing situation, rent negotiations, contributions and energy use.

The recommendation from Swedish Association of Public Housing Companies (SABO) is to set the normal hot water use to 0.35 m³ per square meter living space in energy efficient multi-apartment buildings, and 0.40 m³ in other multi-apartment buildings. However, most companies set the normal hot water use based on the apartment's number of rooms. This can be misleading since the normal hot water use is also correlated to the number of people livings in the apartment, and apartments with larger rooms can be more crowded. A lower hot water use in energy efficient buildings might not only arise from water saving technics. Energy efficient building are probably newer or recently renovated with a higher standard and thereby they have a higher rent and tenants with a higher income. Thereby they might also be less crowded. According to statistics, between 7 and 10 percent of the population in Stockholm, Gothenburg and Malmö are overcrowded. There is greater overcrowding among foreign-born people and in low-income areas. Overcrowding is greatest in small apartments and among families with teenage children.

The variation of hot water consumption among individual users can be due to many different factors such as needs, habits and knowledge. However, the answer to the question of why some residential areas or individual multi-apartment buildings have higher hot water consumption compared to others can largely be answered with overcrowded living. By investigating the implementation of IMC by two large property owners in Malmö and Lund together with the housing benefit system, the general conclusion is that the risk of fuel poverty in Sweden is very small.

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