

URBAN INFILL AND THE PERCEIVED QUALITY OF THE LIVING ENVIRONMENT

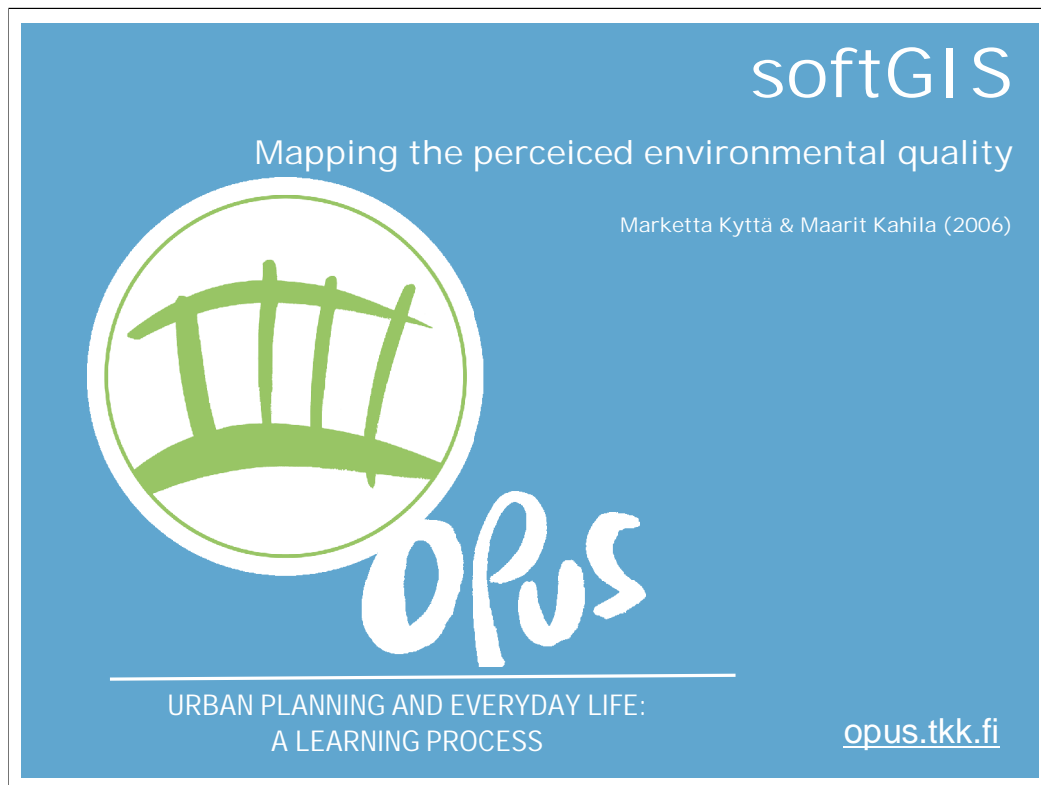
Marketta Kyttä
Centre for Urban and Regional Studies
Helsinki University of Technology
Finland



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I begin my presentation with this half mystical picture of myself reaching something that is hard to reach. As an environmental psychologist I try to reveal the experiences of inhabitants and search something that you may call 'tacit knowledge' and say that it is not a very easy task to do. I claim however that with appropriate methods, theories and approaches it is not impossible at all.

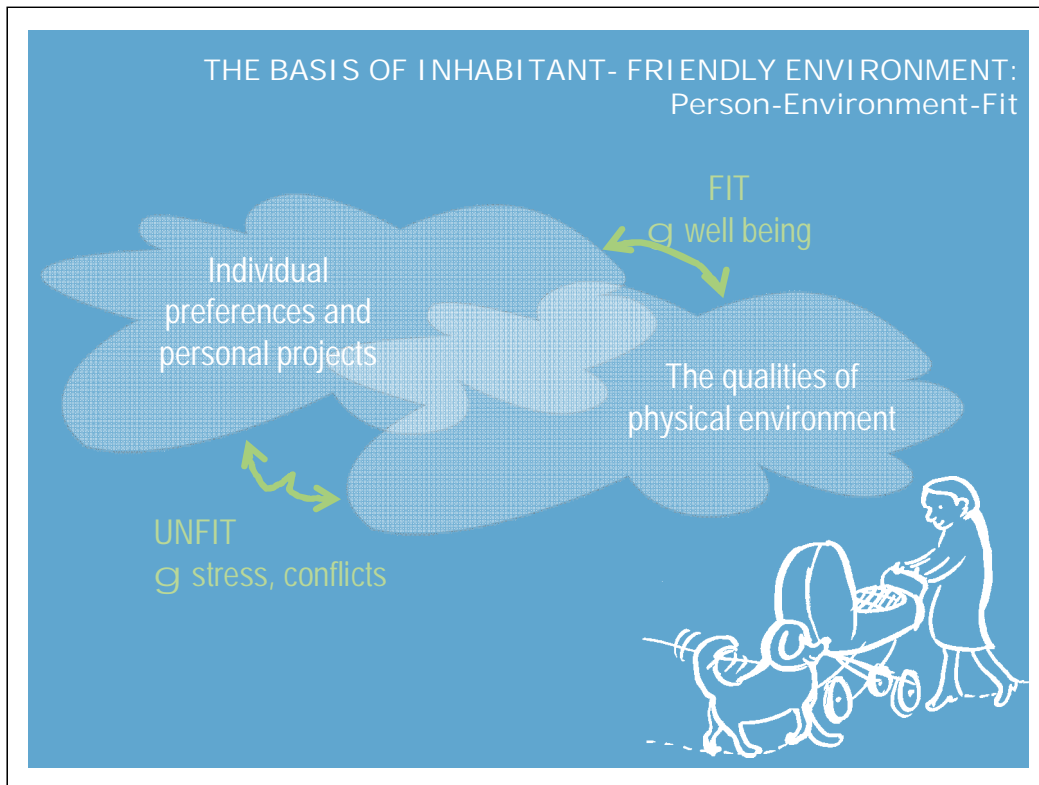
During this presentation I will reveal a deep dream of my own – which is that the 'soft' perspectives from everyday life would be more visible in planning and design practice and that they would be connected to the actual physical places and settings.



I will also introduce a new method that I call softGIS. The study that I am presenting I have just finished with my colleague, geographer Maarit Kahila. The study belongs to a larger research project called OPUS that is financed by the Finnish Funding Agency for Technology and Innovation and it is very much about developing new tools utilizing new technology for participative planning.

The perceived quality of the environment has been studied a lot both in Finland and in other countries. The studies have produced a considerable number of criteria with which to determine either the perceived environmental quality, or the general criteria for a human friendly environment. The criteria based studies share an *essential flaw*: the perceptions of the have not been attached to specific physical environments and actual planning policies. Paradoxically, also in environmental psychology the physical environment itself has often been forgotten.

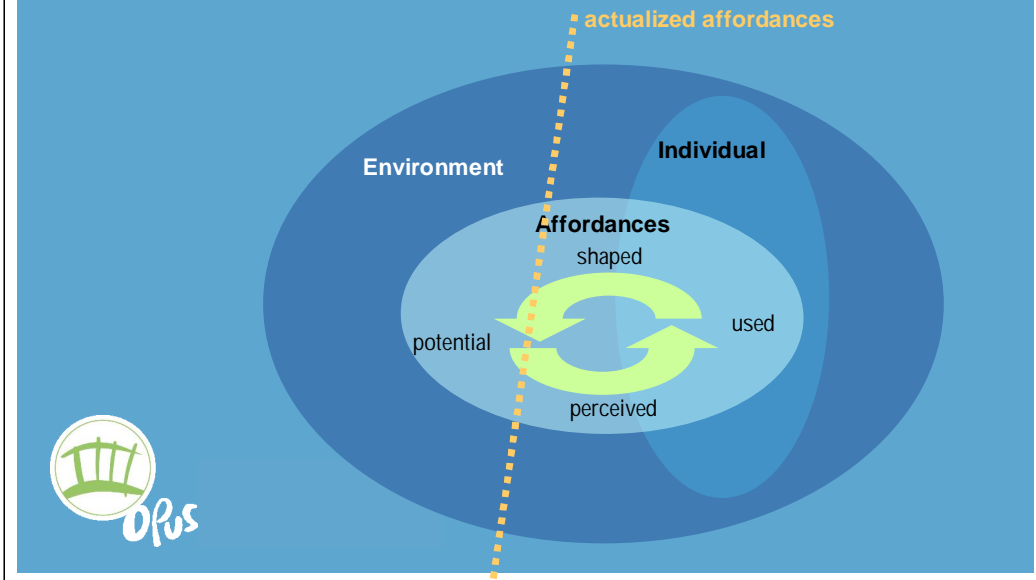
Our research and especially our softGIS-method aims to bring the physical environment back into Environmental Psychology.



The very basic idea of person-environment FIT was the basis of our study. According to Daniel Stokols and many other environmental psychologists, persons strive to maximize the fit between their personal preferences and personal projects (if you wish) ON THE ONE HAND and the qualities of physical environment ON THE OTHER HAND for example when they choose a place to settle down. Good fit produces wellbeing while stress and conflicts may appear if the fit is not so good.

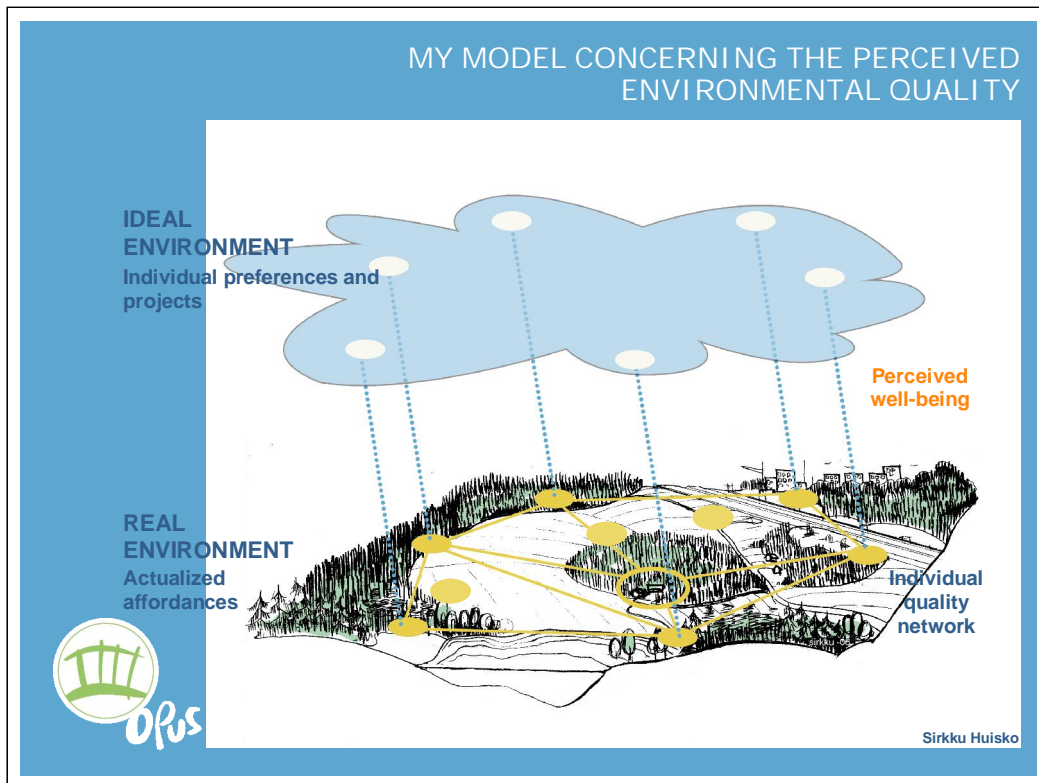
THEORETICAL BACKGROUND:

Gibson's ecological psychology -
a nondualistic understanding of persons-in-context



To operationalize the person-environment-fit theory and to truly look at the active role of the physical environment in this process, we needed a proper theory. In fact we needed a theory and concepts that do not create dualism between man and his environment. The notion of affordances that is used in Gibson's ecological perceptual psychology is a worthy candidate for such a concept.

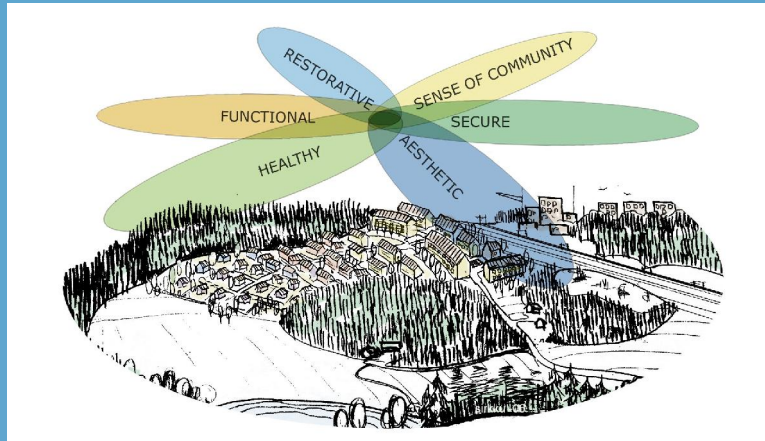
“Affordances” refer to the perceived opportunities and constraints concerning a person's actions in a given environment, but I think that this concept can be expanded to include also the emotional, social, and socio-cultural positive and negative affordances that an environment offers. The concept breaks the subject-object dichotomy: an affordance is not a characteristic of the environment, nor a characteristic of the individual, but rather it is something between them.



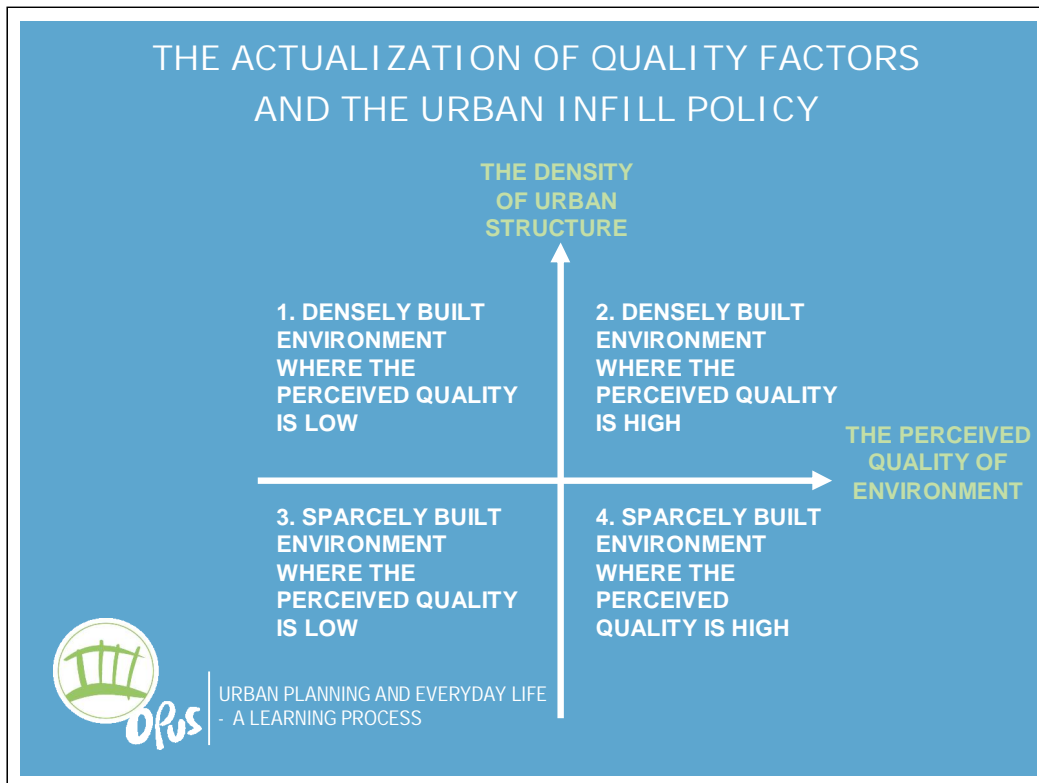
Here is my model concerning perceived environmental quality. It is based of the Fit between individual affordance preferences and the actualized affordances of the real environment. How far these to are define perceived environmental quality and perhaps also the experienced wellbeing of the individual.

The quality of an environment can thus be seen to consist of an “affordance network” that includes multiple places. Individuals can, to the best of their abilities, construct their own “affordance or quality network” according to their preferences, abilities, needs, mobility possibilities, and restrictions. The study of the availability of quality factors connects the perceived quality also with ecoefficiency. To what extent are the inhabitants able to go on foot or use public transportation to access the affordances that matter them personally?

QUALITY 'FLOWER': Some possible contents of quality factors

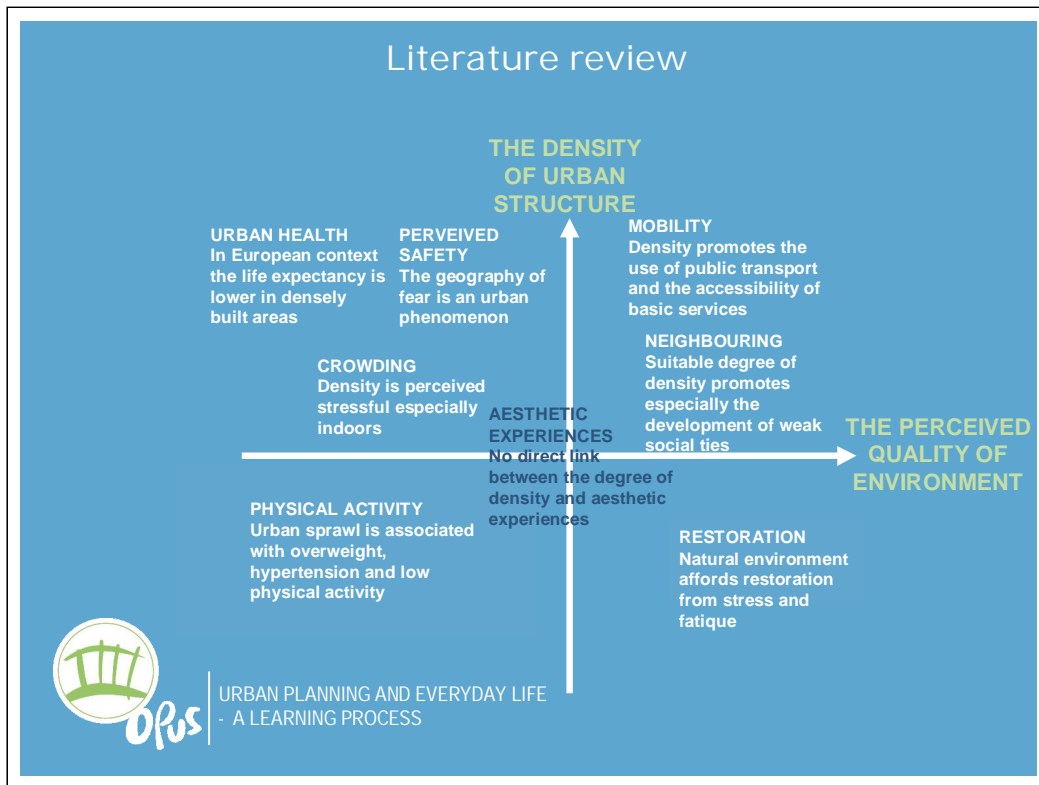


The contents of affordances or quality factors of individuals vary a lot. Among important quality factors can be for example actualization of this kind of criterias in specific settings. All these criterias have been studied vividly in Environmental Psychology but far too often without the localization to specific settings.



The political context of our study is an urban infill policy that is a widespread attempt to create ecologically more sustainable communities. Rarely, though, the densification policy has been studied closely tied with the perceived quality of the living environment. Are these two in contradiction? In principle, there are these four different possible situations and in our study we will test this model empirically.

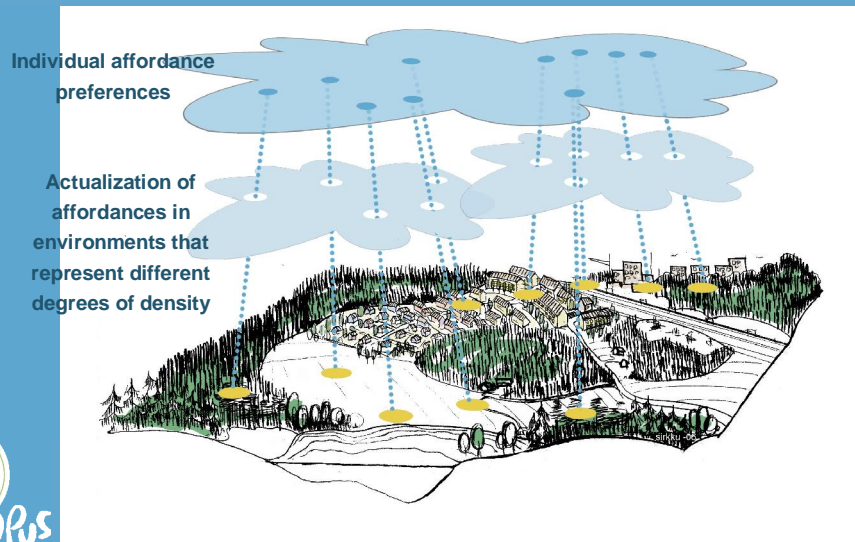
It is clear that in reality the situation is more complex. There can for example be various ways to compensate the density: high density in one location can make an open space nearby possible. Inhabitants may also compensate the density in their own lifestyle. In my country in Finland people have very often summer cottages that they may use as an escape from urban settings.



A literature review revealed that in environment-behavior studies density has been mainly proven to be a stress factor. As we heard from the key note by Roderick Lawrence, in European context also the health problems concentrate in densely built areas.

But if we look at some other widely studied themes, like neighbouring and mobility, the picture becomes more complex. In fact, it seems to be hard to tell, whether density as a whole produces high or low level of perceived density. It all comes back to the contents of the individually preferred affordances.

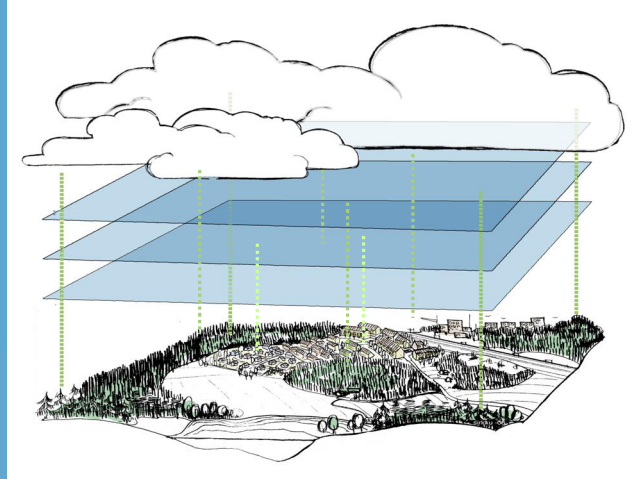
PERCEIVED DENSITY AS A MEDIATED PROCESS:
Affordances as Mediators



In our study we are looking at the affordances as mediative variables in the process of perceived density. Gary Evans has studied similarly the role of social relations in crowding. The idea is that what a densely built setting has to offer for the actualization of personally meaningful affordances define the perceived density. The same level of density may be a possibility for one person and a constraint for another.

The 'soft' GIS

Developing a GIS-based method
for studying the perceived environmental quality



a new layer into the Geographic Information System

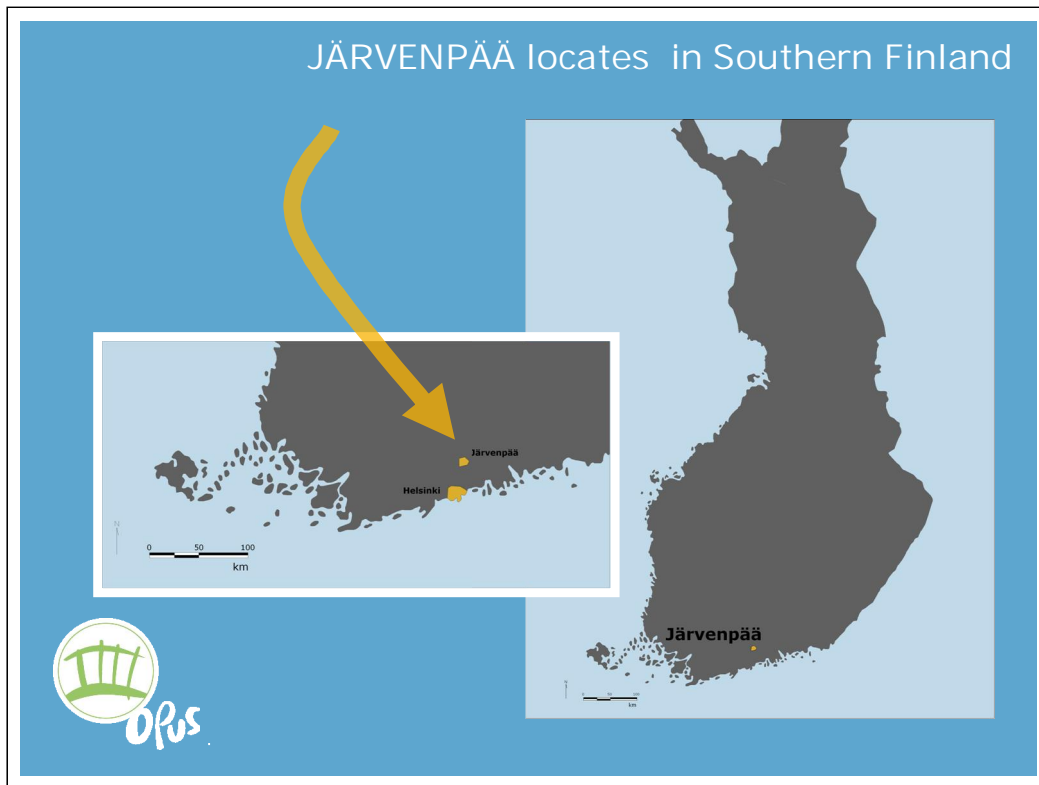
In our project I have been able to realize an old **dream** of mine about a softGIS method where the experiences of inhabitants would be studied locality based. The experiences would not only comprise a separate experiential world but would have close links to the physical environment.

The soft information from the users could become an essential part of Geographic information system, with which planners work all the time, they would comprise a special layer. By localizing the experiences of the users we can produce more useful information to the planning practice and vice versa.



This dream of mine has already come true:

In our ongoing OPUS-project we used a first version of internet-based SOFT-GIS method.

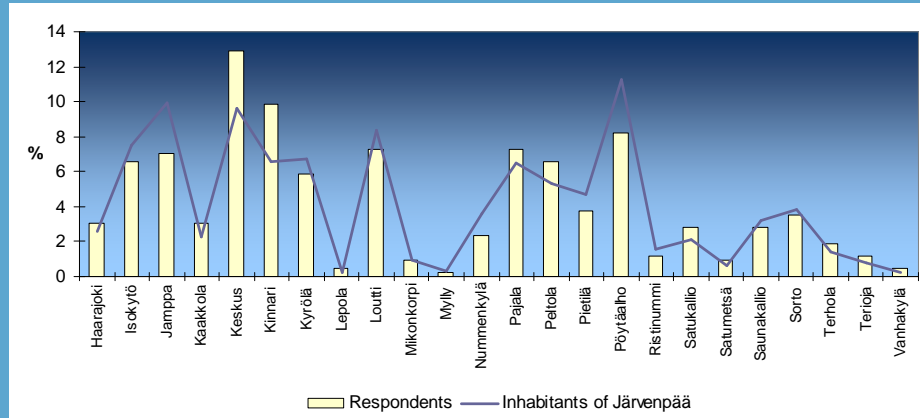


Our study is realized in Järvenpää that locates in Southern part of Finland close to Helsinki. Järvenpää is a growing town that attracts especially young families from Helsinki metropolitan area.



During 3 months, 427 inhabitants answered to our web questionnaire. 64 % were women, and 56 % had children. As a whole, in our sample the same kind of overrepresentation existed that in all other surveys. So, we did not get a special internet-sample.

Geographic representativeness



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- A LEARNING PROCESS

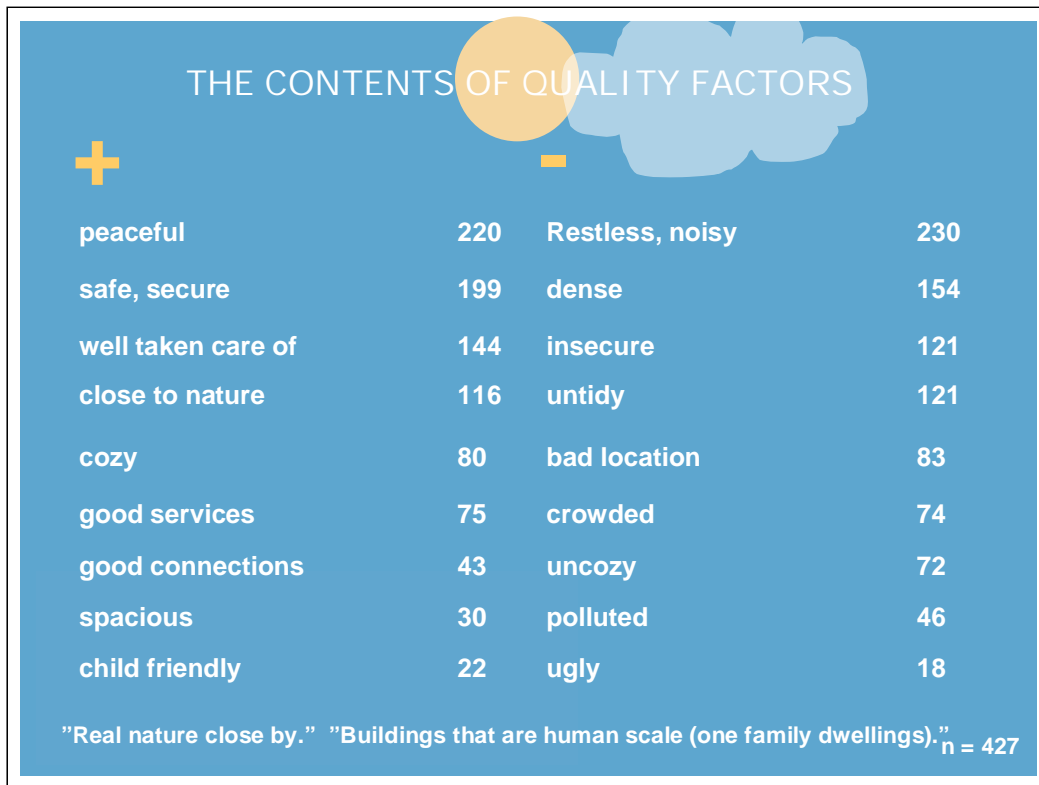
The respondents represented rather well all parts of the town.

Some results of softGIS –study



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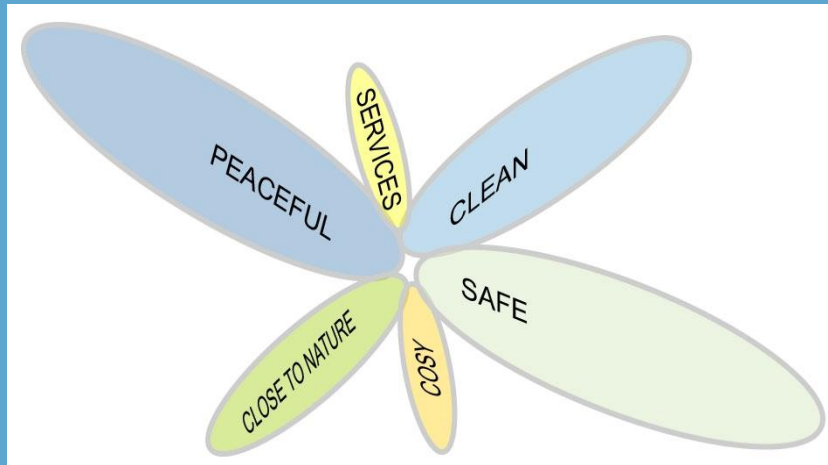
Now: let me present some results of the study.



The inhabitants were able to name any affordances that they personally value, whether it was an ability to ski in your backyard, or peacefulness or security. We had to content analyse the individual expressions, of course.

The contents of quality factors was not surprising at all. In fact, we tend to get the same list of meaningful preferences or quality factors whenever we study the perceptions of inhabitants in Finland. This time we did not stay in this level on analysis.

THE QUALITY 'FLOWER' OF JÄRVENPÄÄ

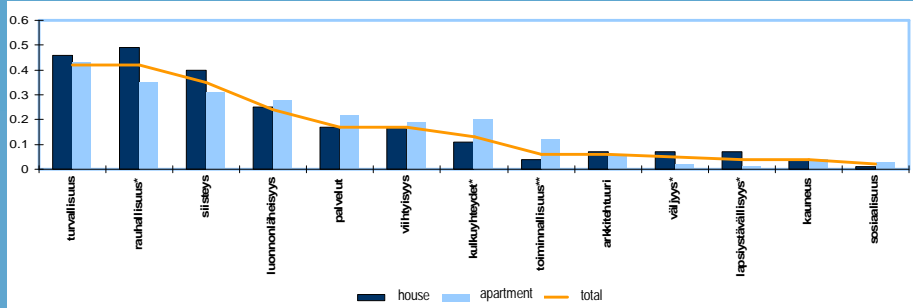
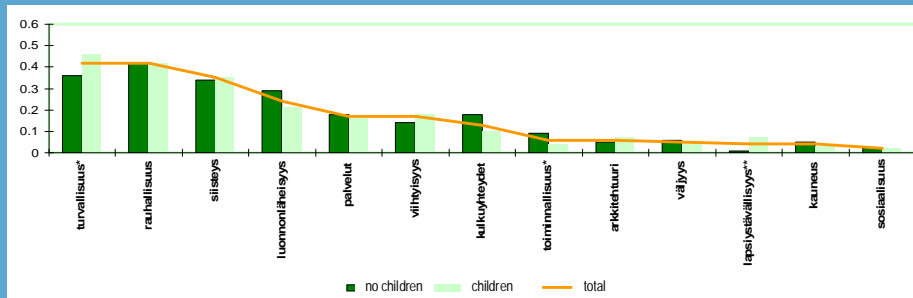


opus

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Here we have visualised the quality flower of the city of Järvenpää. Naturally, it would be very interesting to get a whole collection of quality flowers representing the experiences of inhabitants in various types of urban and rural settings.

DIFFERENCES BASED ON BACKGROUND VARIABLES

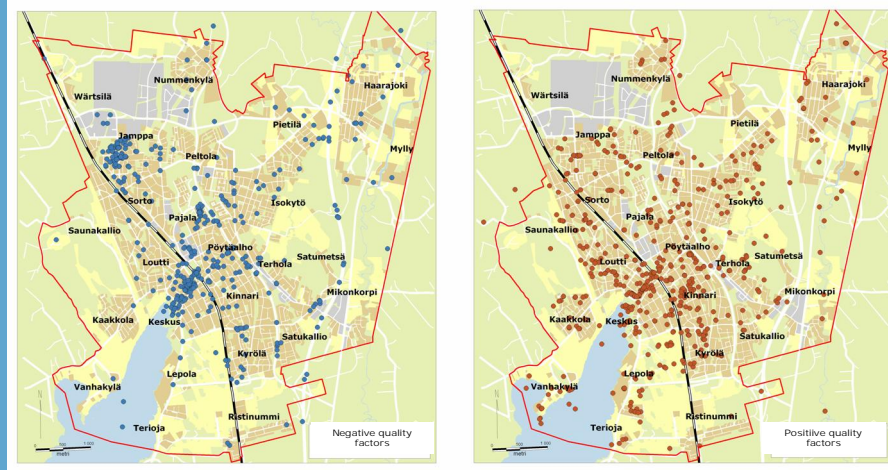


Different background variables produced surprisingly little variation in the contents of quality factors. Whether the family had children or not and the house type preceded a bit more variation.



JÄRVENPÄÄ

The location of quality factors



The clue in the softGIS study is of course in the localization of inhabitants' quality factors.

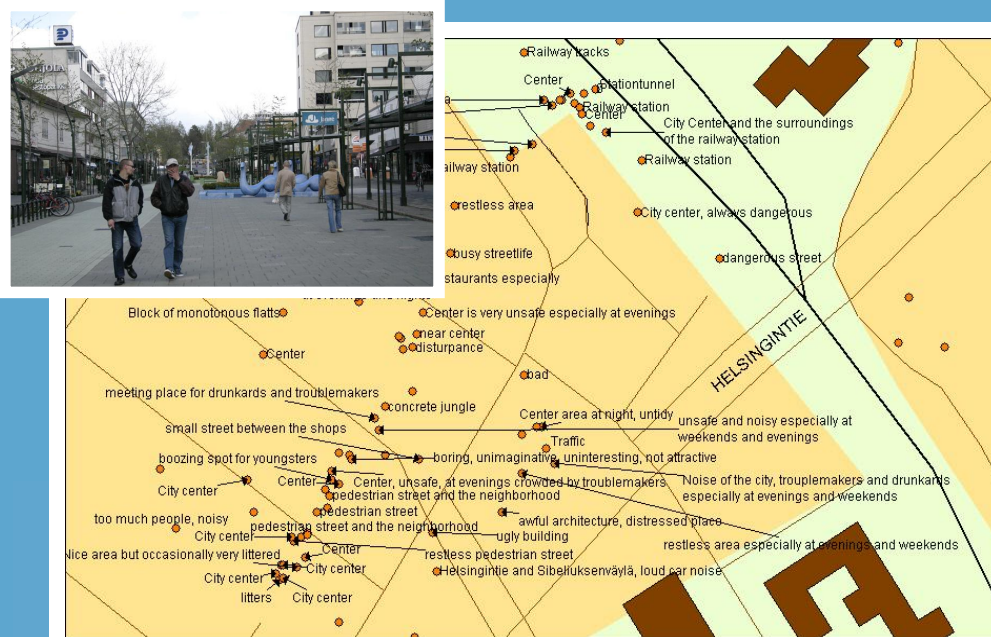
Here you can see how negative and positive factors localize across the town that we studied. You may notice that the negative factors cluster to certain places more than the positive ones.

Positive 'hot spot': The shore and the lake

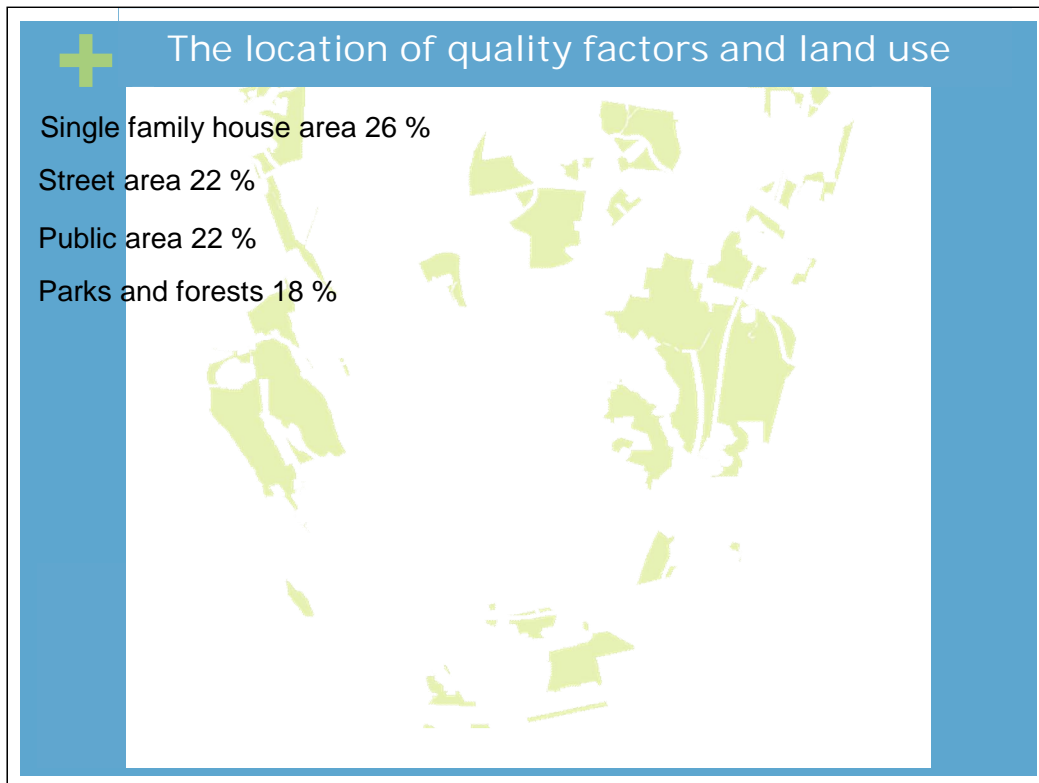


The clustered localisations, the hot spots, are naturally interesting. Here is an example of a positive hot spot; the shore of a lake in the centre of the town.

Negative 'hot spot': The centre of the town



And an example of a negative hot spot: the commercial centre of the town. I must say that most of the hot spots collected both negative and positive comments, like in this case too. Here, the negative comments were mostly about the restlessness of the area at nights and weekends.



We can look at the localization of quality factors according to the different land use patterns of the town. We learn that single family house areas collect most positive quality factors. If we would look similarly the negative quality factors, we would notice that street areas and public areas would dominate in the localizations.

Quality factors thematically:

Traffic network

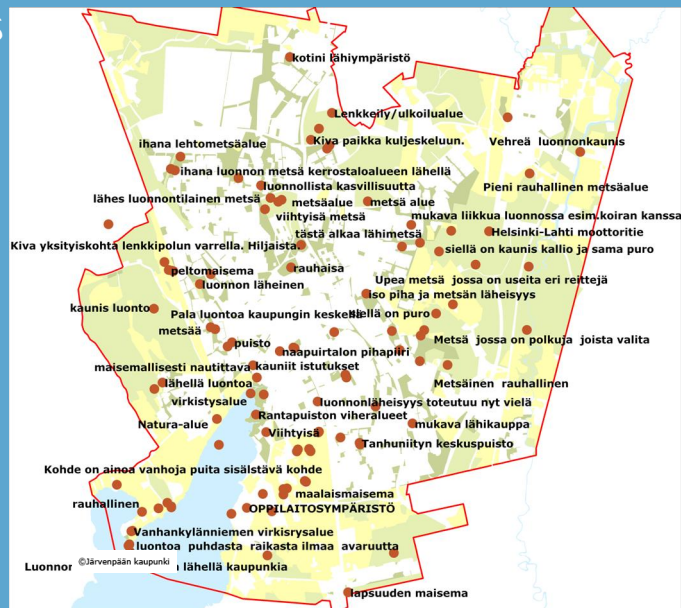


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We can also look at the localization of quality factors thematically: here, for example we have collected all the comments that concern traffic and show them together with the map of the traffic network of the town. This kind of map should interest the traffic planner.

Quality factors
thematically:

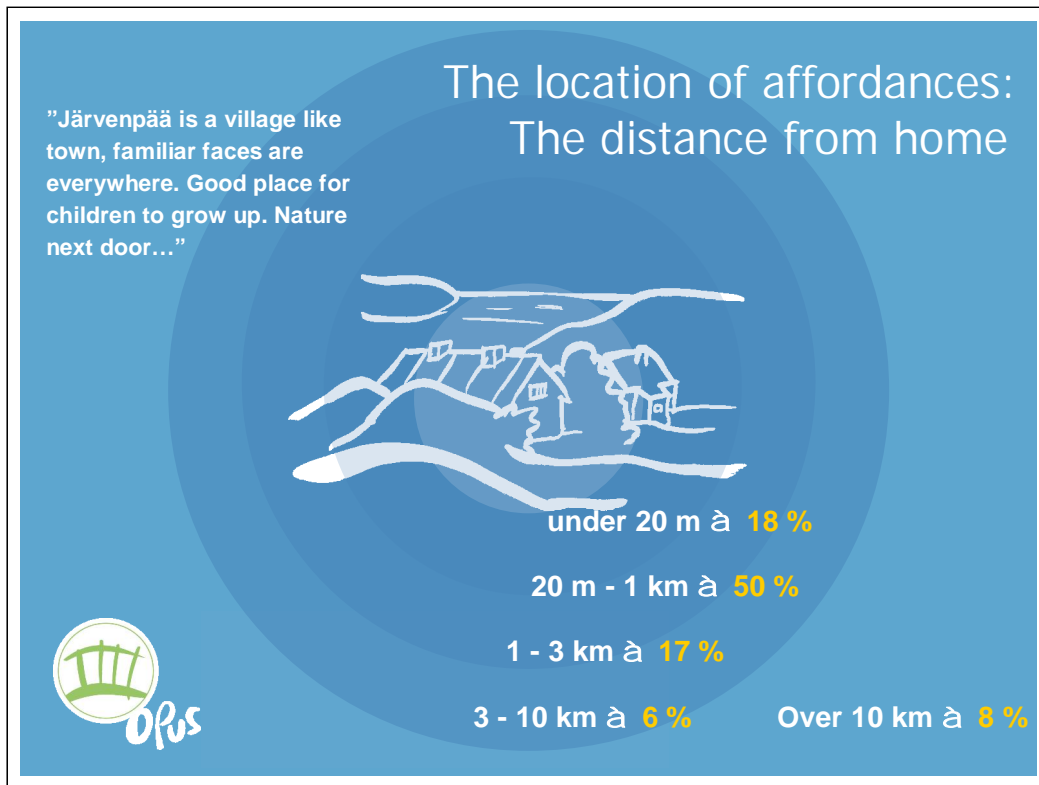
Green areas



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Similarly, we can look at the comments concerning natural environment together with the map of the green areas in the town.

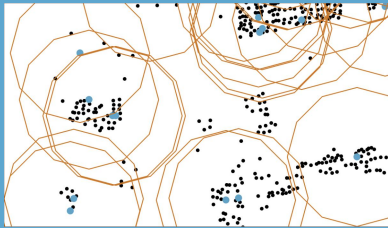
There are almost endless possibilities to analyze the localized experiential data together with the 'hard' information of Geographic information system.



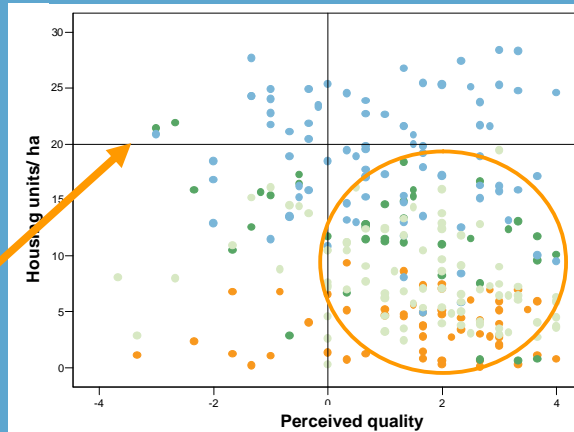
When we looked at the location of important affordances of all inhabitants, we found that 68 % of them located less than 1 km from home and 85 % within 3 km from home.

To my surprise – also for other user groups besides children the immediate environment seems to still be very important. Even in postmodern globalizing world we cannot see any alienation of immediate surroundings.

The perceived quality of environment and the density of urban structure



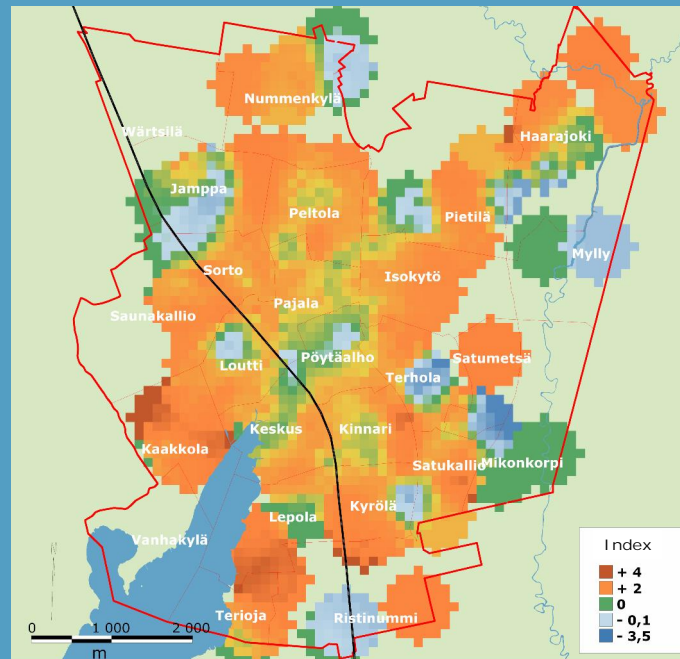
20 housing units/ha
• New urbanism
• recommendation for the usability of public transportation in USA



Because of the theme in our study, the urban infill policy, we wanted to look especially at the density together with the localizations of quality factors. To study this relationship we first created an individual measure of density. We circled each respondent's home with a buffer within which we calculated the degree of density.

When we looked at those measures together with an index for perceived quality that is a subtraction of positive and negative quality factors, we found that our findings tend to concentrate on low right end of the fourfold.

The perceived quality in different parts of Järvenpää



The quality index varied also geographically. In most parts of the town, positive evaluations dominated, but there were a few areas, mainly densely built high rise areas, where the quality index tended to be negative.

Perceived quality & well-being

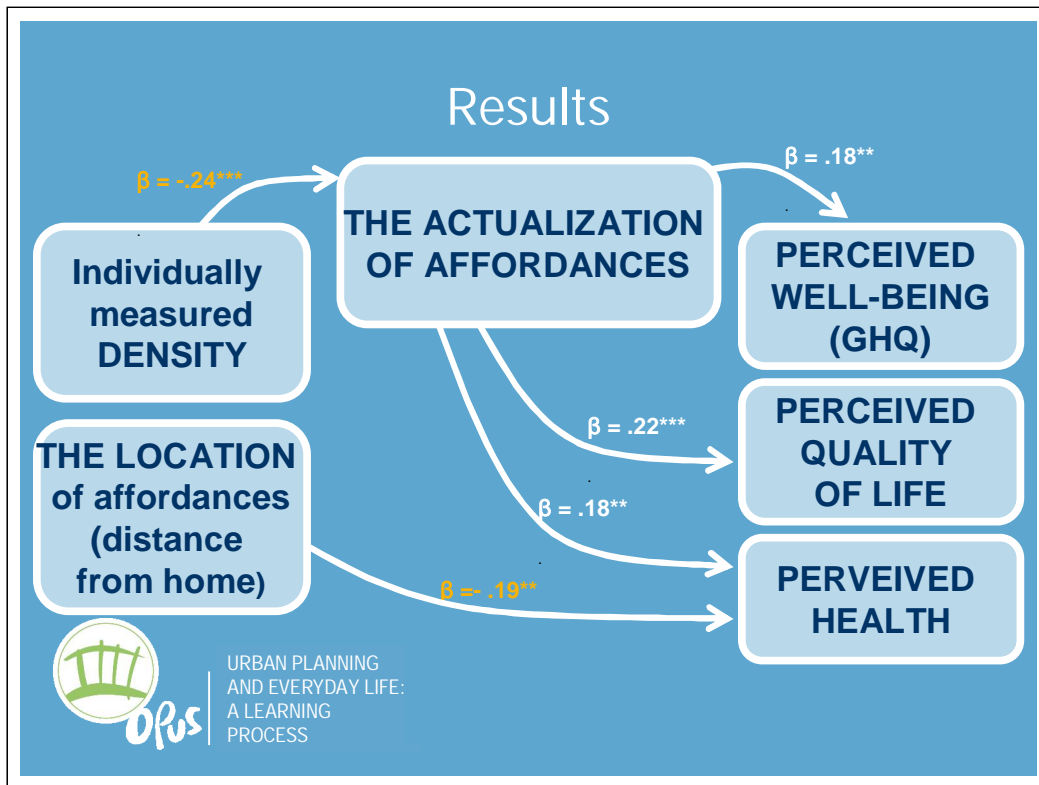
	The actualization of positive affordances	The personal importance of affordances	The perceived control
General well-being (GHQ –scale)	.177**	.129*	ns.
Perceived quality of life	.267**	.151*	.154*
Perceived health	.194**	.228**	ns.



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AND EVERYDAY LIFE:
A LEARNING
PROCESS

What about the perceived quality and well-being?

The actualisation of positive affordances correlated positively with both general well-being (measured with general health questionnaire) perceived quality of life and perceived health. It was also interesting that the perceived control of the existence of affordances correlated positively with perceived quality of life.



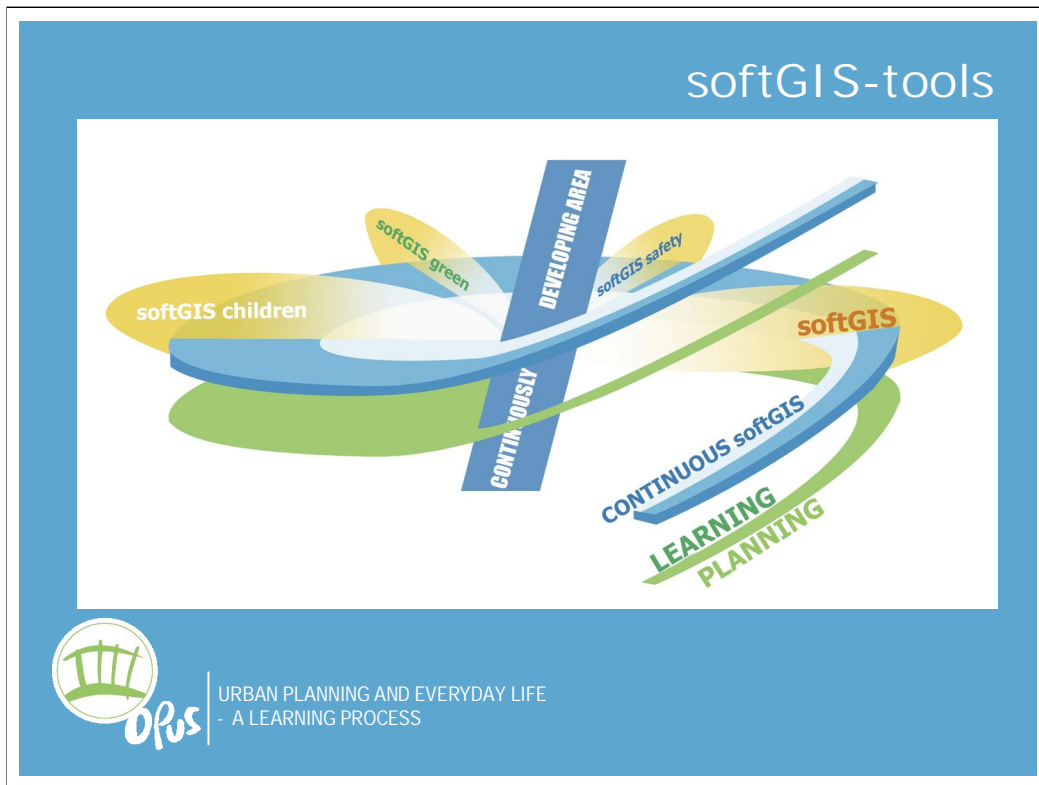
Finally: a series of regression analysis revealed that the less dense the neighbourhood is the better is the actualization of the affordances. And the better the personally meaningful affordances actualize, the better is the perceived well-being, quality of life and health.

Interestingly: The location of affordances had an association with perceived health. The closer to home the affordances located, the better was the perceived health.



These findings suggest, that if we go back to the formula that I showed in the beginning of my presentation.

It seems that a true challenge for the urban infill policy is the perceived quality of the environment. We should be able to design the kind of densely built urban environment that does not threaten the essential, meaningful affordances of the inhabitants.

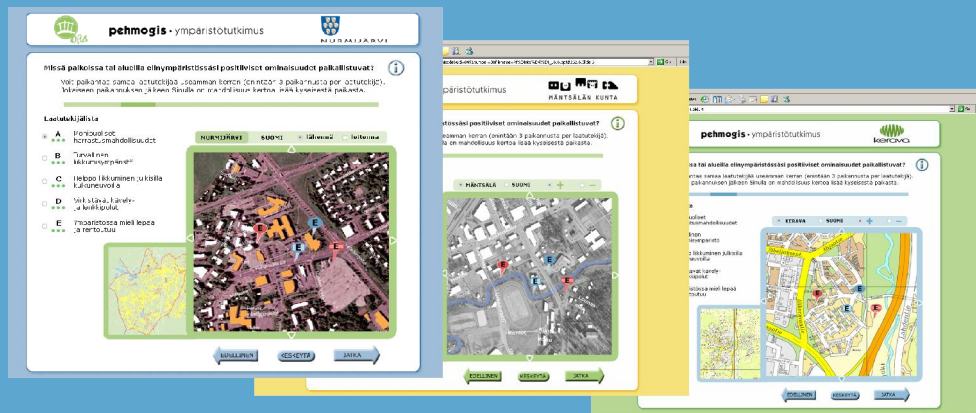


Still a few words about the softGIS-method:

I dream that in the future there could be a whole collection of softGIS methods. There could be a continuous stream of soft knowledge of the users if the softGIS method would be open continuously.

There could also be special theme soft GISs. We could want to localize for example the routes that children use when going to school, the restorative places of the elderly or the places of perceived danger.

New softGIS-tools



City of Nurmijärvi

City of Mäntsälä

City of Kerava



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Within few weeks we will open new softGIS studies in three additional Finnish towns. We have developed the method further, which is of course a long term process.

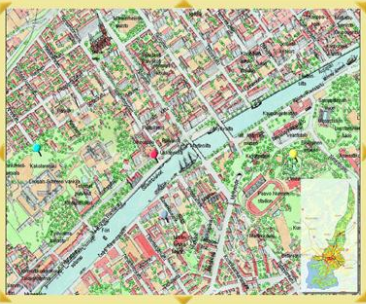
softGIS children

pehmogis
ympäristösuunnitus

Ohjeita ohjeita ohjeita ohjeita ohjeita ohjeita

- Roikkuu, heilua
- Olla eläinten kanssa
- Leikkiä vesileikkejä
- Pyöräillä
- Juosta
- Hiihtää
- Laskea mäkeä
- Kivettä, hypätä
- Katsella maisemia
- Rakennella
- Heitellä palloa
- Syödä
- Seikkailta
- Oleilla
- Oma, mikä?

Leikkiä kirkonrottaa



pehmogis
ympäristösuunnitus

Ohjeita ohjeita ohjeita ohjeita ohjeita ohjeita

- Roikkuu, heilua
- Olla eläinten kanssa
- Leikkiä vesileikkejä
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- Heitellä palloa
- Syödä
- Seikkailta
- Oleilla
- Oma, mikä?

Kenen kanssa?


yksin kavereiden kanssa aikuisten seurassa

Miten rauhallista paikassa on?

Miten tärkeä tämä paikka on sinulle?

Kerro oma kokemuksesi tästä paikasta:

Täällä on kirja



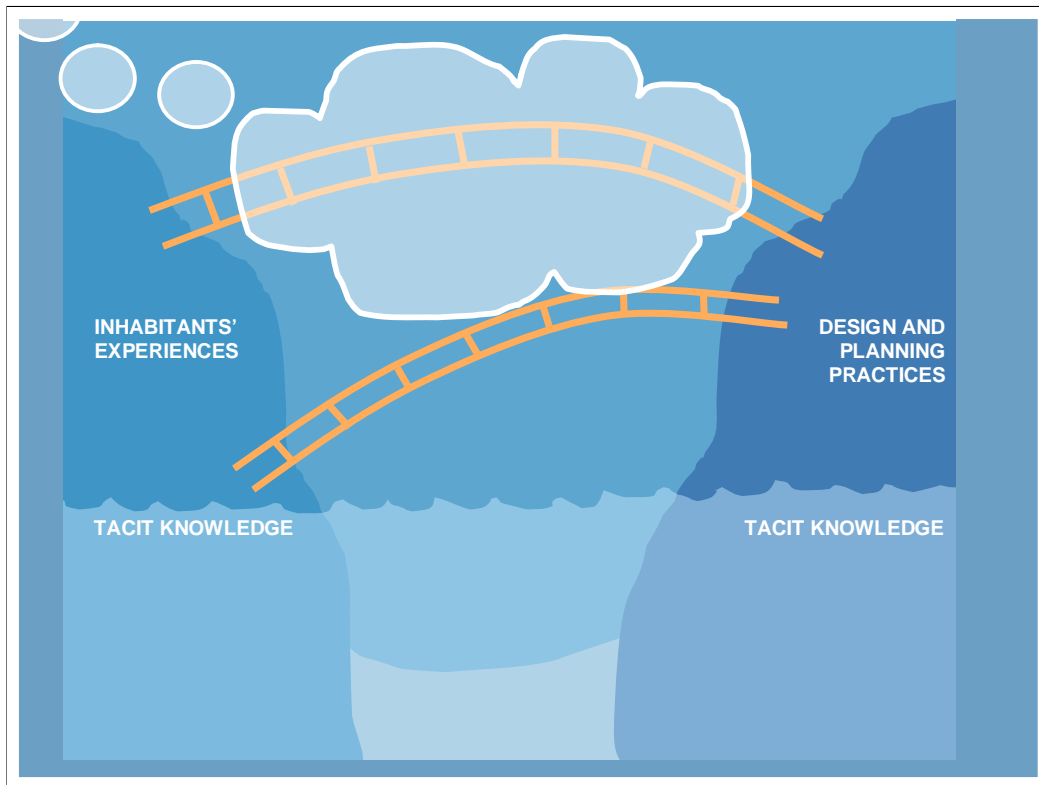
Turku – a healthy city

There will soon also be a special softGIS tool for children and young people in the city of Turku. This project is a part of Turku's healthy city project.



This softGIS will be easy to use and fun too. After collecting the research data, we will also open a tool to look at the data interactively. You may for example want to see what places for physical activity 10-year-old boys have localized.

In addition to these new softGISs we are developing at the moment a special softGIS method for studying the perceived safety. And as you can imagine, my ambitious plans do not end here....



FINALLY:

As you have certainly understood, my deep aim is to try to built a bridge between inhabitants and the design and planning practice.

THIS IS MY TRUE DREAM.

With the help or diverse methods including the techniques utilizing new technology this bridge building can succeed.

I am sure that you in this room today also work in various ways to become a bridge builder between different actors in the complex field of urban development. Perhaps a few of you also share the same dream with me.