

# Chapter 14

## A Hybrid Approach Based on SERVQUAL, SERVPERF, and IPA for Measuring Transit Service Quality: With Application for STM, Montreal

**Mohamad Haidar**

*Concordia University, Canada*

### ABSTRACT

*The purpose of this chapter is to discuss the public perception of the quality of service in the public transit system in Montreal using a combination of analyses and surveys. The results are used to make recommendations to improve the STM and its perception. General guidelines of SERVQUAL with some additional questions that are more specific to the current social environment of the city are presented. A survey was conducted by asking 250 international graduate Concordia students to rate a series of statements based on the importance of the issue and how much they agreed with the statement, the results were analyzed using three methods: SERVQUAL, SERVPERF, and IPA. The improvement of timetable synchronization between different metro lines and buses is crucial, as well as the education of STM employees in terms of dealing with different ethnicities, languages, and backgrounds are found. The chapter is a rare outside look at the STM and how users perceive the quality of the service, as opposed to the usual internal studies done by the organization itself.*

### INTRODUCTION

The public transport sector in Montreal includes a metro and bus system (STM) as well as a borough train system (AMT). These are governmental organizations that aim to generate revenue as well as reduce congestion in the city.

DOI: 10.4018/978-1-5225-9570-0.ch014

In 2010 Quebec had an estimated population of international students that exceeded 32,000 people (Economic Impact of International Education in Canada - An Update, 2016). The vast majority of these international students are in Montreal, the largest city in the province. Concordia University alone has over 6,500 students, it is a popular undergraduate and graduate school for students for all over the world.

International students generally tend to live close to the school they attend, which would lead them to rarely use public transport, or live in a more affordable area and using the public transit system often.

Service quality is the sum of costumer perception compared to the desired or expected performance of that service. It is assumed that the desired performance expectation is maximized as the city of Montreal will want its transit system to be as good as possible (under certain budgetary and technological constraints), this is especially important in a congested city and a world where “green” and eco-friendly measures such as transit systems instead of personal vehicles are being more and more encouraged by the worldwide population.

Service quality perception is based on previous experience using other similar services (in this case other public transit systems), as well as things they have heard about the service.

## **PROBLEM DEFINITION**

While service quality has always been important, initially the objective of public transport was more focused on functionality and convenience than on customer approval ratings or quality perception. In recent years the focus has shifted more toward improving and ensuring a high level of service quality, this is done by benchmarking other, more successful public transit systems, optimization, and employee training that is more focused on service quality and empathy.

When it comes to service quality in public transportation there is not much research being done, most analysis is based on revenues (the more people take the metro, the more it is assumed that they are satisfied with the system).

In 2009 the Société de Transport de Montreal (STM) was awarded the American Public Transportation Association award for being the outstanding public transportation system in North America. This award is an impressive achievement, but technology is constantly changing at a very fast pace, not to mention that the user base is also constantly changing since there is a high turnover in the city caused by new students moving to one of the many universities served by the STM.

In this paper the authors ask themselves, how does the current generation of international students view the STM? Are they satisfied with the quality of the service that they receive? And what are the main areas that can be improved?

A survey was conducted with Concordia University international students about their usage and quality perceptions of the green metro line, the orange metro line, and the 165-bus route. The results were analyzed using SERVQUAL, SERVPERF, and IPA methods, then cross analyzed to see which of these metro and bus lines provided the highest quality for the rest to benchmark and which areas could and should be improved.

15 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

[www.igi-global.com/chapter/a-hybrid-approach-based-on-servqual-servperf-and-ipa-for-measuring-transit-service-quality/241339](http://www.igi-global.com/chapter/a-hybrid-approach-based-on-servqual-servperf-and-ipa-for-measuring-transit-service-quality/241339)

## Related Content

---

### Pharmaceutical Development Process

Yaashikaa Ponnambalam Ragini (2019). *Global Supply Chains in the Pharmaceutical Industry* (pp. 133-157).

[www.irma-international.org/chapter/pharmaceutical-development-process/216209](http://www.irma-international.org/chapter/pharmaceutical-development-process/216209)

### Identifying the Key Success Factors in Strategic Alignment of Transport Collaboration Using a Hybrid Delphi-AHP

Yasanur Kayikci, Michael R. Bartolacciand Larry J. LeBlanc (2018). *Contemporary Approaches and Strategies for Applied Logistics* (pp. 1-36).

[www.irma-international.org/chapter/identifying-the-key-success-factors-in-strategic-alignment-of-transport-collaboration-using-a-hybrid-delphi-ahp/196921](http://www.irma-international.org/chapter/identifying-the-key-success-factors-in-strategic-alignment-of-transport-collaboration-using-a-hybrid-delphi-ahp/196921)

### Construction of New Circulation Model for Green Supply Chain of Agricultural Products in China

Syed Shahid Khanand Syed Abdul Rehman Khan (2020). *Global Perspectives on Green Business Administration and Sustainable Supply Chain Management* (pp. 220-230).

[www.irma-international.org/chapter/construction-of-new-circulation-model-for-green-supply-chain-of-agricultural-products-in-china/245066](http://www.irma-international.org/chapter/construction-of-new-circulation-model-for-green-supply-chain-of-agricultural-products-in-china/245066)

### Future Trends in SCM

Reza Zanjirani Farahani, Faraz Dadgostariand Ali Tirdad (2012). *Supply Chain Sustainability and Raw Material Management: Concepts and Processes* (pp. 82-100).

[www.irma-international.org/chapter/future-trends-scm/61734](http://www.irma-international.org/chapter/future-trends-scm/61734)

### Supply Chain Efficacy in Relief Delivery

Neeta Baporikarand Frans Atshipara (2019). *International Journal of Applied Logistics* (pp. 1-19).

[www.irma-international.org/article/supply-chain-efficacy-in-relief-delivery/230983](http://www.irma-international.org/article/supply-chain-efficacy-in-relief-delivery/230983)