ORIGINAL PAPER

Handling user needs: methods for knowledge creation in Swedish transport planning

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Abstract

Background and aim Transport planning faces new demands for a dialogue with users. Transport planners no longer just build roads; nowadays they also must listen to users, whose wishes are meant to have an impact on the design and maintenance of the road transport system. Yet how can we know what users really want? This article sets out to analyze the methods with which transport planners gather information about users and their needs; to do so, it uses a case-study of how transport planners at the National Swedish Road Authority handle these questions on a day-to-day basis.

Result and discussion The results show that the planners' practices can be analytically understood as something that produces knowledge, representativity, and the identities and needs of the users. The planners base their analyses of user need largely on personal experience. The descriptive, interpretative, and evaluating elements in their knowledge production tend to be hidden in central policy documents and the workings of operational planning systems. If the goals with respect to user influence are to be attained, transport planning must be pursued with a greater understanding of how it conceives of its users as specific categories with particular needs and identities.

Keywords Transport planning · Knowledge creation · Implicit method · Explicit method · User · Customer

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Abbreviations

CSI	Customer Satisfaction Index
EIA	Environmental Impact Assessment
NPM	New Public Management
SRA	Swedish Road Administration

1 Introduction

There is a clear trend for government authorities to be expected to empower the public by ensuring at least a degree of user influence in the various planning processes. The growing body of work on deliberative policy-making emphasizes the changing role of planners towards a deliberative practitioner [1]. There are also new demands for dialogue, user participation, and stakeholder involvement in transport planning. Transport planners no longer just build roads. These days they are also expected to listen to transport system users, and the user wishes are meant to have an impact on the design and maintenance of the road transport system.

Not least in the Scandinavian countries, the various levels of public road administration have introduced procedures that afford the user some influence over the planning and shaping of the road transport system [2]. For example, Scandinavian road administrations have developed forms of organization and working methods in which users are regarded as market "customers" [3] and transport planners have the task of creating knowledge about how users want the road transport system to be designed. This information then forms the basis for the goals set for the operations as whole and for how the road transport system is designed. This change, noted at all the Scandinavian road administrations, is part of a wider international reform among government authorities whereby market thinking is applied to the public service sector in order to increase user influence. The

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concept of New Public Management (NPM) encompasses some of these reforms.[1] One of the leading principles of NPM is that "customers" are expected to take part by deciding what services should be provided and how that is to be achieved [6]. The "customers" range of choices when it comes to transport systems is limited, however, and they can rarely take part in actual decisions. Instead, their wishes are collated and interpreted by transport planners. It is therefore important to study the methods that transport planners use to produce knowledge about the users, because it is with them that much of the organizational conceptualization and information about the users are shaped. To the best of our knowledge there are few such studies.

The aim of this article is to analyze the methods by which transport planners create knowledge of users—in this case, road users—and their needs; its empirical basis is a study of how transport planners at the Swedish Road Administration (SRA) create knowledge about road users.[2] By doing so, we can not only better understand the methods used in a context where road users are viewed as "customers", but also reflect on how those methods shape the organizational conceptions of such users. Thus despite the national reach of the case study, it can still be of international relevance.

We will present the literature on the planners' methods and basic data, and then describe the methods and sources used in the present study. At the national level, the SRA created a number of institutionalized methods and tools that the planners can use to produce knowledge about users. We present these institutionalized methods and then describe how the planners go about their work, the methods they use, and the knowledge gaps they have identified that existing methods cannot fill. The article concludes with a discussion of how best to tackle an analysis of the knowledge creation process and the role played by the specific methods used, touching on possible avenues of future research.

2 Previous research

There is an extensive literature on public participation in planning in general [7–9] and to a lesser extent on public participation in the planning of transport infrastructure

[11–16]. This literature describes various methods and mechanisms for public participation in planning, and the general conclusion is that the role of the public must be strengthened [12, 14]. However, with the exception of the likes of Tuominen et al. [10], previous research has paid little attention to the manner in which official bodies operate and the methods they use to produce information about users. There is a difference in this context between what can be called a "citizen–democracy" perspective and the "customer–market" perspective analyzed in this study, which stems from the ways official bodies are expected to seek to identify and address the needs of their users. The habit of calling road users "customers", as is the case in the working methods developed in line with NPM by the various Scandinavian road administrations, is one example of the latter perspective. The chosen perspective presumably influences the choice of actual method used to create knowledge about the needs of the "citizens" or "customers".

While there are few studies that have charted planning authorities' chosen methods in a context where users are viewed as "customers", there are several of methods used to gather information on users in other market-oriented infrastructural and technical contexts than the transport sector. These studies have grouped the methods into so-called explicit and implicit methods [17–19]. Examples of explicit methods are market surveys, user segmentation, usability tests, customer satisfaction indices, and image measurements, all of which produce knowledge that is general, formalized, and easy to express in figures and words. Implicit methods, on the other hand, build on personal experiences and are not as easily categorized, because they rely on assertions about users and user needs. It is possible to employ experts with prior experience of user needs and problem, but among the implicit methods we also find the so-called "I method" [17], where designers place themselves into the situation of the user, and use their personal opinions of other people and their own experiences as users as the basis for their decisions. According to Akrich [17], the "I method" implies a "reliance on personal experience, whereby the designer replaces his professional hat by that of the layman".

The I method is claimed to be frequently used and of great importance for the design of different products and technical systems. According to Oudshoorn [20], it is also often unconsciously used. This is important, for a variety of methods are used to divide users into groups according to characteristics, behavior, and needs. A considerable number of existing studies demonstrate how users are "configured", meaning how technical products are designed according to existing conceptions about the individuals or groups that use them [17, 21]. Woolgar [22], for example, shows how design processes reflect a set of assumptions about certain types of user and behavior. Conceptions of users, needs, and

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[1] For example, cutting costs and improving public sector efficiency were important goals in the British reforms of the public sector in the 1980s [4]; see Modell et al. [5] for an account of NPM in Sweden.

[2] As of 2010, Vägverket, or the Swedish Road Administration (SRA), has been part of Trafikverket, the Swedish Transport Administration, which is now responsible for all forms of traffic: road, railway, sea, and air. We have retained the term SRA in the present article, because this was what the authority was called when we conducted our investigation.

behavior are built into the technology and make certain forms of behavior more possible than others. Woolgar thus argues that not only is the users' behavior defined and prescribed, but also the design of the technology amounts to an attempt to construct their identities. Designers define users with qualities and a "large part of the work of innovators is that of inscribing this vision of … the world in the technical content of the new object", as Akrich [23] writes. The users should not be regarded as passive actors, however, as number of existing studies show how users affect the nature of technologies [24]. Technical design on the whole appears as a socially contested zone where designers, users, interest and consumer groups, politicians, and enterprises negotiate and—sometimes as the fruit of conflict—produce the form and meaning of the technology and the users' use [24].

Of course, there is a great risk that personal experiences and opinions that the I method employs to guide the design of technologies in fact in no way reflects the true wishes, problems and needs of the users. Designers belong to professional traditions with their own specific ways of representing use and of perceiving and acting [19]. Existing studies have shown how on occasion the design of technologies is clearly affected by conceptions of race, gender, age, and the like [20, 25]. One example of this is the way in which the attempt to devise information and communication technologies for users of varying abilities and interests has resulted in designs aimed primarily at men, because of the male designers' use of the I method [20]. The trend towards greater user influence and participation in planning might leave the road transport system better adapted to what users want, but at worst the design may be determined by non-problematized ideas about individuals and groups which they themselves do not recognize as true.

From the literature on technological contexts in general we have identified the three problem areas in transport planning that lack the requisite in-depth analysis; a deficiency we will attempt to correct here. The literature indicates that implicit methods are crucial for knowledge creation about users, and to that end the first area concerns the actual methods used by the transport planners. Here the question is what the *explicit or implicit methods used by the SRA planners* might be. The second problem area is how the knowledge process works in transport planning. The literature shows that implicit methods can be problematic, with descriptions of their unconscious use in the design of a variety of products and technical systems, all while they are used to construct user identities. Here the question is what *the workings of the knowledge process at the SRA might be, and what role explicit and implicit methods play in the process?* It is by addressing these problem areas and questions that we will analyze how the transport planners at the SRA work.

3 Method and sources

In order better to understand what actually happens when knowledge about users is created in transport planning there is a need for empirically based studies. A study of the SRA can provide this empirical basis and the necessary contextualization. Furthermore, the SRA is a government authority with the stated ambition of providing users with influence over planning, courses of action, and road design (the organization and work of the SRA are more fully described below). If nothing else, the SRA is representative of road authorities with ambitious goals when it comes to managing their work according to the wishes of their "customers". (We will use the term "users" here in order to differentiate from the SRA's use of "customer".) Our study will consider how knowledge about the Swedish transport system's users is created, but it is important to note that we have *not* studied how planner-created knowledge about users influences the actual design of the traffic system.

At first glance, such a study of the SRA does not lend itself to empirical generalizations: empirical circumstances such as the ideas and notions held by individual informants cannot be generalized. The ability to generalize instead lies in the fact that the results can be subject to analytical generalizations, which "depend upon an particular understanding—or theory—of what is being studied" [26]. More specifically, it means we can use the literature to identify a theoretical framework that we then use to interpret the ways knowledge is created at the SRA. It is the analytical conclusions, derived from an understanding that the theory offers, which are applicable to other government bodies equivalent to the SRA.

The present study is based on two sorts of source material: written sources and interviews. The written sources consist of reports and internal policy and management documents from the SRA. Several of the documents only exist in SRA's intranet, and were thus supplied to us by our funding body's research project leader. Interviews were used because planners' stories can reveal patterns in their work that are impossible to trace in reports or planning documents. We thus conducted fifteen semi-structured interviews [27] and focused on the interviewees' stories [28]. The interviews took from 30 to 90 min. The interviewees—twelve men and three women—were selected using the planners' roles we had identified from the official documents. The interviewees were drawn from three of the SRA's seven regions, together with the project leader from funding body's research section. As promised, the interview data were anonymized.

The interviewees had a variety of roles in relation to road users. These included being responsible for the maintenance of the region's existing roads; being responsible for the planning and building of new roads in the region after public
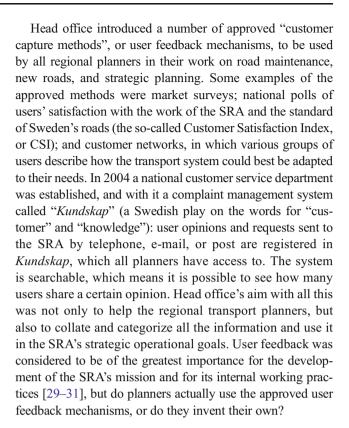
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consultation; or being responsible for strategic planning which include the responsibility to disseminate users' wishes across the organization, and being responsible for internal procurement within the SRA: an overview of all the interviewees' roles is given in Table 1. An interview guide with a list of questions organized by subject was prepared in advance to ensure that the same information was gathered from all the interviewees; the interviewer was free to ask follow-up questions in a conversational style. The areas to be discussed were the respondents' background; their image of road users; the methods they used in their daily work; and any knowledge gaps they knew of that existing methods could not fill. The interviews were recorded and transcribed. Using the transcriptions, we identified the recurring themes that one or several categories of informant mentioned in the course of the interviews. These themes were then used to structure the empirical analysis. Our aim was to chart the fine distinctions between the various roles at the SRA.

4 The SRA and user needs

Until 2010, the SRA was the central authority with overall responsibility for the Swedish road network system. Its responsibilities included the exercise of public authority over the road transport sector and the planning, building, operation, and maintenance of the national road network. The authority was organized into a head office and seven regional offices (a structure that has largely survived its subsumption into the Swedish Transport Administration in 2010). In 2003 the SRA introduced "customer-oriented" working processes—its work management system was adapted, the better to guide the SRA in the direction of what they termed greater "customer benefit". New strategic posts were created with responsible for disseminating users' wishes across the organization and to make sure that they were taken into account at the planning stage, and strategic and measurable goals for "customer orientation" were defined.

Table 1 The interviewees' responsibilities

SRA region	Responsible for	Number of interviewees
Region 1	Road maintenance	1
Region 1	Planning new roads	1
Region 1	Strategic planning	3
Region 2	Road maintenance	1
Region 2	Planning new roads	1
Region 2	Strategic planning	3
Region 3	Road maintenance	1
Region 3	Planning new roads	1
Region 3	Strategic planning	3

Head office introduced a number of approved "customer capture methods", or user feedback mechanisms, to be used by all regional planners in their work on road maintenance, new roads, and strategic planning. Some examples of the approved methods were market surveys; national polls of users' satisfaction with the work of the SRA and the standard of Sweden's roads (the so-called Customer Satisfaction Index, or CSI); and customer networks, in which various groups of users describe how the transport system could best be adapted to their needs. In 2004 a national customer service department was established, and with it a complaint management system called "Kundskap" (a Swedish play on the words for "customer" and "knowledge"): user opinions and requests sent to the SRA by telephone, e-mail, or post are registered in Kundskap, which all planners have access to. The system is searchable, which means it is possible to see how many users share a certain opinion. Head office's aim with all this was not only to help the regional transport planners, but also to collate and categorize all the information and use it in the SRA's strategic operational goals. User feedback was considered to be of the greatest importance for the development of the SRA's mission and for its internal working practices [29–31], but do planners actually use the approved user feedback mechanisms, or do they invent their own?

5 Results

5.1 Knowledge and methods on a daily basis

When we asked the planners how they set about getting information about what users want, they described how they combine different methods: results from CSI are combined with focus group interviews, officially registered correspondence, the customer database Kundskap, discussions with user organizations, conversations with the public, and so on. One strategic planner said that whenever he needed new information he turned to the consultation groups—hauler consultation groups, and others—he had helped to set up. These contacts are also used to operationalize and interpret results from general surveys such as CSI and image measurements. Several planners with different responsibilities describe how they use CSI and image measurements as the basis for discussions with users, and how they verify the results using local contacts and consultation groups. This means that they use personal relationships in order to interpret the results of the specific methods approved by head office, and so adapt them to local circumstances.

This example seems to be indicative of how different methods are combined, but at the same time it illustrates the methods and materials that planners find most useful in their practical work. Direct conversations and meetings with users are more important than the explicit methods provided

by head office. This is true of all categories of planner, but especially of those who work with actual roads—the ones who plan and supervise the construction of new roads, or who are responsible for road maintenance. One planner who had a strategic responsibility for collating user views and suggestions said that he was not interested in using *Kundskap*. The degree of interest in using the approved methods was determined by the planners' opinions as to their usefulness: the perceived difficulties were how to concretize and break down the results in a way that spoke to actual local circumstances and planning situations. The methods found to be most useful by those responsible for "customer" relations are those that provide new information on actual, "customer-relevant" questions.

> National surveys … that is, the Customer Satisfaction Indices … are a rather coarse measure… In general terms, we have a pretty good idea of what people want, generally speaking. We don't need more measures there, I'd say, but if we are to understand [the users'] needs then we have to approach the individuals; I mean the road where *N* lives. I mean, it's *N*'s needs we have to grasp.

Planners have difficulties in breaking down data collected using explicit methods into possible courses of action and applying them to the actual circumstances to be planned for. Another strategic planner stated that, while it is a tool that registers actual questions, *Kundskap* nevertheless could not provide the kind of information about actual matters that she needs. In this case the problem is how to decide the representativity of the opinions registered in *Kundskap*. Our view is that the planners' issues with *Kundskap* stem from such basic problems. The information provided by the explicit methods is not relevant to the routines and planning situations they encounter in their work. They want answers to different questions. The difficulty of establishing the representativity of the information is one of several examples of how the planners cannot use the approved explicit methods to solve the key problems they wrestle with in their daily work. As a planner responsible for road maintenance put it:

> The ones who get in touch, are they always representative of the whole? If I say that it's 2% that get in touch, do they represent everyone? A single, unconnected case has to be seen in a wider context. That bus-stop three people have rung about, is it the one that's used most, or is there another bus-stop that's used twice as much, but no one's rung about it?

5.2 Problems with representativity and user needs

As one strategic planner put it, they are "swamped all the time" in requests. Another planner responsible for road maintenance asked, "Whom should we listen to? The loud ones? How do you know if their opinions are representative of the quiet ones?" To the question of how planners handle such situations in practice, they answered that they relied on their local contacts with users, local authorities, and civil servants. In the interviews, no planner claimed that they needed more information on users at a general level. Instead they wanted better information and systematics for what the strategic planner above referred to as "*N*'s needs"—concrete, "customer-relevant" needs. Special interest organizations, municipalities, and county boards were used as users' spokespersons in order to organize requests, but when a new road reaches the planning stage, with its legal requirement for user consultation, responsible planners are of the opinion that they lack the methods to ensure representativity.

All planners had trouble in ensuring representativity, but there were differences when it came to how they interpreted what users actually want. Planners with strategic responsibility distinguish between user wishes and user needs, and do not necessarily see it as their role to identify what users want but to interpret what they actually need—a top-down approach. This becomes important when deciding whether, for example, to build a new road or not as one strategic planner described it.

> The needs of the customers? What the customers need is not the same as what the customers ask for. What the customers want is what we generally have to listen to. They hardly ever express a need, for instance they need to move from A to B; how could they do that? Instead they say that they want a motorway from A to B.

The strategic planners do not have a method to identify and differentiate between "needs" and wishes, but they nevertheless try to identify what the users actually need. As one strategic planner said, the working procedure and methods they use to find out user "needs" and translate them into investment objects are "fuzzy". The planner felt that it was a gray area that lacked the structure and methods for the identification of user "needs" that they could act upon. Another strategic planner stated that he did not use any systematic method when dealing with such situations.

> We have no systematic procedure [to identify needs] but you have to try to work it out for yourself using common sense and local know-how. … But we lack a method to use when customers ask for one thing but they really need something else. No, we don't have anything like a crystal-clear analysis.

The planners' difficulties in determining representativity or the difference between wishes and "needs" are two examples of the problems they face where they lack the explicit methods to solve them. Instead they use implicit methods. Strategic planners try to construe what users

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actually need, and this carries the risk that they might decide that users need to be something they do not want. At the same time, the strategic planners find it difficult to account for how they decide what is a need and what is a wish, something that makes it even more important to analyze how the knowledge process works and which methods are used in long-term or strategic planning.

5.3 Problems with the I method

A number of strategic planners describe their difficulties in identifying user "needs", for instance in connection with consultation groups they had set up. One strategic planner was of the opinion that "needs" were overly influenced by "those go on at us and keep calling and badgering", and were not an expression of "general needs". When explicit methods do not serve as intended as the basis for decisions, planners trust their own experience of user "needs".

> So, what's important? Should I go along with the individuals or should I listen to the representatives? I think you should listen to everyone as far as possible, but what finally carries the greatest weight, what you base your decisions on, is not that simple. That's where we now have to trust the subtle intuition of the people who make the decisions.

Personal experience is what strategic planners use in situations where there is a lack of information about what users need. They describe using experience-based knowledge as a basis for their decisions. The "subtle intuition" one planner talked about is most likely another word for "my own experience". This illustrates again how the explicit methods available do not furnish the planners with the information they think they need.

When it comes to the needs of certain groups, the strategic planners' experience-based knowledge acquires additional weight. This is very much the case for groups with life-situations beyond the planners experience, and it is here that the problem of the planners' use of personal experience and implicit methods such as the I method becomes pressing, despite their good intentions and the "customer friendliness" of the SRA. One strategic planner felt that it was important that previously ignored groups and individuals should take an active part in the planning process, as she felt that her limited experience of certain groups was a problem.

> I mostly know about my own group and there's a world I know nothing about, such as social class 1 [the upper class] or social class 0, the immigrants who've just arrived. I've no personal experience there. Or people living below the breadline, who have lots of children, or are sick, and who live from day to day trying to make ends meet. … I don't know that group,

and neither do my colleagues. When we discuss things, I've noticed we're lacking something there; we think of our own social groups not the other ones. Because we don't know anything about them—well, they don't exist!

That "social class 0" is remarkable, derogatory even, but the important point is that the planner has no personal experience of newly arrived immigrants, and therefore they "do not exist" as a group and cannot be included in the planning. While "social class 0" is a group that has never been categorized and defined, and therefore does not exist, even less possess any planning characteristics, there are existing categorizations that are so general that they too lack obvious characteristics for the planners. One such group defined as a "customer category" by the SRA in their policy documents is "the working population" [32]. Does everyone in the working population have the same needs? "Working population, it's so big. It's almost the whole population of Sweden!" one strategic planner said. A group defined in such a sweeping manner is difficult to work with, and the question becomes what the planners' own categorizations look like and how they are created. Several strategic planners mentioned "customer segmentation" as a way out of the problem of general and meaningless categorizations such as "working population". Customer segmentation is a way of defining "customers" in order to market oneself to them more effectively; it delimits groups that are so geographically or demographically homogenous that they become distinct from other groups. Such groups are easier to deal with from an organizational viewpoint, and it becomes possible to communicate with each group in a manner adapted to their conditions.

Several planners mentioned that it would be a good thing if the "needs" of, for example, immigrants, pensioners, and the elderly could be investigated. At one of the regional offices visited, strategic planners had produced a report in which they had taken a number of "customer groups" such as "Working population" and "Youth" and broken them down into subgroups which they called "segments" [33]. Their report stated that there is a need to "decrease the generality of the approach" and to a greater extent to "serve customers according to their more specific wishes and conditions". The feeling thus surfaces once again that in order to achieve "customer benefits" planners need better information on actual, "customer-specific" problems and detailed needs. The report structures and describes the different lifestyles, values, wishes, and opinions which the planners have identified for the different "customer segments". The knowledge on which the descriptions are based comes from statistics and focus group interviews, but the report also shows that there is room for the planners to use their own, or interviewees', understanding of people to structure "segments"

and to identify their identities and lifestyles. One group so identified was called "Younger low-income earners". According to the report, they are materialistic and strongly individualized, and tend not to welcome change. Their interest in the environment is nominal; they have few capital expenditure goods but plan to buy most things. Well-off house-owners are found at the opposite end of the spectrum. They have a "globalist way of thinking"; they take risks and like change. People in this group, according to the report, are often individualistic and are interested in tax matters. In a draft version of the report, the same segments are named "Single and pizza" and "Golf and private school", respectively. The identities the planners ascribe to these groups derive from general conceptions of single, well-off, or poor people. In order to be able to "serve customers according to their more specific wishes and conditions", such conceptions are used to delimit and configure the groups' identities and lifestyles. This shows the unfortunate link between the use of implicit methods and conceptions of race, gender, and age in the design of infrastructures that previous research has identified as problematic from a user perspective [20, 25].

6 Discussion and conclusion

In this study we consider how Swedish transport planners at the SRA create knowledge of the users of the transport system and their needs. There has hitherto been a distinct lack of research on the methods the authorities use to create knowledge about users in a planning context where users are regarded as "customers"; this paper set out to remedy this fact. To this end, we have addressed three issues: (1) How do the SRA planners use explicit and implicit methods? (2) How does the knowledge process work at the SRA, and (3) what role do explicit and implicit methods play in the process?

The interviews with the planners at the SRA show how they tackled the question of who are representative road users and what they might want. By collecting and systematizing requests, they try to differentiate between general "needs" and the "subjective" wishes of an individual. To this end, the planners have explicit methods such as CSI and the customer case management system *Kundskap*, intended to ensure objectivity. Yet the planners find it difficult to use explicit methods to pin down good representativity. They look for the representative user but cannot find him or her.

At the same time as they search for user needs in actual situations, they describe how they wish to avoid "the loud ones" and "the ones who call and nag". They look for what N or M might need, but in practice the planners' own experience-based knowledge carries great weight in their choices. When the planners describe how they work, they do so against the background of the ideal of objective planners

who garner information from representative "customers"; however, meanwhile they use what earlier research has termed implicit methods [17–19]. Among the implicit methods the planners use is to draw on personal experience—the I method. Of course, it is more difficult to plan for people whose life situations you have no experience of. Transport planning may do wrong by people, or be based on ideas about people which the people in question feel to be untrue. The SRA has much-vaunted "customer capture methods" with which to collect, "capture", knowledge about road users. This use of terminology give the impression that the identification of user needs is a more neutral, objective process than it actually is. The descriptive, interpretative, and evaluating aspects to knowledge production tend to be played down in central policy documents and activity management systems, while in practice the planners' work abounds in interpretative and evaluating elements. They are in fact a prerequisite for their work.

Our study shows that these methods and the basic data are not necessarily objective tools in the hands of neutral transport planners. The findings of this study are in line with the results from previous studies, a number of which on various technical and infrastructural contexts shows that knowledge is not just objectively identified or "collected" by organizations, but is created by the methods used and the notions of users current among designers and managers [17, 21, 22]. Such methods are also used to define and categorize users in different groups as having particular properties, behavior, and needs. The literature also shows that in development projects in general there is little awareness of what conceptions about users are built into products and service undertakings as a result of using implicit methods [20]. Those who design products and services often do not realize that their ideas about users often mirror their own concerns or are based on unverified assumptions [20]. Unproblematized conjecture about users can at worst lead to products and services that are unnecessary or are badly suited to the users' real needs. The planners at the SRA, however, are conscious that their personal ideas affect their work. They search for methods that, in combination with the current implicit methods, might help solve the problems of representativity or subjectivity, but they cannot find them. This is particularly clear in the case of groups of users outside the planners' experience.

With respect to how the planners describe their working practices, the question to ask is how are we to understand the processes that identify and define what is regarded as representative knowledge about user "needs" in transport planning in general. What hypothesis can this study suggest for the way organizational conceptions and knowledge about users are shaped by the methods in use in transport planning? The SRA planners search for their "silent customers" or the unengaged general public: N or M are not the sort to call and nag. Another, similar category are the "absent citizens", about

whom planners have no personal experience; they therefore do not exist as a group with an identity or needs, and so cannot be a part of the planning process. User "needs" appear to the planners to be "out there" somewhere, but the way in which they work is such as creates knowledge, representativity, and user identities—they are constructions. Representative "needs" are *created* by the planners in the planning process thanks to the methods used, rather than being *discovered* by the planners. To see knowledge as the sum of constructions is to call into question the possibility of identifying an accurate and stable image of the public. The work of transport planner is not the neutral collation of knowledge, wishes, and needs.

To conclude, this study has shown how transport planning is likely to be affected by the personal beliefs and experiences of the planners concerned, but there is a need to better understand both the practical and scholarly implications. Of the practical implications of our results, the first concerns the SRA and the way its planners' daily use of implicit and explicit methods should be handled. Our results show that hitherto there has not been sufficient efforts to follow up how the head office's sanctioned, explicit methods have been used in practice at the various regional offices, and how that affects the creation of knowledge about users. Before new methods are developed, for example to handle issues of representativity, the experience of existing methods currently in use ought to be collated and evaluated.

The planners at the SRA who were interviewed are similar to one another in several respects: they are university educated; they come from similar ethnic and class backgrounds; they belong to a specific professional tradition which has its own specific ways of representing use and of perceiving and acting [19]. Such factors, in combination with the life situations that transport planners have experienced and their ideas of other people, probably affect the design and maintenance of the transport system, although admittedly more research is needed in order to understand how the knowledge and user identities so produced inform particular planning processes, and with what consequences. The second practical implication of our results is that transport planning needs to be done with great awareness of how it creates users as categories with particular needs and identities. At worst, a vague process leaves the transport planners' values unspoken, despite the fact that they always will be of importance in the planners' work.

Of the scholarly implications of our results, one is about the feasibility to develop new methods that ensure representativity. Those few transport studies to have developed new methods of adapting transport systems to users' wishes have contributed to developing explicit methods, for example user segmentation [10]. Our study demonstrates that the explicit methods are in all likelihood also influenced by experience-based knowledge. This qualifies the ability to ensure representativity and objectivity by using explicit methods. This in turn leads to a second scholarly implication of our results, namely how to view the relationship between implicit and explicit methods in analytical terms. The transformation of the transport planners' experience-based knowledge into explicit knowledge is a prerequisite for knowledge dissemination and organizational learning, regardless of problems of representativity. Practical methods for the formalization of individual planners' experience-based knowledge using explicit methods are a prerequisite for knowledge dissemination. How this is done in practice, and with which consequences for representativity, is another research challenge that has to be addressed.

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