Quality processes in public transport: a new way to increase ridership?

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Abstract

In the 1990s users of public transport became customers, and public transportation operators saw the expansion or even the creation of their own marketing departments. The second step is now related to quality: Total Quality Management, "Cycle de la Qualité" in France, service quality certification, ISO 9001 standards and other labels.

But how to evaluate the extent to which the implementation of quality service standards is capable of accompanying or even sparking modal transfer from the automobile to public transport? The proposed paper will present a research (completed in 2004) conducted in four urban areas in France (Île-de-France, Lyon, Strasbourg, Aix-en-Provence) and two in Switzerland (Geneva, Bern). A total of more than 7,000 people were interviewed by phone on their use of different transportation modes and on their perceptions of the automobile, of public transport (depending on whether or not these means of transport are used) and of the quality criteria they associate with public transport.

Presented as a way of preserving or even increasing the modal split, the purpose of quality service standards is to entirely rethink the process of service production, to make a commitment to offer a quality level (as is the case in other services such as hotels or shops, for example), the final goal being to create a positive image. In France, the implementation of the AFNOR standard was based on the "Cycle de la Qualité", also used for the European Norm EN13816. One of the disadvantages of this approach is that it excludes the non-user (the car-owner) from the focus of the transport operator, whose goal is nevertheless to increase its modal share. Yet, in order to attain this goal, the company needs to do more than transport more people – it needs to acquire new customers.

The analysis of the data collected in this study shows that the images of quality service and of the criteria considered by those surveyed to be most important vary according, among other things, to the image they have of public transport and the use they make of it. Furthermore, the criterion most cited by car-owners is security (meaning protection from attacks, and not from accidents), and the AFNOR standard does not offer a sufficient tool to "guarantee" it. In Switzerland, the standards applied in Geneva (ISO 9001) or Bern (the Q tourism label) are not really convincing responses either, because they do not deal with transport alone. The major difference between the two countries regarding main expectations of city inhabitants on public transport quality is the importance of security in France and the importance of network structure (interchanges, network extension) and punctuality in Switzerland.

In sum, quality service standards do not appear to provide a sufficient response to the segmented expectations of public transport customers or non-customers. However, there is room for action. The summary typology that we have developed shows this: about 25% of those questioned in the central urban areas, around 40% in suburban or periurban areas and even close to 50% in the French suburbs should be the centre of these operators' attention because these individuals are potential "switchers". They are either car-owners with a positive image of public transport (and therefore potential customers if the supply meets their requirements) or "prisoners" of public transport with a negative image of it (and therefore potential car-owners if the elements of constraint – access to a driver's licence, change of workplace – can free them from their "captivity").

Differentiating these people's expectations and defining suitable solutions would in our view be more productive than applying a standard across the board. The competitor in terms of positive image however remains the automobile, which is a long way from obtaining its own certification.

Keywords

Public Transit – Quality – Travel Behaviour – France – Switzerland

1. Public Transport Quality: definition and expectations

Can the quality certification of public transport services guarantee a predefined level of quality which will secure customer loyalty? Or is it a precondition for the improvement and development of these services? In terms of image, how can new customers be attracted by information which focusing on the quality of the service, when it largely ignores the opinions of non-users of public transport? This presentation aims to answer these two questions by presenting the results of research[1] carried out in four French (Île-de-France, Strasbourg, Lyon, Aix-en-Provence) and two Swiss agglomerations (Geneva and Berne). In excess of 7,000 people were surveyed by telephone on their travel practices, the image they have of different means of transport and their assessment of the quality of public transport.

1.1 The concept of service quality

At the end of the 1970s, which was characterised by the triple convergence of industrial quality, standardisation and consumer protection, the ISO set up the "quality management and quality assurance" committee[2]. It was behind the first ISO 9000 standards introduced in 1987, which were originally applied in the industrial sector, then later in service companies. There are two major issues linked with the transition from industrial to service quality. First, defining service quality is a more complex undertaking, as certain aspects are difficult to measure quantitatively (for example, the politeness of staff, cleanliness etc.) and that the perception of services by its very nature is subjective. The definition of service quality proposed by Kauv and Kühn is: "The degree of conformity of all characteristics of a service with the aim of satisfying both objectively and subjectively the needs and expectations of users in a market segment and at a fair price" (op. cit.: 17).

The work carried out as part of the European project QUATTRO[3] and by French research teams led to the development of a systemic approach to total quality control, which integrates both the vision of the firm and that of the customer. Averous (1998) provides a precise

[1] Jemelin Christophe (2004), Qualité de service des transports publics et mobilité urbaine: pratiques et représentations, Analyse comparative franco-suisse, doctoral thesis No. 2905, Lausanne, EPFL.

[2] ISO TC 176 Committee, http://www.iso.org

[3] "Quality Approach in Tendering/Contracting Urban Public Transport Operations", http://www.cordis.lu/transport/src/quattro.htm

definition under the term "quality cycle (CYQ)". A European standard was also developed (EN 13816) which classifies eight groups of quality criteria.

1.2 Different modal practices

In the six agglomerations studied, a variety of neighbourhoods were surveyed: "central urban", in other words a densely populated, mixed and well-serviced city centre (for example, Geneva Plainpalais); "suburban", a densely populated neighbourhood on the outskirts of the city centre (for example, Strasbourg Hautepierre); and "periurban", a residential suburb consisting of semi-detached and detached homes (for example, Mennecy on the outskirts of Paris). The telephone surveys reveal the differences in transport practices between these types of neighbourhoods:

- There is a strong correlation between access to modes of transport and gender. Overall, fewer women tend to have access to a car than men. This was true for all neighbourhoods, with the difference in some cases being more than 2 to 1.

- Modal practices vary according to the fabric of the neighbourhood: central and suburban fabrics are geared towards public transport use, while the periurban fabric is more geared towards car use. Of course, this does not come as a surprise. However, the modal share of collective transport is very low in central urban fabrics, such as Aix-en-Provence (weighted in favour of car use) and Strasbourg Neudorf (weighted in favour of pedestrians and bicycle use).

- People who use public transport exclusively have a distinct profile: an over-representation of non-workers and pensioners.

1.3 The central criteria for defining quality

In addition to their opinions on the respective importance of quality criteria, those surveyed were invited to say which criterion they considered to be most important and which should be given priority. The results show that in France **safety** is most often cited as the main criterion. The rates vary between 32% and 39% for central urban neighbourhoods, between 37% and 42% for suburban neighbourhoods, and between 35% and 41% for periurban neighbourhoods. Evry led the group with 53% of interviewees citing the safety criterion first. Paris registered the lowest score of all the agglomerations studied. This is surprising given the reports of attacks in the Metro and RER that regularly appear in the press. The lowest rate observed (all neighbourhoods taken together) is in Geneva, followed by Thônex. Geneva stood out in this

survey by the range of criteria cited with three being of virtually equal importance: the network structure, frequency and punctuality.

Swiss Germans gave greatest importance to the punctuality criterion (27% for Zollikofen and 22% for Berne), while the rates in France were between 7% (Lyon) and 15% (Evry).

To summarise, **safety is the most often cited quality criterion in France regardless of the agglomeration and the type of urban fabric. In French-speaking Switzerland, frequency is the main priority criterion, while in the German-speaking part it is punctuality.**

2. Who is the target of service quality certification?

We developed a general typology to evaluate the sensitivity of interviewees to service quality, based on the following premises:

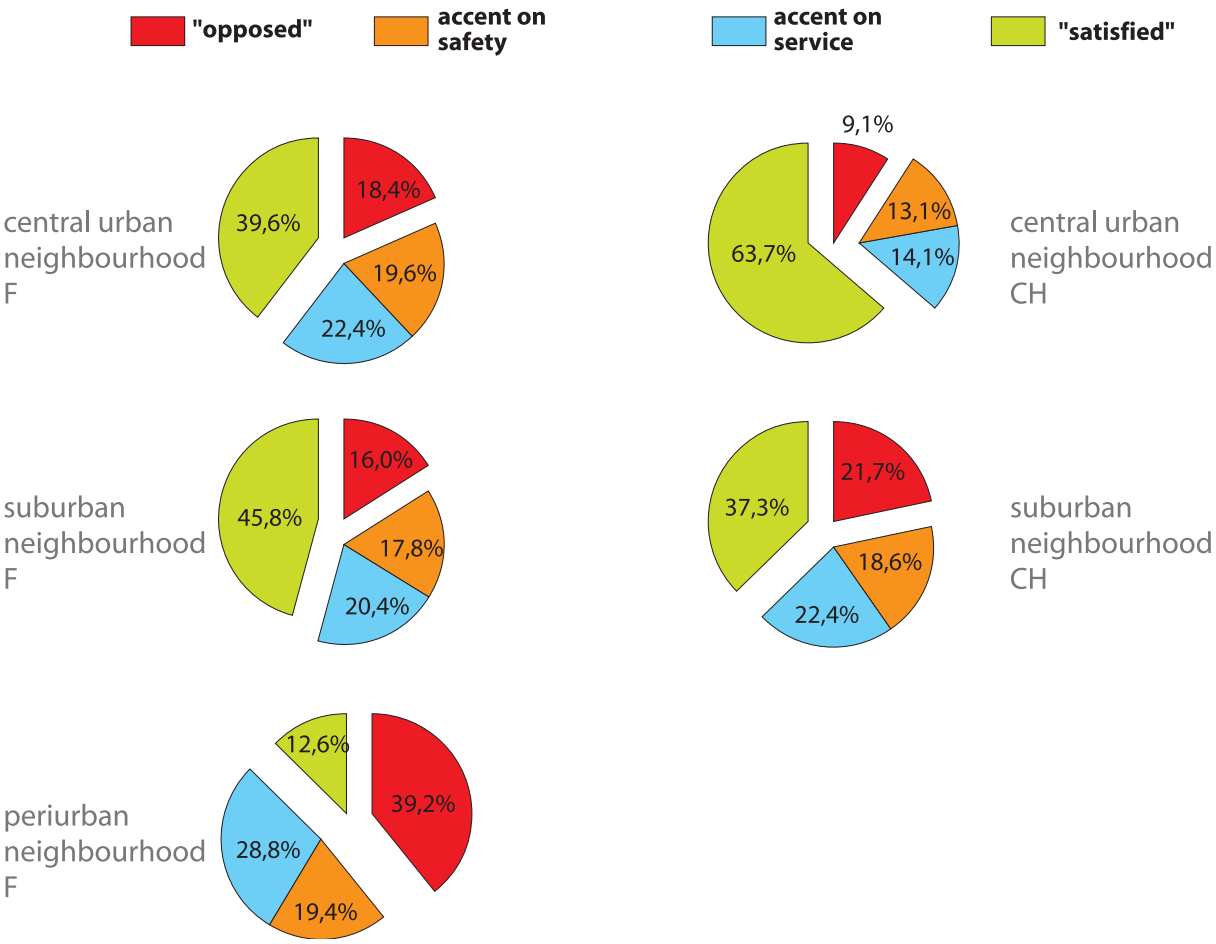
- In our opinion, satisfied customers are not the main target of service quality standards, but of course their introduction would serve to reinforce the customers' positive opinion of public transport. Here is the first stage in maintaining customer loyalty.

- Total quality control is unlikely to influence non-users with a negative opinion of public transport. First, they pursue activities which are organised around car use (making modal transfer very difficult as it would require a change in both the type and location of the activity, cf. Chapter 4). Second, they tend to have scant knowledge of the public transport services on offer.

- In our opinion, the most important issues linked to total quality control concern two other categories of people: dissatisfied customers (second stage in maintaining customer loyalty) and non-users with a positive opinion of public transport. This is the crux of the modal transfer issue: how to retain "captive" customers (who have not deliberately chosen to use public transport), when they are no longer forced to take public transport due to a change in circumstances (e.g. new job or access to a car)? Second, how can car users with a positive opinion of public transport be encouraged to change their transport practices?

Figure 1 shows three categories that could be the target of service quality standards: current ["satisfied"] customers (including pedestrians and cyclists), car users with a negative opinion of public transport ["opposed"], and the " maximum potential" group [dissatisfied users/car owners with a positive opinion]. To pursue this analysis in more detail, the final category was further classified into sub-categories: those who give more importance to the safety criterion and those who prioritise the service criterion.

Figure 1 General typology: interviewees classified according to transport practices and opinions on service quality



Source: Jemelin (2004)

Figure 1 distinguishes three different models: central urban neighbourhoods in Switzerland with two thirds in the "satisfied" category, less than 10% in the "opposed" category, and one quarter in the "maximum potential" group; French central urban neighbourhoods and suburban neighbourhoods in both countries have the lowest share of "satisfied" customers, but this only accounts for between 37% and 46% of all interviewees in this group. Here the "maximum potential" group is around 40%, which is far from negligible, while the share of the "opposed" group is between 16% and 22%. Finally, the third model is characterised by a high proportion of "opposed" (between 34% and 39%) interviewees, and is found in the periurban and new town fabrics. There are fewer in the "satisfied" group, yet the percentage of people dissatisfied with public transport, namely car users with a positive image of public transport, accounts for almost half of those interviewed.

We observe that opinions differ between the two countries across three out of four types. First of all, there is the "opposed" group which in France places safety at the top of the list of criteria. In Switzerland, frequency is the most important criterion. This was also true for suburban neighbourhoods in both countries (see table below), where safety (France) and punctuality (Switzerland) – an additional service criterion – were also cited. However, the "satisfied" group is more sensitive to the service criterion: network structure and quality of connections in France, and frequency in Switzerland. It is interesting to note that safety is the second most important criterion, even among the "satisfied" group in France.

While the "safety target group" obviously deem safety as the most important quality criterion (see the tables for more detail), what is more informative is the fact that people in this group in France tend to associate it with the notion of cleanliness rather than punctuality. Waiting in a rundown station without knowing when the given mode of transport is due to arrive is considered stressful and consequently could make users feel unsafe. The "service target group", on the other hand, is relatively similar in both countries. In France, greater value is given to the network structure, yet, for the time being at least, AFNOR certification is only applied on a route-by-route basis.

To summarise, a detailed examination of criteria shows that the quality standards, such as those proposed by AFNOR in France, only partially meet the expectations of both customers and non-customers. At issue here is the very incomplete nature of certain criteria or the difficulty associated with explaining or communicating their application. In light of this, it would appear rather unlikely that the quality certification of public transport routes would attract the "service target group" and even less the "safety target group". Yet, there is a "market" which remains untapped: users with a negative opinion of public transport – undoubtedly ready to change their means of transport as soon as the opportunity arises – and car users with a positive opinion of public transport. Overall, these two categories account for almost 40% of the people surveyed in this study (with the exception of inhabitants of periurban neighbourhoods).

This assessment does not call into question the process of introducing quality standards, which manifests itself in a formalisation of procedures and performance improvement. Although customers are made aware of this process through stickers on the public transport vehicles, paradoxically this process is characterised by a lack of information and transparency. For example, although service companies are evaluated according to their adherence to strict and objective criteria, they make no mention of the corresponding benchmarks on their homepages (for example, the RATP in Paris or the TCL in Lyon). At

issue here are initial steps towards improving the image of public transport. From this perspective, its main rival is the car. However, the certification of this mode of transport is a long way off.

3. Bibliography

AFNOR (2002), *Norme européenne – norme française NF EN 13816, Transport public de voyageurs – Définition de la qualité de service, objectifs et mesures*, Saint-Denis.

AFNOR (2000), *Normalisation française XP 50-805, Transport public de voyageurs – Définition de la qualité de service, objectifs et mesures*, Paris.

Analyse comparative (benchmarking) dans les systèmes locaux de transport de voyageurs (2002), coll, rapports d'étude du CERTU, Lyon.

Averous Bernard et Averous Danièle (1998), *Mesurer et manager la qualité de service*, INSEP Editions, Paris.

Bette Valérie et Mathieu Yves (1998), *La qualité des transports publics urbains et départementaux de voyageurs et la délégation de service public, Guide*, CERTU / GART / UTP, Lyon / Paris.

Bidault Jean-Maurice et Jallageas Maurice (2002), *Transport public de voyageurs, Qualité de service, la norme NF EN 13816,* Afnor Pratique Collection, Paris.

Bidault Jean-Maurice (2001), *PREDIT : Mesurer la qualité de service, définition d'indicateurs de la qualité de service du système de transport*, JPF Consultants, Paris.

Casey Robert F. and Collura John (1994), Advanced Public Transportation Systems : Evaluation Guidelines, Federal Transit Administration, Washington.

CERTU/UTP (1998), *Quattro, l'Europe ou la qualité dans toutes les langues*, Lyon/Paris.

Citizens'Network Benchmarking Inititative (2002a), *Results of the common indicators, Statistical indicators on local and regional passenger transport in 40 European cities and regions*, European Commission, DG Energy and Transport, Brussels.

Citizens'Network Benchmarking Inititative (2002b), *Working group Contracts and quality, Improving quality and value for money in public transport through tendering*, European Commission, DG Energy and Transport, Brussels.

Commission internationale des métros légers (1997), *Mini-atelier : la gestion de la qualité*, UITP, Düsseldorf.

Cruchant Lucien (1998), *La qualité*, PUF, Paris.

Evaluation des transports en commun en site propre, Indicateurs transport pour l'analyse et le suivi des opérations (1997), CERTU, Lyon.

Federal Transit Administration, Office of Planning (1997), Technical Guidance on Section 5309 New Starts Criteria, US Dpt of Transportation, Washington.

Gant Frances and Grabosky Peter (2000), « Tackling subway graffiti in New York City : the Clean Car Program » in *The promise of crime prevention,* 2nd ed., Australian Institute of Criminology, Canberra.

Horizon 2010 pour la qualité de service : les entreprises de transport innovent (2001), coll., Union des Transports Publics, Paris.

IAURIF (2002), « L'insécurité en Île-de-France : quelles populations, quels territoires » in : Note rapide No 289 Sécurité et Comportements No 3, février 2002, Paris.

Ieda Hitoshi et al (2001), «How can the quality of rail services in Tokyo be further improved ?» in : Transport Policy 8/2001, pp. 97-106.

ISOTOPE (1997), *Autorités et exploitants, le progrès en commun*, coll., CERTU, Lyon.

Jemelin Christophe (2004), Qualité de service des transports publics et mobilité urbaine : pratiques et représentations, analyse comparative franco-suisse, Thèse de doctorat No 2905, Ecole Polytechnique Fédérale de Lausanne.

Kauv Juliette et Kühn Francis (1999), *La qualité de service : application aux transports collectifs urbains*, Synthèse INRETS No 34, Paris.

Mathieu Yves (2001), « La qualité des services d'accès aux territoires : une norme innovante », communication au XIX^{e} Congrès Belge de la route, Genval, 12-14 septembre 2001.

Mathieu Yves (1994), *La qualité dans les services publics de transport de personnes : sa traduction dans les conventions*, GART / CERTU, Paris / Lyon.

Meads Richard (1997), *Quality and Customer's satisfaction*, UITP 52nd International Congress, Stuttgart.

Midol André (1999), *Dossier relatif à l'analyse de la stratégie de sécurisation des transports à New York, Etude comparative New York – France*, VIA-GTI – PREDIT, Paris.

Normalisation française (2000a), norme XP X 50-805, Services de transport – Transport public de voyageurs, Définition de la qualité de service, objectifs et mesures, Paris, AFNOR.

Normalisation française (2000b), FD X 50-808, Qualité des services dans les transports, Identification des critères de qualité pour le transport de voyageurs, Paris, AFNOR.

Norme européenne – norme française NF EN 13816 (2002), Transport – Logistique et services, Transport public de voyageurs – Définition de la qualité de service, objectifs et mesures, Paris, AFNOR.

Plazaola Jacques de (1999), *Recherche sur les stratégies de sûreté et d'ambiance dans les transports publics*, VIA-GTI – PREDIT, Paris.

SAFE Strategy (2002), South Yorkshire Passenger Transport Executive, Sheffield.

Warsén Lisa (2002), « Riding without fear », in : Public Transport International No 3/2002, pp. 14-18.