

## **A Study on the Experiences of Arable Land Owners on Land Rearrangement - Project-Related Land Consolidation with a Public Road Project at Pajuneva in Finland**

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**Key words:** land consolidation, land rearrangement, subjective experiences, satisfaction, public road

### **SUMMARY**

The reasons for studying land rearrangements have conventionally been economical, technical, juridical and evaluation theoretical. If these issues are examined and well adopted, then the arrangement is considered successful. However, success also depends on how satisfied the real property owners are with the arrangement. Such a research perspective is new in Finland. The aim of the study was to establish whether real property owners are satisfied with the land rearrangements carried out in connection with public road projects. The study focused on arable land owners in Southern and Western Finland, where a concentration of cultivated arable land is found. The sample consisted of a land rearrangement project in Pajuneva. Both quantitative and qualitative methods were used. The results obtained in Tyler's study on subjective experiences of procedural fairness components were subjected to testing.

The study provided new scientific information and supported the results of Tyler's research. A statistically significant factor having a positive effect on satisfaction was the possibility to participate. Adequate information acquisition described the possibility to participate. What also added to the satisfaction was the trust-based course of action, which meant a confidential relationship, fair atmosphere during discussions and concentration on facts. Both factors were statistically highly significant when concerning the land rearrangement process, and the outcome of the land rearrangement. Outside the survey proceedings, the fast schedule of the reparation works had a positive effect on satisfaction. The results obtained apply to the project carried out in Pajuneva and to similar occasions. The study indicates that the results could also be generally applied in Finland in areas, in which cultivation is concentrated. Therefore, the study paves the way for future studies.

The public road project can be carried out as expropriation proceedings instead of land rearrangement. It could therefore be interesting to study the real property owners' experiences on the expropriation proceedings.

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## **1 INTRODUCTION**

The reasons for studying land rearrangements have conventionally been economical, technical, juridical and evaluation theoretical. If these issues are examined and well adopted, then the arrangement is considered successful. However, success also depends on how satisfied the real property owners are with the arrangement. Such a research perspective is new in Finland.

The aim of this study was to establish how real property owners experience the acquisition of land in a public road project when carried out as land rearrangement. Here, a real property refers to an area of land including interests in joint property units, easements, usufructs and special rights. It is a cadastral unit. (Real Estate Formation Act, KML, Section 2.) Real property can be owned by a fulltime farmer, but also by a person, who has another main occupation.

The objects of the study were real property owners who own arable land in Southern and Western parts of Finland; hereinafter referred also to as arable land owners. The sample consisted of arable land owners of Pajuneva land rearrangement. They were subjected to changes considering the location of their parcels, as well selling or buying land during the land rearrangement.

The degree of satisfaction was studied on the basis of the subjective experience of fairness. The arable land owners assessed their experiences themselves. The research answered the questions:

- Can the components of subjective experience of procedural fairness introduced by the American Tyler explain the arable land owner's satisfaction?
- If so, specify the components that explain the satisfaction?
- Did the owners experience the land rearrangement as a neutrality-based or trust-based course of action of public authorities?

The study was quantitative and qualitative. Tyler has conducted studies on both judicial proceedings and administrative issues. The reason for studying Tyler's theories was that the cadastral survey shows many similarities with the judicial proceedings; even it is an administrative proceeding. (Holma 1995, p. 237, Hyvönen 1998, pp. 24-25, Pietilä 1981, p. 2).

The first part describes the theoretical background. The second part explains the expropriation project of the bypass road in Pajuneva. This was the first ever project in Finland, where the Finnish Road Administration (Finnra) acquired such an amount of land that the entire public road area could be located on state land (Tiehallinto tiedote 2008). The statistical data used date back mainly to the time before the start of the Pajuneva project in 2005.

## **2 A GENERAL DESCRIPTION OF THE SITUATION IN FINLAND**

### **2.1 Agriculture in Finland**

In Finland, the number of agricultural land in production is approximately 2.3 million hectares (TIKE 1). This land is 99.9 percent privately owned. The agricultural income of the gross domestic product is 1.2 %, but the significance of agricultural production is far more important. Almost 80 percent of the agricultural output is processed by the country's own food processing industry. The Finns appreciate domestic food and an adequate self-sufficiency in foodstuffs is also the aim of the society. What is also important for the Finns is the national landscape, where they more than gladly spend their time. Cultivated fields form a substantial part of such a landscape and the living environment of the people. (Myyrä et al. 2008, pp. 12-14.)

A rapid structural change is taking place in the rural area. The population decreases and the active cultivation of arable is land mainly concentrated to Southern and Western parts of Finland. Also transportation is undergoing change. Long-distance and fast transportation on road and rail should be distinguished from heavy and short-distance transportation. This causes traffic safety problems and harm to the local agricultural traffic. (Maa- ja metsätalousministeriön tilusjärjestelystrategia 2008-2013, pp. 10-12, 17-18, Ratahallintokeskuksen toiminta- ja taloussuunnitelma 2010-2013, p. 49.) Both trends affect the use of properties and cause a need to carry out land rearrangements.

### **2.2 Land rearrangements in Finland**

The scattered property structure of arable land is the result of the development that has been adopted for centuries, including reallocation of land controlled by the society and settlements carried out after the first and second world wars. Nowadays even in the most active agricultural areas the size of real properties is small and the number of their parcels is large. (Maa- ja metsätalousministeriön tilusjärjestelystrategia 2008-2013, p. 7.)

In 2008, the farms owned, on average, 15.3 hectares of arable land. In addition, approximately 61 % of the arable land owners leased, on average, 19.7 hectares of arable land. (TIKE 2.) The average size of blocks varies in the provinces. Even in areas considered to have a good property structure, nearly half of the basic blocks are below 2 hectares, and in poorer areas three of four blocks are smaller than 2 hectares (Ylikangas 2004, p. 12.)

The maximum lease time of arable land is 10 years (Maanvuokralaki, Section 71). In land rearrangements, such a short term of tenancy means that the owner's position is better than the leaseholder's position. An arable land owner very often also has leased arable land. For those reasons, it is important to establish the experiences of arable land owners.

Real Estate Formation Act (554/1995), Highways Act (503/2005) and Rail Tracks Act (110/2007) all include new provisions. Land rearrangements can be done not only for agricultural needs but also for integrating social projects as smoothly as possible into other activities (Real Estate Formation Act, Section 67.3, Highways Act, Section 63, Rail Tracks Act, Section 53).

The National Land Survey of Finland has actively developed the land rearrangement process. The aim is to speed up the arrangements and to improve the hearing of owners. Cooperation especially with authorities handling environmental, road and rail administration has been improved. Together with them it has developed methods for evaluating property effects caused by the social projects, for reducing negative effects and for carrying out project-related land consolidations. The operation tends to combine different views. (Maanmittauslaitoksen tilusjärjestelystrategia 2007, Maa- ja metsätalousministeriön tilusjärjestelystrategia 2008-2013, pp. 17-18.)

### **3 THEORETICAL BACKGROUND OF THE STUDY**

#### **3.1 Satisfaction towards the measures of judicial authorities**

Studies relating to judicial authorities have conventionally been associated with the outcome of legal proceedings. Such studies have focused on, for instance, how satisfied the people have been with the outcome. In the last decades, results have been shown according to which satisfaction of the people is largely based on fairness evaluations of process, not on outcome. (Tyler 1988, pp. 103-106; 1990, pp. 71-74.)

This study focused mainly on the subjective experiences of fairness. The American researcher Tyler has studied these issues. His studies include large statistical sections. (Tyler 1990, p. 8.) Issues of fair processes are not only interesting for Americans. Lariviere has noted widespread dissatisfaction with the civil process of the justice system in France. (Lariviere 1996.) At common level this confirms that studies focusing on processes are also needed in Europe.

#### **3.2 Tyler's studies on the authorities' activities**

According to Tyler the subjective experiences of fairness of those who have been subjected to legal acts seem to depend on the social commitment between the subjects and the authorities. This is referred to as a relationship model. (Ervasti 2004, p. 176.) Tyler has therefore not been interested in the mutual experience of the parties concerned.

The type of situation has an effect on which factors best describe fairness. But, human

characteristics, such as sex, age, race, education, liberalism or income, cannot provide the explanation. (Tyler 1988, p. 125.)

### **3.3 Components of experienced fairness**

In the following, the results of Tyler`s two studies (1988; 1997) have been combined. This is done because Tyler developed the outcome of the first study in his second study. The first study dealt with civil and non-civil cases of judicial authorities as well as the activities of the police department. The second study related to mediation of judicial conflicts. In all cases the person always had his or her interest at heart (Tyler 1988, p. 121).

Combining studies provided six components as a result, which are:

- possibility to participate
- trustworthiness of the authorities
- ethicality of the authorities
- neutrality of the authorities
- outcome quality/accuracy and
- possibility to appeal

The possibility to participate means that people are provided with information. They have a chance to present their views and to hear the views of others concerned. Trustworthiness signifies that the authorities treat all parties equally and fairly. The needs of the parties are established and their views are taken into account. Ethicality means that parties must be treated politely and with respect. This communicates the social status of the individual in the society. Neutrality includes impartiality and honesty. A change to appeal should always be possible. (Tyler 1988, pp. 117-132; 1997, pp. 887-892.)

### **3.4 Neutrality-based and trust-based concept of the authorities**

In Finland, Haavisto (2002) has made a study focusing on the implementation of the civil procedural reform within district courts. The written proceedings based on briefs were mainly replaced with oral presentations. The passive role of the judge was to be changed to an active one. A new task was the introduction of court mediation. (Haavisto 2002, p. 3.)

The main finding was that court hearings were changing from formal monologues to informal dialogues. Customers were making more initiatives. Concerning the use of the court mediation, the learning process was about to start. Previously formal and distant discussions had been the foundation of impartiality and neutrality, but were no longer suitable as the mode of action in the modern courtrooms. The significance of informal communication as a builder of trust had been taken into account. (Haavisto 2002, pp. 286-287, 294.)

Haavisto`s findings support the researches of Tyler (1997, pp. 889-891, also Tyler ja Kerstaller 1994). The neutrality-based concept of the authorities is changing towards a trust-based one. Confidential discussions are used in the trust-based concept. This also means that

instead of focusing on signs of professionalism, people pay attention to the morality of the authorities. Their individual characteristics and social contacts are becoming important factors. (Haavisto 2002, p. 294.)

## 4. THE OBJECT OF RESEARCH

### 4.1 The target area and road project

The object of the study was the new public road between Kiikku and Pultra on the north side of the city of Seinäjoki, Pajuneva. The road was planned to the arable land, including no forest land.

The section of the road was 5.74 kilometres long and it proceeded on land areas of 46 different real properties. Finnra had purchased arable land in the vicinity of the road area, which was intended to be allocated in a land rearrangement process on the road line. They had purchased so much land, that the whole road could be built on state's land after land rearrangement process. And, some land could also be sold as additional land to the arable land owners. (Tiesuunnitelma 2005, p. 7, Tiehallinto tiedote 2008.)

### 4.2 Final engineering plan, need assessment (KIVA-procedure) and land rearrangement

Figure 1 shows the schedules between the land arrangement and the final engineering plan. Time-wise the processes overlapped one another. Finnra had, for instance, not approved the plan until the discussions with the real property owners had been held in connection with the land rearrangement process.

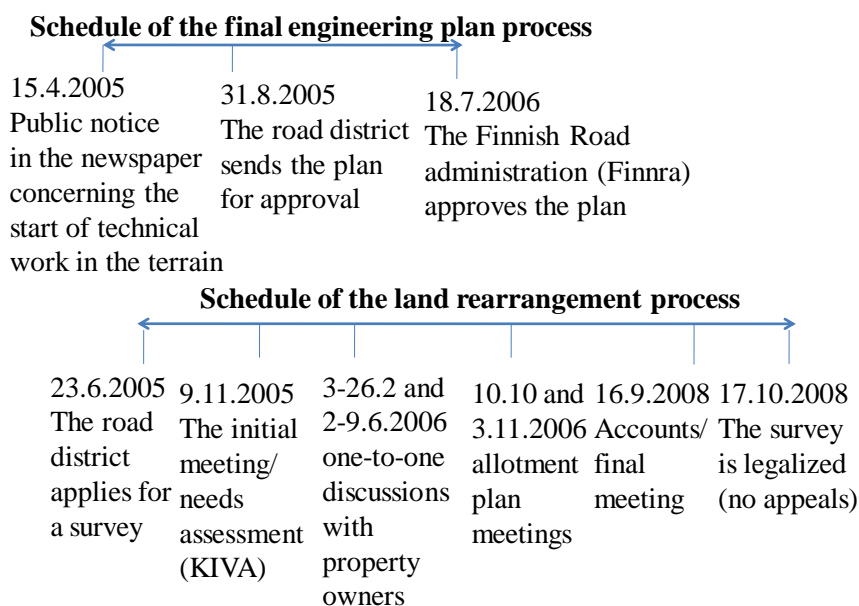


Figure 1. Schedules of the final engineering plan and the land rearrangement process, the road in Pajuneva (Tiesuunnitelma 2005, Tiesuunnitelman hyväksymispäätös 2006, Toimituspöytäkirjat)

At first the need for land arrangements was assessed during the cadastral survey (need assessment phase, KIVA-procedure). All real property owners in the field-area, including those whose fields were not included in the road line, were provided with a chance to conduct one-to-one discussions with the surveying expert. These discussions were confidential. Most of the owners used this opportunity to discuss. (Toimituspöytäkirjat.)

The cadastral officers noticed the need for land rearrangement during the KIVA-procedure. Therefore, the implementation was carried out as land consolidation. At reallocation plan stage the real property owners were provided with a new chance for discussion. They always had the chance to contact the surveyor on the phone. In addition, the surveyor was travelling a lot in the area and was easily reachable. (Koskela et. al. 2009.) No one appealed against the survey. (Toimituspöytäkirjat, JAKO-info.)

#### 4.3 Properties subjected to the land rearrangement and their background data

The outcome applied to 46 real property owners. Furthermore, some real properties were only subjected to draining and private road arrangements. (Mäki-Valkama 2009, pp. 34-38, 48.)

Table 1 shows information on the region. Corresponding data of Southern and Western Finland as well as Eastern and Northern Finland are also depicted. (TIKE 2, IACS data)

*Table 1. Depicting information from the land rearrangement area in Pajuneva, Southern and Western Finland as well as Eastern and Northern Finland (TIKE 2, IACS data)*

<b>Factor</b>	<b>Pajuneva year 2005, mean</b>	<b>Southern and Western Finland * year 2005, mean</b>	<b>Eastern and Northern Finland ** year 2005, mean</b>
owned arable land/unit of use (farm) ***, hectares (ha)	25,5	16,2	10,7
leased arable land/unit of use, ha	21,5	19,3	16,1
<i>total amount of arable land/unit of use, ha</i>	47,0	35,5	26,8
percentage of units of use having leased arable land in possession	54 %	60 %	65 %

\* the Employment and Economic Development Centres in South Ostrobothnia, Häme, Pirkanmaa, Ostrobothnia, North Ostrobothnia, Satakunta, Uusimaa, Varsinais-Suomi and South Eastern Finland.

\*\* the Employment and Economic Development Centres in the Åland islands, South Savo, Kainuu, Central Finland, Lapland, North Karelia and North Savo.

\*\*\* A “unit of use” is an economic entity consisting of one or more parcels of real property, such as cadastral units (Kiinteistöarviointisanasto [Real estate evaluation glossary 1986], p. 24). It is a farm.

Table 1 shows that the data on the surface area of arable land is closer to the mean data of Southern and Western Finland than the mean data of Eastern and Northern Finland. The farms in the area are, however, larger than the average farms in Southern and Western Finland.

#### 4.4 General description of research material and enquiry

The research material included arable land owners' answers to structural and theme questions as well as statistical data. Interviews with experts from the National Land Survey of Finland and the Finnish Road Administration were also used.

A questionnaire in a Norwegian study was used as a model when the questionnaire was planned. This questionnaire included questions of experiences gained from court mediation (Knoff 2001). In Norwegian legal conflicts external parties are working to solve conflicts (Austbo and Engbretsen 2006). So are doing also the Finnish cadastral officers during the land rearrangement process. The questions described the view of the authority-decisions as well as the negotiation theoretical views. American studies about negotiations were also used to form the questionnaire (Lewicki and Litterer 1985, pp. 99-100, 111, 114).

Two arable land owners tested the questionnaire. The questionnaire was sent (6 July 2009) by mail to 88 real property owners, who had got an invitation to the survey meeting. Reminding letters were sent on 22 July 2009.

#### 4.5 Questions

The questionnaire included basic questions concerning the respondent background and her or his satisfaction. Previous experiences from other expropriations and arable land arrangements and later experiences of this project were also enquired. The previous and later experiences could have an effect on the assessments of personal experiences on this case. (Tyler 1988, pp. 111-112.)

The questions about satisfaction were formed into statements. Using them the abstract components were converted into the concrete issues. In the following the statement pairs are described.

- *Offering a possibility to participate:* I was given the chance/enough time to negotiate/discuss the matter. / I was not given the chance and enough time to negotiate/discuss the matter, and I received an adequate amount of information. / I did not receive an adequate amount of information.
- *Trustworthiness of the authorities:* I trusted the cadastral surveyor and the trustees. / I did not trust the cadastral surveyor and the trustees. The cadastral surveyor and the trustees were well aware of my specific needs. / The cadastral surveyor and the trustees were not aware of my specific needs.
- *Ethicality of the authorities:* The cadastral surveyor and the trustees were skilful. / The cadastral surveyor and the trustees were not skilful.
- *Neutrality of the authorities:* The cadastral surveyor and the trustees were impartial. / The cadastral surveyor and the trustees were not impartial.



Two questions described the satisfaction with the processes. I was satisfied with the land rearrangement process. / I was not satisfied with the land arrangement process. The land arrangement survey was carried out without any disagreements and to my total satisfaction. / There was disagreement over compensations and other issues. The land arrangement survey did not satisfy me.

In addition, two questions described the satisfaction with the outcome. I was satisfied with the outcome. / I was not satisfied with the outcome. Did you make an appeal to Land Court? No, I was satisfied. / Did you make an appeal to Land Court? I made an appeal or I did not make an appeal, even if I was unsatisfied.

The confidential course of action was described by the following statement pair: We had confidential relations, straightforward discussions and we concentrated on facts / We did not have confidential relations, straightforward discussions and we did not concentrate on facts.

The theme part provided a chance to answer the question "Other experiences".

## **5 RESULTS OF THE STUDY**

### **5.1 General**

The Real Estate Formation Act (kiinteistönmuodostamislaki 554/1995, KML) describes in detail how to inform the parties involved about the survey. All parties should be provided with a possibility to participate. The act also explains the principles of cadastral survey. (KML, Chapters 2, 3, 8 and 9.) In addition the National Land Survey of Finland has drawn up practical process instructions (Tilusjärjestelyprosessin ohjeet) to be followed during the proceedings.

The land rearrangement abided by the law and regulations. The cadastral records showed the course of the proceedings, the claims of the real property owners and the detailed decisions of the cadastral officers. No public documents were drawn up of one-to-one discussions. (Toimituspöytäkirjat.)

### **5.2 General results of the enquiry**

The researcher received 57 responses. Ten of the respondents declared that the land rearrangement did not concern them, since the location of their land had not changed. Such blank replies were deleted from the data as well as seven incomplete answers. Forty replies remained in the analysis. Among them were one or more answers to the main questions (Table 2, questions 1-8). The missing answers to some part-questions were considered to describe a neutral point of view. The replies included eleven answers written in free form.

The response rate was 87 %. Consequently, no specific analysis of nonresponses was conducted.

### 5.3 Responses and analysis of them

The answers to the subjective experiences describing the situation were very positive (Figure 2). Figure 3 shows the answers to the questions related to the respondents' background information, previous and subsequent experiences as well as dissatisfaction. Quite few respondents have had previous experiences on other land arrangements or later experiences of this road project. Few respondents seem to have been unsatisfied even no one appealed against the survey. The schedules were not always considered to have been satisfactory.

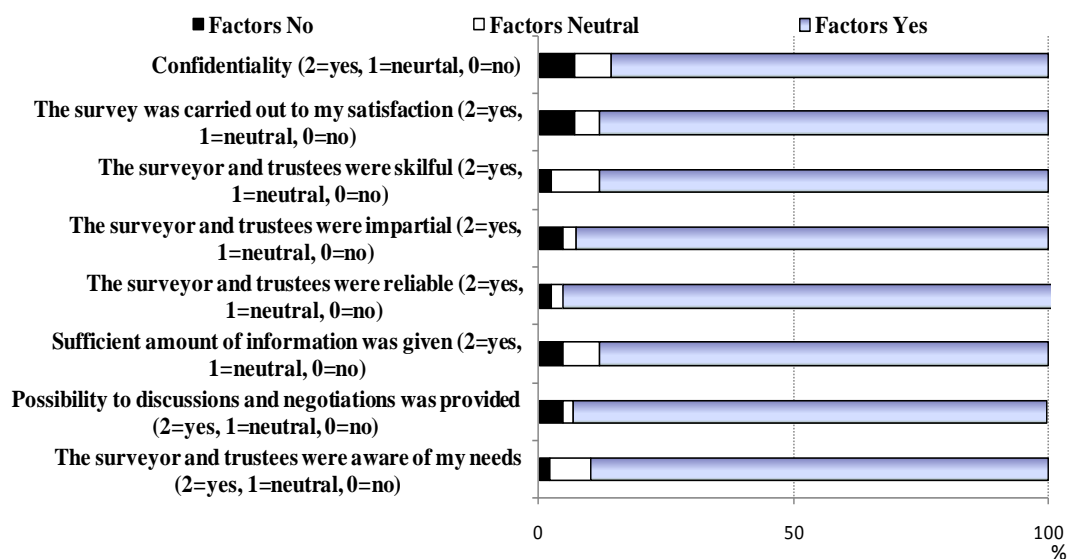


Figure 2. Factors and answers associated with the situation, the bypass road in Pajuneva

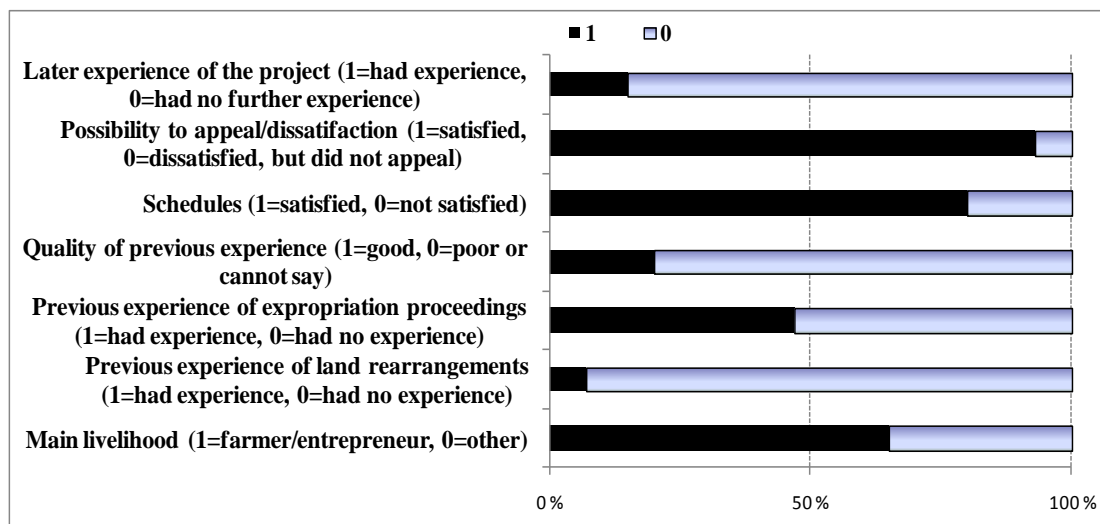


Figure 3. Other factors and answers than those associated with the situation, the bypass road in Pajuneva

Table 2 shows the numerical combination of the responses. Thus, 98 % of respondents were satisfied or had a neutral view on the outcome, and 95 % of respondents had a positive or neutral view on the survey (land rearrangement) process.

Table 2. The bypass road in Pajuneva, basic data, answers 40=n

<i>Factors</i>	<i>Number of answers</i>	<i>Percent %</i>
<b>1. Main livelihood,</b> 1=farmer, entrepreneur, (0=other, for instance employee, pensioner)	26 (14)	65 (35)
<b>2. a. Previous experience of land rearrangements,</b> 1=yes, (0=no)	3 (37)	7 (93)
<b>2.b. Previous experience of expropriation,</b> 1=no, (0=yes)	19 (21)	47 (53)
<b>2.c. Quality of previous experience,</b> 1=good, (0=poor/cannot say)	8 (32)	20 (80)
<b>3.a. The surveyor and trustees were aware of my needs,</b> 2=yes, 1=neutral, (0=no)	36, 3, (1)	90, 8, (2)
<b>3.b. Possibility to discussions and negotiations was provided,</b> 2=yes, 1=neutral, (0=no)	37, 1, (2)	93, 2, (5)
<b>3.c. Sufficient amount of information,</b> 2=yes, 1=neutral, (0=no)	35, 3, (2)	88, 7, (5)
<b>3.d. The surveyor and trustees were reliable,</b> 2=yes, 1=neutral, (0=no)	38, 1, (1)	96, 2, (2)
<b>3.e. The surveyor and trustees were impartial,</b> 2=yes, 1=neutral, (0=no)	37, 1, (2)	93, 2, (5)
<b>3.f. The cadastral officers were skilful,</b> 2=yes, 1=neutral, (0=no)	35, 4, (1)	88, 10, (2)
<b>4. Confidentiality,</b> 2=yes, 1=neutral, (0=no)	34, 3, (3)	86, 7, (7)
<b>5. Schedule,</b> 1=satisfied, (0=not satisfied)	32 (8)	80 (20)
<b>6. Later experience of the project,</b> 1=yes, (0=no)	6 (34)	15 (85)
<b>7.a. Possibility to appeal/dissatisfaction,</b> 1=satisfied, (0=dissatisfied, did not appeal or appealed)	37 (3)	93 (7)
<b>7.b. Satisfied with the outcome,</b> yes=2, neutral=1, (no=0)	36, 1, (3)	90, 2, (8)
<b>8.a. The survey was carried out to my satisfaction,</b> 2=yes, 1=neutral, (0=no)	35, 2, (3)	88, 5, (7)
<b>8.b. Satisfied with the process,</b> yes=2, neutral=1, (no=0)	29, 9, (2)	73, 22, (5)

### Statistical analysis

The data was analyzed using a linear regression analysis. Regression analysis allows discovering the simultaneous effect of the explanatory factors. First was established the correlations between the various factors. The expertise of the cadastral officers correlated 95% with the sufficient acquisition of information. Also, the possibility to negotiations correlated strongly with the factor confidence. In order for the analysis not to become distorted factors “the expertise of the cadastral officers” and “the possibility to negotiations”, were not included in the analysis.

The factors shown in table 3 had an effect on the satisfaction of the outcome of the land rearrangement. They explained 78 % of the satisfaction.

Table 3. The arable land owners' satisfaction with the outcome of land rearrangement, explanatory factors, the bypass road in Pajuneva (n=40)

<i>Explanatory factor</i>	<i>Tyler's classification</i>	<i>Significance</i>	<i>Direction</i>	<i>Mean error</i>
Sufficient acquisition of information	Possibility to participate	***	+	0,04623
Trust-worthiness	Concept of the authorities	***	+	0,04029
(Fast) Schedule	-	*	+	0,04787

\* significant level, 95 % i.e. P-value  $0,05 \leq P\text{-value} \leq 0,01$

\*\*\*significant level, 99,9 % i.e. P-value below 0,001

+ positive effect on the factor to be explained

The component of satisfaction included the possibility to participate, which meant getting enough information. A trust-based concept of the authorities increased satisfaction. Both factors are highly significant. The relations had been confidential and good discussions were held and the mode of action focused on facts. The schedule was nearly significant. It was question of delays with reparation works (section 5.4). The respondents would like to have had a fast schedule. Reparation works were not included in land rearrangement process.

What showed statistically highly significant effect on satisfaction with the process was the sufficient acquisition of information. Also trust-based concept of the authorities increased the experience of satisfaction (table 4). These two factors explain 75 % of the satisfaction.

Table 4. The arable land owners' satisfaction with the land rearrangement process, explanatory factors, the bypass road in Pajuneva (n=40)

<i>Explanatory factor</i>	<i>Tyler's classification</i>	<i>Significance</i>	<i>Direction</i>	<i>Mean error</i>
Sufficient acquisition of information	Possibility to participate	***	+	0,09894
Trust-worthiness	Concept of the authorities	***	+	0,08588

\*\*\*significant level, 99,9 % i.e. P-value below 0,001

+ positive effect on the factor to be explained

## 5.4 Free form responses and interviews

The free-form responses were analysed qualitatively (more about research method Tuomi & Sarajärvi 2006, pp. 93–106). The analysis included 17 responses of another theme enquiry associated with the same target area (Mäki-Valkama 2009, pp. 48-49).

The course of action was preferred in relation to conventional expropriation proceedings against compensation. Those carrying out the land rearrangement were very kind and worked fairly. The possibility to hold discussions with the cadastral surveyor was considered to be a confidential occasion. After the land rearrangement, the cultivation conditions had improved and costs had decreased, but the reparations of private roads and ditches were delayed.

The interviews supported the responses. The area was such that the results obtained from it can be applied to other active agricultural areas in Finland. There the farmers will have all the arable land they currently possess, and may be acquire some more. (Koskela et. al. 2009.)

## **6 CONCLUSIONS AND DISCUSSION**

The aim of the study was to discuss, for the first time in Finland, the satisfaction of real property owners with land rearrangement carried out in a public road project. The population was arable land owners in Southern and Western Finland. The sample consisted of a land rearrangement in Pajuneva. Statistical and qualitative research methods were used. Subjects for testing included the fairness components of Tyler as well as the concepts of authorities.

A statistically highly significant component of satisfaction was the possibility to participate, which meant sufficient acquisition of information. It had a positive effect on, how the parties involved experienced both the outcome of land arrangement and the land rearrangement process. Outside the land rearrangement, the fast schedule of the reparation works had a positive effect on the satisfaction with the outcome. It was nearly significant factor. This means that reparation works of private roads and ditches were considered to be a part of the land rearrangement, and the timetables of reparations should have been suitable also for the arable land owners.

Thrust-based course of action was also a highly significant factor, and increased satisfaction. It meant that the relations were confidential and fair discussions were held during the rearrangement. The mode of action focused on facts.

The study provided new scientific information. Part of the components of subjective experience of fairness introduced by the American Tyler explained the arable land owner's satisfaction. Both, external factors outside the situation or individual characteristics were not significant when considering how the subjective experiences are created.

The response rate of the enquiry study was 87 %. Thus, the results describe the arable land owners' assessments of the subjective experiences in connection with the land rearrangement of Pajuneva. They also describe the experiences in similar occasions. The study indicates that the results could apply to arable land owners in Southern and Western Finland. The concepts of practicing experts strengthen this interpretation.

The arable land owners were satisfied with the land rearrangement. This means that, the land rearrangement process in use had been very suitable to the case. In Finland the legislation provides satisfactory grounds to use land rearrangements already at the moment. But, expropriation proceedings with road projects should be completed with need assessment phases (KIVA) and land rearrangements. At present this new mode of action is only partly in use.

It might be of interest to conduct a similar study on the implementation of a public road

project by means of an expropriation proceeding. When the principles of the judicial proceedings have changed in Finland, this may have an effect on experiences.

This study was the first one in Finland to research subjective experiences of land owner's satisfaction on land rearrangement process. Therefore it remarkable, and also paves the way for future studies on international level.

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