

## SERVICE QUALITY AND CUSTOMER SATISFACTION IN PUBLIC TRANSPORTS

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**Abstract:** *The objective of the paper is to identify the determinants of service quality as well as its impact on the satisfaction of public transport commuters. The paper explores the relationship between service quality and customer satisfaction in a public transport service taking into account both internal and external perspectives. In order to analyse this relationship, the concepts of service quality, consumer satisfaction and dissatisfaction are assessed. A model of analysis is developed aiming at explaining this relationship and guiding the empirical study. This is based on an exploratory case study of a metro company in Europe. The results of the study put in evidence two key findings. The first is related to the level of service quality in its main dimensions. We conclude that reliability, security, speed, comfort and punctuality are quality dimensions of greater importance for the public transport services. Secondly, the study explores satisfaction and their determinants. Despite literature stipulates the existence of a distinction between the constructs of quality and satisfaction, this study found that the transport company, non-customers and customers clearly do not make such a distinction.*

**Keywords:** *service quality, satisfaction, dissatisfaction, public transport*

### 1. INTRODUCTION

Marketing researchers have, for a long time, recognized the importance of service quality as well as consumer satisfaction. Significant investigation has been conducted in both fields, particularly in services (cf. Andreassen, 1995; Edvardsson, 1998; Friman e Garling, 2001; Higgs *et al.*, 2005). However, few studies have explored the both sides of the service process: operations (the internal side) and customer (the external side) perspectives of quality and satisfaction. In the public sector this is likely to be of particular interest. Public services, such as public transportation, have to meet the needs of the customers playing, at the same time, a role in economic and urban sustainability. They challenge operations to deliver quality to serve customers and non-customers while making the best use of company resources.

The objective of this article is to identify the determinants of service quality and its impact on the satisfaction of public transport commuters. It is divided into five sections beyond this introductory section. It begins with a review of the literature that synthesizes and discusses some concepts considered relevant for the research. Then it addresses the methodology used in the study, as well as a number of considerations about the quality of the research design.

The next section presents the findings, which are followed by a discussion of possible implications. Finally, the paper ends with the main conclusions, managerial implications and some suggestions for further research.

### 2. THEORETICAL BACKGROUND

The theoretical background is developed around three major issues: quality, satisfaction and dissatisfaction. In the management context, the word quality can be used to refer to different things: accordance with the specifications (Levitt, 1972; Juran and Gryna, 1991); excellence (Garvin, 1984); accordance with the requirements, adequacy of use, prevention of losses, or how to answer to or to exceed consumer expectations (Grönroos, 1984, Parasuraman, Zeithaml and Berry, 1985, 1988). Through such a variety of concepts, the common point of most of the definitions, exception for the first one, is that of targeting the consumer. In this research, quality is presented in the perspective of perceived quality because it is the most commonly used in the services area. Moreover, the research led to a better understanding of the existence or the non-existence of differences between quality and satisfaction. These arguments were enriched by the literature review of each theme, particularly satisfaction which is presented next.

Literature about satisfaction has to be adapted to the context which is to be studied. Customer satisfaction is seen as an answer to completion and fulfilment of needs (Oliver, 1996); a psychological state (Howard and Sheth, 1969) and as an assessment of overall evaluation (Westbrook, 1987). Moreover, consumer satisfaction is seen as a cognitive response (Bolton and Drew, 1991; Tse and Wilton, 1988), an emotional answer (Cadotte and Turgeon, 1988; Halstead, Hartman and Schmit, 1994; Westbrook and Reilly, 1983) and as a result of a

development process (Oliver and De Sarbo, 1988; Tse and Wilton, 1988; Swan, 1992; Erevelles and Leavitt, 1992).

Although literature encompasses diverse meanings for satisfaction, they all share common elements. When examined as a whole, three general components can be identified: (i) consumer satisfaction is a cognitive and emotional reaction; (ii) the reaction belongs to a particular focus, (iii) the reaction occurs in a particular period (after consumption, after choice based on experience and expressed before and after choice, after consumption, after extensive experience of using).

From the literature it also seems that there is not a general consensus regarding the nature of this concept. If some authors argue that consumer satisfaction results from a specific transaction that occurs at a given time and by the benefits and value of the transaction, others see consumer satisfaction in terms of cumulative overall satisfaction, based on all contacts and experiences with a company and the client's experience until a certain moment.

Literature on customer satisfaction also clarifies the concept of dissatisfaction. For some researchers, these two concepts are totally different while for others, dissatisfaction is on one end and satisfaction is on the other end of the same continuous line, and it is stated that some of the determinants are primarily a source of satisfaction or dissatisfaction. So, this study also intends to make clear the differences between the two concepts.

Dissatisfaction has been the focus of extensive research in the services area (Swan and Combs, 1976; Maddox, 1981; Cadotte and Turgeon, 1988; Johnston, 1995; Edvardsson, 1992, 1998, Liljander, 1999). From the literature, once again, contradictions amongst authors tend to arise. According to some researchers

satisfaction and dissatisfaction are two different concepts, that is, the consumer can be satisfied or dissatisfied according to the level of received quality. However, for some other authors, the two concepts are not opposing, but rather a continuum, in that, some determinants tend to be, firstly a source of satisfaction and others a source of dissatisfaction.

A number of studies (cf. Edvardsson, 1998) have focused on how passengers of public transport value quality factors, and the final result provides a measure of the value of different factors and ranks them. Nevertheless, there are not significant studies about satisfaction in public transports, especially in metro services. Another gap in literature is that most studies analyse customers, but leave non-customers aside. Furthermore, most studies use an external analysis based on surveys. Finally, the majority of the literature does not execute further analyses about the correlation between customer satisfaction and insatisfaction.

### 3. FRAMEWORK FOR ANALYSIS

In this research the process of data analysis began before its collection, by developing the research questions and model of analysis. The model of analysis developed would examine how quality relates to satisfaction and how this relationship takes place in a public transport services company.

To ensure coherence and reliability of the empirical data, the elements which were under investigation and their respective variables were defined, as outlined and presented in Figure 1.

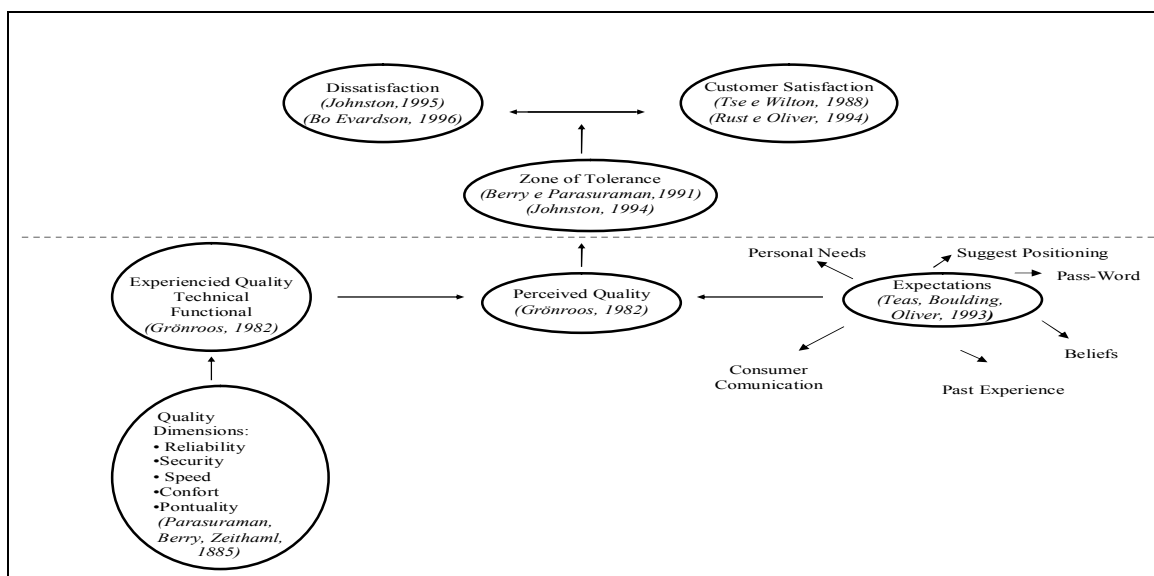


Figure 1 – Framework for Analysis

According to this diagram, the relationship between quality and satisfaction may be understood through a clarification of how customers evaluate the dimensions of quality. The zone of tolerance appears to be used as a unifying link between expectations, performance and results. Previous service marketing challenges have prompted some research questions about the relationship between quality and satisfaction, specifically: RQ1: In public transportation services, what are the determinants of service quality that influence perceived quality? RQ2: How does the perceived quality influence satisfaction and dissatisfaction of commuters in public services transports? Performance evaluations lead to an overall evaluation of service satisfaction, the results of which can be resumed to either satisfaction or dissatisfaction in general terms. The zone of tolerance emerged as important in the understanding of the relationship between quality and satisfaction.

#### 4. METHODOLOGY

The research clarifies the key dimensions of services quality that influence customers' perceived quality. It also explains how the perceived quality influences customers' satisfaction and dissatisfaction. In addition, the study explores and expands on findings or current theories about the differences and the relationship between satisfaction and dissatisfaction. Evidence was found that there are two different realities in the market: the customers' and the non-customers' complex perceptions. Finally, the research identifies the relevance of the zone of tolerance and its relationship with quality and satisfaction.

The use of a case study approach seemed to be appropriate in this research. Within qualitative methodologies, a case study strategy was adopted, based on the interaction between theory and empirical data. Yin (1994) defines case study as an empirical study that investigates a contemporary phenomenon in real life context, especially when the boundaries between the phenomenon and context are not clearly evident. In terms of features associated with the processes under study, it seems important to focus on contexts in which the phenomena developed. Moreover, this method allows the focus on perception processes more than outcomes, and how the participants interpret their experiences and give them meaning.

Exploratory and "how" questions are being posed, and the researcher is focused on a contemporary phenomenon within its real-life context (Yin, 1994). The research objective was to describe and understand processes and relationships in a consumer services organization. Attention was drawn to the processes, which was the study's unit of analysis. The focus of analysis of this research was teams, groups and departments. Data was collected by both interviews and focus groups, as well as through documents. The

interviews focused on the company's perspective of quality and customer satisfaction, while the focus groups with customers and non-customers provided the market's point of view. The interviews included people from different functional areas (operations and marketing) and hierarchical levels (executive vice-president, director of technical systems, director of marketing and communication, manager of operational safety, lawyer and supervision of securities and marketing manager - processing of complaints and suggestions).

In addition to the interviews, focus groups were conducted outside the company with customers and non-customers. The main objectives of the focus groups were to identify the most important determinants of satisfaction and dissatisfaction of both customers and non-customers, and to obtain or draw up a list of the determinants considered most relevant and most often expressed by the participants.

Specifically, the analyzed documents consisted of: annual company reports, market research reports on service quality and satisfaction and internal memos.

A pilot focus group was carried out to test the discussion guide and the survey. Subsequently, four focus groups were made. There were a total of 26 people involved (men and women). The age range of the participants selected was 13-35 years of age, this because prior studies had indicated that 65 percent of the commuters using the metropolitan were within this age range. The selection criteria used aimed at selecting participants consisting of customers who use the metropolitan, at least once a week and non-customers who had never used this transport service.

The focus groups were recorded and handwritten transcription notes were taken for later analysis. The focus sessions were divided in two distinct parts. Initially, the discussion focused on the reasons that would lead customers to use or not use the metropolitan. Subsequently, the focus was shifted towards the determinants of satisfaction and dissatisfaction and on the characteristics that are most valued in this service.

The process of analysis and interpretation of data began with the transcription of the interviews and group focus. All of this met with the objectives of the research, including with comparing and contrasting the different views of stakeholders on issues of the research and allowed for individual analysis and comparisons of the case study. Data was also analyzed and grouped, then codified and reduced employing a systematic approach that complies with that proposed by Miles and Huberman (1994).

#### 5. RESULTS AND FINDINGS

The study focused on a company created in 1993 to operate a light rail system in the second largest city of a European country. For a matter of confidentiality, it will

be called Metro Europe. This is a network of electrified railways that goes underground in the city centre, and above the surface in the suburbs. It is divided into five separate lines (with seven services, including an express service) spread over six municipalities in the city metropolitan area. It comprises a total of 68 stations spread over 60 kilometres of commercial lines, with 8 kilometres of underground network. In 2008, this company employed about 120 people and carried 40 million commuters.

Metro Iberia is a player in a context of a strong competition and is one of the companies responsible for the operations of public transport in the metropolitan area. The analysis of this mass consumer service follows in the next section.

The study results point out two main perspectives. One related to the level of service quality in its main dimensions. It was concluded that reliability, security, speed, comfort and punctuality are the quality dimensions of greater importance for the public transport services company. Secondly, the study explores satisfaction and their determinants. The results showed that the dimensions of satisfaction for the company were exactly the same as those of dimensions of service quality, in particular, security, reliability, comfort and speed. This analysis shows us that the company does not distinguish quality from satisfaction. Evidently, it seems that the dimensions of quality and the determinants of satisfaction are identical. There appears to be no clear difference between quality and satisfaction, findings that are no surprising.

The main objective of this research is to understand the relationship between quality and satisfaction. It was found that the organization under study does not make a distinction between these two concepts. Therefore focus groups with the company's customers were also conducted and undertaken. The objective would be to determine and discover the main determinants of satisfaction, comparing them with results obtained in the organization. In the focus groups it was found that commuters value exactly the same determinants of satisfaction as those advanced by the company, in particular comfort, punctuality, speed and reliability. One exception is safety, the conclusion being that customers assume from the outset that the metropolitan is safe. This is in line with the Johnston's (ref?) argument about the hygienic factors having potential for dissatisfaction instead of satisfaction. The results also helped to further understand the views of non-customers, from which we can conclude that the most mentioned determinants were reliability, comfort and cleanliness, security and punctuality.

For these reasons it is concluded that despite the literature's stipulation of the existence of a distinction between the constructs of quality and satisfaction, this study found that the company, non-customers and customers clearly do not make such a distinction. It seems that business, customers and non-customers all

use the dimensions of quality to describe satisfaction. A more careful analysis of the case leads to the conclusion that quality and satisfaction are not entirely distinct and there is also a relationship between the two concepts. The relationship between quality and satisfaction exists when satisfaction is guaranteed. Their ability to meet the needs of the consumer with the service, must take into account the quality of service and its dimensions.

Another view shown in this paper was the distinction between satisfaction and dissatisfaction. The study acknowledges that for non-customers satisfaction and dissatisfaction are opposing concepts. Moreover, the determinants of dissatisfaction are exactly the opposite of satisfaction, namely: reliability/failure to comply with schedules; comfort and cleanliness/discomfort and dirt; security/insecurity; punctuality/failure to comply with schedules.

An interesting finding is that, these results are in line with literature. For customers there is no such relationship between satisfaction and dissatisfaction; dissatisfaction in this case is commonly associated with the technical aspects of the service. It is therefore not clear to customers that satisfaction is the opposite of dissatisfaction. While for the company, the conclusion is that these concepts are contrary, when referring to comfort/discomfort; security/insecurity at night/delays and robberies.

Finally, the results for customers and non-customers tolerance zones were examined. The paper confirms that customers have a greater tolerance zone towards the service than non-customers. In other words, non-customers are less tolerant to failures than customers. This conclusion is evidenced by the customers when they say that in the event of failures or problems with the service, such as delays, lack of cleanliness and lighting, or lack of seating, these reasons alone would not lead to abandoning the service.

It is concluded that in the case of customers there may be some oscillation in the levels of satisfaction (very satisfied, satisfied, unsatisfied) within the zone of tolerance. Non-customers are less tolerant. In these discussion groups' several situations or scenarios of dissatisfaction emerged that would cause abandoning the service, including failure to comply with the vehicle schedules, frequency of carriages and disabled access to the stations.

## 6. CONCLUSIONS

This study answering RQ1 expands on existing knowledge by identifying that service quality dimensions serve as points of departure for companies to develop action plans and strategies that generate perceptions of quality by customers. Thus, for each type of service there may be a specific set of different dimensions of quality, in that they assume different orders of priority. Additionally there is yet another

possibility that each organization may have dimensions that are specific to each/its sector. The classification of the service quality dimensions is important because each one brings different approaches, which help the managers of the companies providing services to understand the importance of each dimension and their impact on customer satisfaction. The empirical data of this case indicates that reliability, safety, speed, comfort and punctuality are the dimensions of service quality which the organization believes most influence the perceived quality. This study also clarified and thus contributes to identify the key dimensions of service quality that influence the perceived quality service, in a specific means of public transportation.

Furthermore, this study shows that if the dimensions of service quality are assured then the customers achieve a degree of satisfaction and dissatisfaction in accordance with their needs, answering RQ2. The research results also showed that depending on the subway line that is used by a particular customer, he/she usually chooses the same dimension as a priority, according to the satisfaction of his/her needs. The research results showed that a client that uses for example the yellow line gives preference to the quality dimensions of frequency and speed, since the choice of this line indicates the need to get to the city centre quickly. The customers who already choose the red line value the dimension of comfort, because it is a line with a more extensive network, which is important for the customer who wants to get a seat. From this we can conclude that if the principal dimensions of quality for customers are guaranteed, they will be satisfied or dissatisfied.

There seem to be several implications of this study for service management. The first practical implication seems to be that it is important to reveal that if the managers know which dimensions of quality service their customers most value, (depending on the type of service we are dealing with), the customers may become more satisfied. This will occur because the organization will know specifically which dimensions of service quality will further satisfy the customers. Thus, organizations can focus their efforts on improving and increasing the dimensions of service quality which generate satisfaction.

The second managerial implication appears to be the evident need for clarification of the link between satisfaction and dissatisfaction. In terms of contribution to management, it is important that managers recognize that satisfaction and dissatisfaction are on a continuum, and that knowing of the dissatisfaction factors specifically, these can then be transformed into satisfaction, thus preventing the loss of a customer in a specific service.

The third practical implication shows that for the non-customers if the companies and the managers know

what quality dimensions this group value most, the company can focus investment on the development of these, including increasing the ability to attract new customers and tailor marketing and communication campaigns with a view to achieving this.

The number of contributions presented serve not only to increase knowledge of the relationship between quality and satisfaction, but also encourages reflection on a topic which should be of utmost importance for managers and the vast majority of service companies, who are faced with the need to offer quality of service in its main dimensions and the consequent satisfaction of their customers. It is also expected that the contributions of the study encourage businesses and their managers to connect with their customers and non-customers. As regards the customers it is important that the company be aware of the quality dimensions that they value most in order to tailor the service to their needs, maximizing satisfaction.

This paper has limitations which are expected to be addressed in future studies. The limitations can be divided into three groups, namely: selection of the case and the process, limitations in data collection and finally the limitations of data analysis. One of the limitations is the small number of cases studied in public transport services which determines the strength and spread or validity of the conclusions. The inclusion of other cases corresponding to other paradigms or variations of the paradigms used here, will enrich the knowledge acquired.

There were a range of other issues that were not explored which could enrich the research. There were other issues that emerged and seemed interesting but again, given the constraints, were not fully explored. For example, the identification of the factors that influence the formation of consumer expectations. When the interviewees were asked, in an open ended question, what factors influence expectations, the answer was unanimous: communication with other consumers. Nevertheless, other factors could have been further explored. It would be even more interesting to emphasize the importance of expectations in a pre and post-consumer, or take into account the role of emotions in the construction or development of satisfaction and dissatisfaction of the customer.

Replication of this study could be carried out in different public transports, which may be compared with another company in the sector. Furthermore, it would be interesting if the theoretical relationship model proposed had an emotional and experimental element. This study could be performed in different scenarios, particularly in areas of different service industries, such as luxury hotels chains, or telecommunications network providers. In addition to providing other results, these would undoubtedly further enrich the data already available.

REFERENCES:

- [1] Andreassen, W. (1995), "(Di)satisfaction with Public Services: the Case of Public Transportation", *Journal of Service Marketing*, Vol. 9, pp. 30-41.
- [2] Bolton, R. and Drew J. (1991), "A Multistage Model of Consumer Assessments of Service Quality and Value", *Journal of Consumer Research*, Vol. 17, pp. 375-384.
- [3] Edvardsson, B. (1992), "Service Breakdowns, A Study of Critical Incidents in an Airline", *International Journal of Service Industry Management*, Vol. 3, pp. 17-29.
- [4] Edvardsson, B. (1998), "Causes of Customer Dissatisfaction – Studies of Public Transport by the Critical Incident Method", *Managing Service Quality*, Vol. 8, pp. 189-197.
- [5] Erevelles, S. and Leavitt, C. (1992), "A Comparison of Current Models of Consumer Satisfaction/Dissatisfaction", *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behaviour*, Vol. 5, pp. 104-114.
- [6] Friman, M., Edvardsson, B. and Garling, T. (2001), "Frequency of Negative Critical Incidents and Satisfaction with Public Transport Services", *Journal of Retailing and Consumer Services*, pp. 95-104.
- [7] Garvin, D. (1984), "What Does Product Quality Really Mean?", *Sloan Management Review*.
- [8] Grönroos, C. (1984), "A Service Quality Model and its Marketing Implications", *European Journal of Marketing*, Vol. 18, pp. 36-44.
- [9] Halstead, D., Hartman, D. and Schmidt, S. (1994), "Multisource Effects on the Satisfaction Formation Process", *Journal of the Academy of Marketing Science*, Vol. 2, pp. 114-129.
- [10] Higgs, B., Polonsky, M., and Hollick, M. (2005), "Measuring Expectations: Forecast vs. Ideal Expectations. Does it Really Matter?", *Journal of Retailing and Consumer Services*, Vol. 12, pp. 49-64.
- [11] Howard, J. and Sheth, J. (1969), *The Theory of Buyer Behaviour*, New York, John Wiley & Sons.
- [12] Johnston, R. (1995), "The Determinants of Service Quality: Satisfiers and Dissatisfiers", *International Journal of Service Industry Management*, Vol. 6, pp. 53-71.
- [13] Juran, J. and Gryna, F. (1991), *Juran, Controle de Qualidade*, Handbook, Vol. 1, São Paulo, Makron Books do Brasil Editora.
- [14] Levitt, T. (1972), "Production-Line Approach to Service", *Harvard Business Review*, pp. 41-52.
- [15] Liljander, V. (1999), "Customer Satisfaction with Complaint Handling Following a Dissatisfactory Experience with Car Repair", *European Advances in Consumer Research*, Vol. 4, Bernard Buboio, Tina Lowrey, L. J. Shrum and Marc Vanhuele (Eds.), pp. 270-275.
- [16] Maddox, R. (1981), "Two-Factor Theory and Consumer Satisfaction: Replication and Extension", *Journal of Consumer Research*, Vol. 8, pp. 97-102.
- [17] Miles, M. and Huberman, A. (1994), *Qualitative Data Analysis: An Expanded Sourcebook*, 2<sup>nd</sup> Edition, Thousand Oaks, Sage Publications.
- [18] Oliver, R. and De Sarbo (1988), "Response Determinants in Satisfaction Judgements", *Journal of Consumer Research*, Vol. 14, pp. 495-507.
- [19] Oliver, R. (1996), *Satisfaction: A Behavioral Perspective on the Consumer*, New York, McGraw-Hill.
- [20] Parasuraman, A. Zeithaml, V., Berry L. (1985), "A Conceptual Model of Service Quality and its Implication for Future Research", *Journal of Marketing*, Vol. 49, pp. 41-50.
- [21] Parasuraman, A. Zeithaml, V., Berry L. (1988), "SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality", *Journal of Retailing*, Vol. 64, pp. 12-40.
- [22] Swan, J., and Combs, L. (1976), "Product Performance and Consumer Satisfaction: A New Concept", *Journal of Marketing*, Vol. 40, pp. 25-33.
- [23] Tse, D. and Wilton, P. (1988), "Models of Consumer Satisfaction Formation: an Extension", *Journal of Marketing Research*, Vol. 15, pp. 204-212.
- [24] Westbrook, R. (1987), "Product Consumption-based Affective Responses and Post Purchase Process", *Journal of Marketing Research*, Vol. 24, 1987, pp. 258-270.
- [25] Westbrook, R. and Reilly, M. (1983), "Value-Percept Disparity: An Alternative to the Disconfirmation of Expectations Theory of Consumer Satisfaction", *Advances in Consumer Research*, Vol. 10, Richard P. Bagozzi and Alice M. Tybout, Eds. Ann Arbor, MI, Association for Consumer Research, pp. 256-61.
- [26] Yin, R. (1994), *Case Study Research: Design and Methods*, 2<sup>nd</sup> Edition, United States, Sage Publications.

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