INFLUENCE OF BUS RAPID TRANSIT SYSTEM ON THE IMAGE OF THE CITY: TRANSMILENIO ON CARACAS AVENUE CASE STUDY

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Primero que todo, gracias a Dios. Luego, gracias a mi profesora de tercer grado, quien me enseñó el valor de la educación, y quien con su ejemplo, trabajo, amor y dedicación me mostró el valor de la vida misma. Quiero agradecer a Johana Rivera, quien me acompañó en estas largas horas de trasnocho, me empujó, me animó a caminar a pesar del cansancio y me brindó su ayuda sin objeción en todo lo que necesité.

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ABSTRACT

In December 2000, the city of Bogotá opened the first line of their Bus Rapid Transit (BRT) system, TransMilenio. This new system marked a milestone in transportation and urban design in the city. One of many aspects that popularized the system was the perceived positive change it did on the image of the city for its own and the country’s residents. Suddenly, the city became the focus of international attention and was publicly praised for its modern transportation system and urban design. The image of the city is defined, as the subliminal combination of the perception of the physical environment and the emotions is the point where the physical and the emotional sensations converse when perceiving any specific location (Kavaratzis 2004; Smith 2005; Jorgensen, 2015). With the use of archive and content analysis, 340 articles, 170 articles before the implementation of TransMilenio—from 1991 to 2000—, and 170 articles after—from 2001 to 2010—, stratified in groups of 17 articles per year, were analyzed to quantify and qualify the type of positive or negative change suffered after the implementation of TransMilenio. It was found that there were positive changes in elements of the physical and emotional realms directly related to the influx of visitors to an area. In the physical realm there were improvements in business, traffic, and handicap accessibility, while in the emotional realm, there were improvements in entertainment, harmlessness, and aesthetics. Simultaneously, those elements that suffered negative changes are also related to the same phenomenon of people influx: collisions and infrastructure in the physical realm, and crime and protests in the emotional realm.

However, the change could not be considered definitive enough to conclude that the positive change in the image of a place is the solely a result of the implementation of
BRT systems. Environmental and historical factors, public expectations, and political promises play as much of a role in forming the image of the city when analyzing the role of new BRT systems in changing the image of the city.
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CHAPTER 1

INTRODUCTION

Statement of Problem

Can the improvement on the image of a city be a direct consequence of the implementation of a Bus Rapid Transit (BRT) system in a city?

Introduction

Bogotá, Colombia’s capital city, with a population, according to the latest census in Colombia, of a little over 7 million (Departamento Administrativo Nacional de Estadística, 2010), went through a dramatic transformation during the first decade of the 21st century. The city went from what was considered “not a good place to live” (Beckett and Godoy, 2009), to a city praised for its positive transformation, social programs, and, overall, for its public transportation revolution.

On December 18, 2000, the city inaugurated TransMilenio, the first Bus Rapid Transit system in the country (TransMilenio, 2016), and its first major public transportation intervention since the 1940’s (“Historia del Proyecto del Metro” 2011). TransMilenio was an intervention that revolutionized Bogotá’s public transportation. Its implementation brought major urban design transformation along its path in the city, which coincided with a boost on the perception of a more positive image of Bogotá. Newspaper’s articles, magazines, and scholar publications with positive views of the city started appearing in Bogotá and around the world. Bogotá had turned into a reference for subsequent BRT implementations worldwide.

With the use of archival analysis of newspaper articles from 1991 to 2010, the image of the Caracas Av was evaluated based on the concepts of physical and emotional
realms that conform the image of the city. The articles were coded based on themes inside each of the realms and evaluated on their tone to be either a positive or negative.

Each realm was divided into collisions, business, traffic, maintenance, handicap accessibility, and infrastructure for the physical realm; and entertainment, crime, street life, homelessness, protests, and aesthetics for the emotional realm. Then, it was determined whether there was an improvement or a decline in the image of the place for that component.

The study found a positive change in the image of the city after the implementation of TransMilenio on those elements in both realms related to the influx of visitors to the area. However, the improvement could also be consequent with the normal evolution of a primary road in of a growing city, therefore, closely related to the physical and historical context of the area.

Hence, it is not possible to determine with certainty that a positive change in the image of a city is a direct consequence of the implementation of a Bus Rapid System.
CHAPTER 2
LITERATURE REVIEW

The Image of The City

In 1960, Kevin Lynch defined the image of the city from a physically deterministic point of view. “[F]or Lynch, ‘image’ appears to essentially mean the very easy recognition of a highly unique specific location or thing” (Tveter, 2008). Since then, Lynch’s five elements of the image of the city were employed as the basis for understanding and analyzing cities. The image of the place had been defined by “the uniqueness it represents in three different dimensions: identity, structure, and practical or emotional” (Tveter, 2008). Departing from here and in that order of ideas, the image of the place can be seen as “[t]he sum of believes, [sic] ideals, and impressions people have towards a certain place” (Katler et al on Avraham, 2004).

The image of the city is a relatively new concept that popularized under Kevin Lynch’s paradigm, but which has evolved out of the urban planning realm to the marketing one, or more specifically, to the city marketing or the city branding realm (Hospers, 2009). Smith (2005) mentions, “in recent years municipal authorities have initiated more extensive, and yet more subtle, attempts to manipulate city images. As Hubbard asserts, ‘increasing budgets are being set aside for image construction and advertising,’ not only to extol the virtues of a city, but to reimagine or reinvent it. Researchers have approached this phenomenon as a . . . mode of marketing (Fretter 1993).”
Eli Avraham (2004) on Media strategies for improving an unfavorable city image moves on to cite Katler (1990) who describes the image as “simplification of large number of associations and pieces of information related to a place.”

Avraham continues enumerating different factors used to determine the image of the city: city population, city’s crime rate, socioeconomic status, number of national institutions located in the city, historical background, media coverage, city’s atmosphere, entertainment options, tourist or cultural value, physical appearance, and cleanliness or aesthetics.

Andrew Smith (2005) citing Gartner conceptualizes the image of the city in two dimensions: a cognitive dimension that relates to known facts about the city, and an affective dimension related to how a person feels about the city.

Both dimensions are, then, incorporated into what Smith calls, “Synecdoche” (2005): a built element that is memorable such as the city skyline, or representative buildings like the Eiffel Tower in Paris or the Golden Gate Bridge in San Francisco. Hospers (2009) emphasizes on this memorable characteristic of the synecdoche by reminding us, “[Kevin] Lynch and [John] Urry suggest how important it is [when reading the image of the city] to identify objects or occasions in the urban landscape that can be photographed.”

City images are formed “based on factors that are central and important in a relation between a person and the city” (Laaksonen et al, 2006). Studies have found nature, the built environment, culture, and industry to be these common factors (Laaksonen et al, 2006).
Therefore, Laaksonen et al (2006) moves to describe how the image of the city is analyzed within three levels, the observation level, the evaluation level, and the atmospheric level. The observation level comprises “themes to which perception is attached to” (Laaksonen et al, 2006). However, this observation is pure image, and no attitudes are attached to it. Here is where nature, the built environment, culture and the industry are observed.

The second level, the evaluation level is where attitude is attached to the observation. The evaluation is based on the perception of good or bad, positive or negative.

Then, on the third level, the atmospheric level, is where the subjective impression of the city is formed (Laaksonen et al 2006).

Moving back to the urban planning field, J. Nasar (1990) presents three aspects of the evaluative image: identity, location, and likability. The first element asks what salient elements are in the city or the “synecdoche” (Smith, 2005). The second element, where this synecdoche is located, which relate to Laaksonen et al.’s observation level. Finally, the third element relates to Laaksonen et al.’s evaluative atmospheric level.

Nasar (1990) concludes by stating, “[i]t seems likely that public evaluations of imaginable elements will define the perceived visual quality of the city.” In other words, and tying this assertion to Kevin Lynch’s three dimensions of the image mentioned before, the emotional element of the perception process is a determinant of the definitive image of the city—a process that begins with the physical environment, but that is shaped and culminated on the emotional realm.
Kavaratzis (2004) puts this in other words when he states that “an image is the result of various, different and other conflicting messages sent by the city and is formed in the mind of each individual receiver of these messages separately.” Or, in Hunt’s words “place image [is] the total set of impressions of a place, or an individual’s overall perception” (Jorgensen 2015).

This brings us to Kavaratzis’s (2004) two cities paradigm. Kavaratzis divides the city into two entities that exist within, the external and the internal cities. The external would be Gartner’s cognitive dimension, the synecdoche—the built physical environment.

The internal, on the other hand, is the “city of the mind,” Gartner’s affective dimension. This part of the city is where the social inclusion and exclusion, lifestyle, diversity, and multiculturalism’s complex and ambiguous messages overlap (Kavaratzis, 2004).

Now, it is in the interaction or the intersection of both parts where the perception of the city is formed. “It is the city image indeed” (Kavaratzis, 2004). Kampschulte on Kavaratzis (2004) says, “The image of the city is best described as the link between real, objective space and its perception.” A communicative process that begins at the landscape—urban design, architecture, public art, heritage planning—, infrastructure—projects that give character to the city—, and the behavioral—the city leader’s vision—levels (Kavaratzis, 2004).

To sum up, the image of the city is defined at the juxtaposition of the physical and emotional perceptions of the city (Jorgensen 2015; Kavaratzis, 2004; Nasar, 1990; Laaksonen, 2006; Gartner, 1996). The city image is formed from the physical elements to the immaterial elements that the individual perceives at the time is reading the space.
Both, material and immaterial elements arrive at the reader filtered through the lens of ideals, preconceptions, education, previous knowledge, and expectations with which each person arrives at a place. In that order of ideas, the literature shows us that each author divided the physical and emotional realms into different attributes that described the different qualities that gave each place its own image.

In table 2 below are each of the attributes employed by the different scholars above classified based on the realm each of them belonged to. The author did not create this classification as each scholar made clear in their writings that each of the attributes they mentioned corresponded to some form of either physical or emotional group. The author only limited himself to putting together under the same table all the concepts discussed above.

Table 1

*Realms for the Image of the City*

<table>
<thead>
<tr>
<th>Realm</th>
<th>Jorgensen</th>
<th>Kavatzis</th>
<th>Nasar</th>
<th>Laaksonen</th>
<th>Gartner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>Tangible Quality Impression Promotion</td>
<td>External - Landscape - Infrastructure</td>
<td>Identity Location</td>
<td>Observation level - Built Evaluation level - Good vs. bad</td>
<td>Cognitive - Known facts about the city</td>
</tr>
<tr>
<td>Emotional</td>
<td>Intangible Awareness Heritage Image Personality Reputation Confidence</td>
<td>Internal - Social inclusion and exclusion - Lifestyle - Diversity - Multiculturalism</td>
<td>Likability</td>
<td>Atmosphere level - Subjective impression of the city</td>
<td>Affective - How they feel about the city</td>
</tr>
</tbody>
</table>
Bus Rapid Transit

Bus Rapid Transit, BRT, is defined as a system of buses with some of the characteristics of rail systems such as exclusive road lines, or separation of traffic, level access between the station and the bus, enclosed stations, off-bus fare collection, and specialized infrastructure (Hensher and Golob, 2004; Lindau, Hidalgo, and Lobo, 2014). However, contrary to rail systems, BRT’s have operating flexibility, and a low cost of construction (Deng and Nelson, 2011). “BRT, like other forms of mass transit, can provide a high-capacity, high frequency service” (Deng and Nelson, 2011).

Borrowing from Deng and Nelson (2011) who cite Levinson et al (2003), BRT’s are composed of running ways on which “BRT vehicles operate primarily in exclusive transit. . . . [Although, they] may also operate in general traffic.” They are also composed of stations “ranging from enhanced shelters to large transit centres;” vehicles with “high capacity;” services in “high-frequency;” route structure using “simple, often colour-coded routes;” fare collection done “pre-boarding . . . [allowing for] multiple door boarding, therefore, reducing time in stations;” and Intelligent Transportation Systems that “include automatic vehicle locationing systems, passenger information systems, and traffic signal preference at intersections.”

The BRT concept can be found as back as 1939 with the “first exclusive bus lane” service in Chicago (Deng and Nelson, 2011). However, the “modern concept of BRT” with “feeder bus services, . . . well designed ‘tube’ stations, . . . [and] 25-metre long buses operat[ing] on median exclusive busways” (Dent and Nelson, 2011) was first developed in Curitiba, Brazil, in the 1970s.
The popularization of BRT did not occur until the first decade of the Twentieth-First Century. After Curitiba, Quito implemented its BRT system in 1995, and Bogotá in 2000. However, it was Bogotá’s success that brought global attention to BRT, and after Bogotá there was “Los Angeles (2000), Mexico City (2003), Jakarta (2004), Beijing (2005), Istanbul (2008), and Guangzhou (2010),” (Hidalgo and Gutiérrez, 2013) just to mention a few. By 2011, there were 120 cities with BRT systems in every continent mobilizing an estimate of 27,060,546 passengers per day–see table 3 for the regional distribution of BRT’s in the world (Hidalgo and Gutiérrez, 2013).

Table 2

Regional distribution of BRT and bus corridors as of January 2011

<table>
<thead>
<tr>
<th>Region</th>
<th>Cities</th>
<th>Corridors</th>
<th>Km</th>
<th>Stations</th>
<th>Buses</th>
<th>Passengers/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>3</td>
<td>3</td>
<td>62</td>
<td>93</td>
<td>463</td>
<td>390,000</td>
</tr>
<tr>
<td>Asia</td>
<td>33</td>
<td>85</td>
<td>1,306</td>
<td>1,658</td>
<td>6,590</td>
<td>6,289,531</td>
</tr>
<tr>
<td>Europe</td>
<td>25</td>
<td>32</td>
<td>291</td>
<td>609</td>
<td>781</td>
<td>629,369</td>
</tr>
<tr>
<td>Europe/Asia</td>
<td>1</td>
<td>2</td>
<td>43</td>
<td>33</td>
<td>300</td>
<td>700,000</td>
</tr>
<tr>
<td>Latin America and the Caribbean</td>
<td>33</td>
<td>91</td>
<td>1,345</td>
<td>2,717</td>
<td>19,239</td>
<td>17,691,945</td>
</tr>
<tr>
<td>Oceania</td>
<td>5</td>
<td>12</td>
<td>324</td>
<td>142</td>
<td>1,411</td>
<td>345,800</td>
</tr>
<tr>
<td>USA and Canada</td>
<td>20</td>
<td>57</td>
<td>993</td>
<td>1,485</td>
<td>1,993</td>
<td>1,013,901</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
<td>282</td>
<td>4,364</td>
<td>6,737</td>
<td>30,777</td>
<td>27,060,546</td>
</tr>
</tbody>
</table>


BRT’s have demonstrated to support a ridership comparable to that of rail systems. For instance, TransMilenio in Bogotá “can carry up to 45,000 passengers per hour per direction which is greater than many rail based systems” (Deng and Nelson, 2011).
Additionally, due to its flexibility and low cost of construction—“4-20 times less than an LRT [Light Rail Transit] system and 10-100 times less than a Metro [Heavy Rail] system” (Wright and Hook, 2007 on Deng and Nelson, 2011), “BRT has been considered as an immediate, practical and affordable solution to traffic problems” (Deng and Nelson, 2011) and a preferred alternative to expensive mass transportation modes such as heavy and light rail for low-income countries, especially in Latin America. However, this phenomenon has not being limited to Latin America. North America, South-east Asia, China, Australia, Africa, India, and Europe have implemented BRT systems (Deng and Nelson, 2011). “BRT has emerged as a leading mode of urban passenger transit” (Deng and Nelson, 2011).

Now, research has been conducted on multiple benefits of BRT’s, ranging from road safety, health benefits, property price increase, and transit oriented development catalyzing, to traffic decongesting, and ridership improvement (Vecino-Ortiz and Hyder, 2015; Bocarejo, Portilla and Pérez, 2012; Heres, Jack and Salon, 2013; Munoz-Raskin, 2009). However, BRT is much larger than the transportation sector, it could also change the image of the city, and there’s not been much research, if any, on the possible impact of BRT’s on the image of the city. In the workshop 2 report of the 13th Thredbo Conference, Oxford 16-20th September, 2013, dedicated to issues related to Bus Rapid Transit, “It was noted that . . . especially in developing and emerging countries, BRT is often a stimulus of change . . . Thus, BRT needs to be viewed as more than [emphasis added] a transportation mode, and as powerful agent of transformation for urban transportation” (Finn and Muñoz, 2014).
CHAPTER 3

STUDY CONTEXT

Bogotá is the largest and most populous city in Colombia, with a population, according to the latest census, of little over 7 million (Departamento Administrativo Nacional de Estadística, 2010), and a density of about 20,500 inhabitants per square kilometer (Bocarejo et al., 2013). Bogotá is the country’s capital city where all three branches of the national government seat, and also, where the largest urban population of Colombians reside. Bogotá is the most industrialized city in the country, and a city of immigrants where 38.6% of its population was born in a different city of Colombia (Departamento Administrativo Nacional de Estadística, 2010).

During the late 1990’s, Bogotá enjoyed a cultural transformation that laid the basis for a string of urban transformations lead by a chain of progressive city administrations. New state-of-the-art libraries, public schools, and subsidized housing projects were popping up throughout the entire city thanks to major investments by the city administration. While the city was going through great transformation, it was, then, time to take on the long overdue public transportation system, which in Mayor Enrique Peñalosa’s words (2011), “[was] a disaster . . . [The buses were] old and in poor condition, crowded to the point where people would hang out of the open doors; madly racing against each other they were often the cause of fatal accidents, or mired in traffic and hardly moving.”

Bogotá, Colombia’s capital city, was moving from being a city considered “not a good place to live,” (Beckett and Godoy, 2009) to a city praised for its positive transformation, social programs, and, overall, for its public transportation revolution.
Now, in spite of the long-lived dream of a rail system for the city, which had been promoted since the 1940’s (“Historia del Proyecto del Metro”, 2011), based on studies made under the Castro and Mockus administrations, and on recommendations from the Japan International Cooperation Agency, which deemed the Metro as an unviable alternative–too-expensive and a short-lived solution that would require in 10 to 20 years of another line–, the administration of Mayor Enrique Peñalosa incorporated a Bus Rapid Transit (BRT) system, called TransMilenio, on the city’s master plan, and on the administration’s Plan de Desarrollo (Development Plan) (TransMilenio, 2016). The system’s main objectives were to reduce traffic congestion, pollution, and trip duration, and it was mainly based on Curitiba’s BRT (Parra et al., 2007, and Peñalosa, 2011). TransMilenio was, by then, the largest BRT system to be implemented in Latin America (Mejía-Dugand et al., 2013).

On December 18, 2000, TransMilenio began with 42.4 km, and 3 corridors (Gilbert, 2008). By 2011, the system had 84 km of dedicated bus lines, and over 600 km of feeder lines (Hidalgo et al., 2012). Today, the system is composed of 12 lines with 115 km of dedicated bus lines, and a system of more than 600 km of feeder lines at its end-terminals with buses that circulate through surrounding neighborhoods (TransMilenio, 2016).

Since the implementation of the system, TransMilenio has had to compete with the traditional bus system, which continued operating throughout the city. Even though all the old buses were removed from the roads where TransMilenio operated, old buses still operated parallel to TransMilenio on streets that were, sometimes, less than 100
meters from the BRT’s main lines; therefore, giving users the alternative to use the old and cheapest system towards their destination.

Regardless, TransMilenio was an instant success. It became the BRT system with the largest ridership in the world with more than 40,000 passengers per direction per hour, even surpassing Metro systems like Sydney’s (Bocarejo et al., 2012, Hensher and Golob, 2008). All that at a fraction of what a Metro system could cost per kilometer – $5-20 million per kilometer compared to $30-160 million per kilometer for rail systems (Hensher and Golob, 2008).

TransMilenio not only brought improvements on the ridership, cleanliness of buses, reduction of travel times—which declined substantially—, reduction of transit-related accidents, and a “measurable reduction in air pollution along TransMilenio corridors” (Heres et al., 2013), but also better public spaces along the buses corridors and terminal stations thanks to the renovation of urban areas in the proximity of the system (Munoz-Raskin, 2009; and Bocarejo et al., 2012). TransMilenio also enjoyed of crime rate reduction of up to 86% in the walking proximity to the Caracas Av. trunk corridor—one of the main vehicular and commercial arteries of the city (Munoz-Raskin, 2009). “Since its implementation, TransMilenio has shown a transforming potential in the areas surrounding terminal stations, which makes it possible to build commercial areas and other developments that previously had no place in peripheral zones of the city” (Bocarejo et al., 2012).

All these improvements could not pass unnoticed in a city where 73% of households do not own cars, and 72% are commuters (Heres et al., 2013). “In the Bogotá Como Vamos [Bogotá, How are we doing?] survey of 2001, TransMilenio received an
approval rating of 4.64 (out of 5),” and “Ex-Mayor Mockus argue[d] that TransMilenio contributed greatly to the general public’s improved feeling about the city” (Gilbert, 2008).

TransMilenio also turned Bogotá into a referent for BRT’s, not only throughout the country, where 4 cities—Cartagena, Bucaramanga, Pereira and Cali—immediately followed and started their own BRT projects (Mejía-Dungand et al., 2013), but also around in Latin America with cities in Guatemala, Venezuela, Brazil, Argentina, Mexico, Ecuador, Peru and Chile implementing BRT’s in some of their cities (Mejía-Dungand et al., 2013), and around the world where “[t]he influence of Bogotá has been particularly relevant: the TransMilenio BRT system [became] the most powerful BRT reference for planners and practitioners worldwide” (Gutierrez, 2010 in Hidalgo and Gutierrez, 2013).

TransMilenio had transformed the face of the city, turned it into a global referent, and helped change people’s perception of the city they were living in (Gilbert, 2008; Heres et al., 2013; Munoz-Raskin, 2009; and Bocarejo et al., 2012).

**Area of Study**

The area focus of this investigation is the Caracas Av in Bogotá. Caracas Av is one of the few streets that currently go across the entire city from south to north, and by 2001, when TransMilenio started, was the only major street that did so.

Bogotá is the capital city of Colombia, and it sits at 2,625 meters above the sea level, on the oriental mountain range of the Colombian Andes. The location of Bogotá puts it at more than 1,000 km from the nearest coast, whether the Pacific Ocean or the Caribbean. Bogotá has an extension of approximately 33 km North to South, and 16 km West to East (*Alcaldía Mayor de Bogotá*, 2015).
*Troncal* Caracas or Caracas Avenue is a street located on the East side of the city and connects the neighborhoods in the south with the city’s downtown, and the north of the city. It has a length of 18 km, and it’s a major artery of communication between city residents with the majority of the work offer, services, municipal institutions, universities, shopping centers, and most important retail centers in Bogotá, located on the east side of the city, which Caracas Av. cuts right through.

The avenue was planned in the second half of the twentieth century and marked the growth path of the city from its downtown outwards towards the north. However, not until the late eighties, was there a continuous path between the north and the south of the city. Therefore, all traffic between those two parts of the city had to go through the city’s downtown, and travel through multiple roads. In the 1980’s, the city government decided to develop Caracas Av. as the main avenue to connect north to south passing adjacent to the city’s downtown. To do so, the city proposed the design of what was given the name *Troncal*. An avenue designed then to be 100 meters wide, and have 8 lines of traffic, 3 lines in each direction for mixed vehicular traffic, and 1 line in each direction exclusively for public transportation buses.

This project was executed during the 1990’s not without multiple inconveniences and way over budget. However, after inaugurated, the project was not a success for the city, and it did not solve one of the greatest problems with the avenue’s traffic: the under-regulated, disorganized, almost anarchic, chaotic public transportation system that used the road. Caracas Av. for a long time was considered a failed public investment, and sometimes, even a shame for the city.
Caracas Av. was the first avenue designed in Bogotá with the concept of mass transit in mind. The initial design of the Troncal incorporated the segregation of buses and private vehicles. Troncal Caracas was the first street in Colombia designed with lines dedicated exclusively for public transportation even though Troncal Caracas did not incorporate at its conception a unique service provider for the bus service.

Av. Caracas is also known as Troncal Caracas, calle Caracas, la Caracas, and Caracas. Those terms will also be used interchangeably throughout the study as a reflection of how the same road is referred to by Bogotá’s citizens and on newspaper articles.

Figure 1. Study Area – Bogotá, Colombia, and Caracas Av.

Source: Instituto Geográfico Agustín Codazzi
Figure 2. Caracas Avenue

Source: El Tiempo Newspaper

Figure 3. Caracas Av. and Calle 53

Source: El Tiempo Newspaper
Figure 4. Caracas Av. and Calle 28 South, 1992

Source: El Tiempo Newspaper

Figure 5. Caracas Av. and Calle 28, South 2014

Source: El Tiempo Newspaper
Figure 6. Caracas Av and Calle 49, 1995

Source: El Tiempo Newspaper

Figure 7. Caracas Av. and Calle 49, 2014

Source: El Tiempo Newspaper
CHAPTER 4

METHODOLOGY

Bus Rapid Transit systems bring to their host city both the benefits of rail systems and the economy and flexibility of bus systems (Deng and Nelson, 2011). There is extensive literature that demonstrates many of the benefits of BRT’s: congestion reduction, faster travel speed, passenger comfort, health benefits for users, pollution reduction, and an increase in property values in areas adjacent to the system. With the use of archive analysis of newspaper articles, this research is set to determine the impact TransMilenio had on the image of the city.

The Av. Caracas was used as case study to limit the findings to a very specific area of the city.

Methodology

This research was done through a pre/post archival analysis, which is defined as “the locating, evaluating, and systematic interpretation and analysis of sources found in archives” (Corti, 2004).

The data for this study was acquired from the newspaper El Tiempo and the magazine Semana’s online archive dating from 1991 to 2010. As the method is based on the availability, curating, and preservation of the archive, there is the possibility that not all the articles published at that time by the newspaper and magazine can be found, that the database’s keyword classification can be inaccurate (Corti, 2004), or that the retrieved articles will not reflect the same hierarchy as they had when published. For instance, an article on the front page does not have the same impact and prominence as an article published on the last page of the newspaper.
In addition to archival analysis, content analysis was the methodology used to analyze the retrieved articles.

Content analysis is a qualitative method of analysis used for “testing hypothesis” (Bernard, 2000). The main steps for content analysis are the creation of a set of codes or dictionary, application of those codes to the text, and analysis of the resulting matrix statistically (Bernard, 2000). Research done through content analysis focuses on the “characteristics of language as communication with attention to the content or contextual meaning of the text” (Hsieh and Shannon, 2005).

There are three different approaches to content analysis. The first method is the conventional content analysis, or the inductive content analysis, which starts the study from the observation level, then moves to define the codes during the data analysis–open coding, deriving the codes from the data itself (Hsieh and Shannon, 2005; Elo and Kyngäs, 2007). When employing this method, the researcher’s first step is to organize the data through coding or categorizing. “Open coding means that notes and headings are written in the text while reading it” (Elo and Kyngäs, 2007). Many readings as necessary are performed.

After the open coding process, the categories are grouped into larger categories that share the same theme until it is not possible to have categories belonging to more than one group. “However, . . . creating categories is not simply bringing together observations that are similar or related; instead, data are being classified as ‘belonging’ to a particular group” (Elo and Kyngäs, 2007).
Then, the abstraction task is performed in which a general description of the research topic is formulated. The abstraction results in a single main category that defines the result of the analysis (Elo and Kyngäs, 2007).

The second method is the directed content analysis or deductive content analysis. On this method, the study starts with an established theory. The codes, in this case, are defined before and during the data analysis. The codes are derived from the theory or relevant research findings (Hsieh and Shannon, 2005; Elo and Kyngäs, 2007). The major problem with this approach is that, since the coding starts with a known theory, researchers can arrive biased at the analysis. Therefore, “researchers might be more likely to find evidence that is supportive rather than nonsupportive [sic] of a theory” (Hsieh and Shannon, 2005).

After the categorization matrix is developed based on the existing theory, the data is reviewed for content and coded corresponding to the developed categorization. Using an unconstrained matrix allows for the addition of more categories as the analysis evolves. However, “if the matrix is structured, only aspects that fit the matrix of analysis are chosen from the data” (Elo and Kyngäs, 2007).

The third, and last method, is summative content analysis. This method employs keyword analysis of the text. Keywords are identified before and during the analysis. In this method, the keywords can be derived from the interest of the researcher, or from the review of the literature. This “approach . . . is fundamentally different from the prior two approaches . . . [in which] the text is approached as single words or in relation to particular context. An analysis of the patterns leads to an interpretation of the contextual meaning of specific terms or content” (Hsieh and Shannon, 2005).
The final step for the content analysis, without regard to the approach chosen above, is the report of the analysis and results, which is the equivalent to reporting the “model, conceptual system, conceptual map or categories” (Elo and Kyngäs, 2007) developed in the study.

For the present study, the researcher employed the directive, deductive approach because the researcher departed from the theory defining the image of the city. Then, the researcher cataloged each of the sampled articles based on the predefined categories that the literature review suggested defined the image of a city.

**Unit of Analysis**

The study’s unit of analysis is the newspaper article.

**Data Source**

In this archive analysis, I focused on newspapers articles published in *El Tiempo* and *Semana*. The selection of these publications was based on their large readership and their popularity within the country.

*El Tiempo* can be considered the most important newspaper in Colombia. It is based in Bogotá, but it is published nationwide. The editorial design of the newspaper is of a national newspaper that also focuses on Bogotá. Although it is not the only newspaper in Colombia, it is the newspaper with the largest publication, and one of the two major newspapers that has a searchable online database of articles since 1990. *El Espectador*, the other major Colombian newspaper, only publishes articles from 1999 forward on its online archive.

The secondary source of data is *Semana*. It is a weekly magazine that publishes opinion columns and news articles focused on the country’s current events. *Semana* and
El Tiempo are both highly regarded sources of serious and formal news in Colombia.

There are other sources of news, but some are considered either biased, or sensationalist; or they just have low readership or are too specialized on their niche. Drawing a parallel between American and Colombian newspapers, El Tiempo could be compared to The New York Times, while Semana with Time Magazine.

**Time Frame**

The content analysis was made to articles published between 10 years before, and 10 years after the inauguration of the TransMilenio system in order to have a historic symmetry on newspaper articles publishing before and after the beginning of the system. Since TransMilenio started on December 18, 2000, the study timeframe is from January 1991 to December 2010.

**Sampling**

The study’s population was all the articles in El Tiempo and Semana pertaining to the Caracas Avenue in Bogotá. Only those articles that mentioned something that directly involved Caracas Av. were selected.

The total amount of articles retrieved for the study is 2,685 articles (See table 4).

**Table 3**

*Articles count per year division by before and after TransMilenio*

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Year</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>113</td>
<td>2001</td>
<td>186</td>
</tr>
<tr>
<td>1992</td>
<td>124</td>
<td>2002</td>
<td>117</td>
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<tr>
<td>1993</td>
<td>71</td>
<td>2003</td>
<td>84</td>
</tr>
<tr>
<td>1994</td>
<td>71</td>
<td>2004</td>
<td>124</td>
</tr>
<tr>
<td>Year</td>
<td>Total</td>
<td>Year</td>
<td>Total</td>
</tr>
<tr>
<td>------</td>
<td>-------</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>1995</td>
<td>32</td>
<td>2005</td>
<td>29</td>
</tr>
<tr>
<td>1996</td>
<td>92</td>
<td>2006</td>
<td>95</td>
</tr>
<tr>
<td>1997</td>
<td>162</td>
<td>2007</td>
<td>166</td>
</tr>
<tr>
<td>1998</td>
<td>203</td>
<td>2008</td>
<td>165</td>
</tr>
<tr>
<td>1999</td>
<td>171</td>
<td>2009</td>
<td>189</td>
</tr>
<tr>
<td>2000</td>
<td>279</td>
<td>2010</td>
<td>212</td>
</tr>
<tr>
<td><strong>Total Before</strong></td>
<td><strong>1,318</strong></td>
<td><strong>Total After</strong></td>
<td><strong>1,367</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>2,685</strong></td>
</tr>
</tbody>
</table>

**Search Methodology: News Articles Gathering**

Articles with the query “Caracas -Venezuela -venezolanos -caraqueños” were downloaded from *El Tiempo*’s online archive. The subtraction of the keywords *Venezuela, venezolanos, caraqueños* was meant to avoid those news articles related to the city of Caracas, Venezuela’s capital city. All articles from *El Tiempo* were downloaded from the sections other, Bogota, opinion, politics, entertainment, and economy. The sections world, sports, Colombia, and technology were omitted because articles on those sections would be related to the city of Caracas, Venezuela rather than to the Av. Caracas.

On *Semana*’s search engine, only the keyword “Caracas” by itself could be used because their search algorithm did not allow for Boolean search queries. Instead, *Semana*’s algorithm would print articles with containing the keywords in the search field only. *Semana*’s archive search engine did not allow for the use of category filters either.
After downloaded, all articles were uploaded to an SQL database from which further articles were removed.

Using SQL queries in the database, articles with the following conditions were removed from the database:

- Articles that included the following phrases pertaining to the use of Av. Caracas as the limit of another zone:
  - desde Avenida Caracas, desde Av. Caracas, desde Troncal Caracas, desde la Caracas
  - hasta Avenida Caracas, hasta Av. Caracas, hasta Troncal Caracas, hasta la Caracas

- All mentions to the city of Caracas

- Articles that had the words below pertaining to a famous Venezuelan orchestra:
  - Billo’s Caracas Boys

- People with Caracas as the last name

- Articles that included the following phrases pertaining to the city of Caracas, Venezuela
  - Hugo Chavez (former president of Venezuela)
  - Consulado, embajada, embajador, cónsul, consular, canciller, diplomático
  - Venezuela

- Articles that referred to sports, and to soccer. There is a soccer team named after the city of Caracas Venezuela.
Articles related to the Caracas Street in Medellín, Colombia.

After the database was adjusted, a total of 2,685 articles remained.

A stratified random sample of 17 articles per year for a total 340 articles was used. The researcher’s decision to use stratified random sample was determined by the objective to have an even number of articles per year, and of articles before and after the implementation of TransMilenio for an even comparison.

**Data Analysis Methodology**

The process used to analyze the articles was human coding. For this method of analysis, a deductive approach using the sample of 340 articles was done.

As part of the pre/post archive analysis, the retrieved articles were divided into two groups. All articles before December 31, 2000, were assigned to the pre-TransMilenio group, and all the articles after were assigned to the post-TransMilenio group.

Then, a matrix of two variables was designed to codify each article: the content and the context of the article (See table 5 for the Coding matrix). The content of the article was divided according to the literature’s two realms that compose the image of the city: the physical and the emotional realms. Then, each realm was composed of six different themes that emerged from the news articles.

The context of the article was divided between a positive or a negative tone based on the perceived message, and outcome of the article. Table 4 below depicts the each of the variables and their main values.
Then, to proceed with the analysis, each realm was quantitatively and qualitatively analyzed theme by theme. First, for the quantitative analysis, the count of pre/post positive and negative articles is counted and contrasted to determine the type of change before and after TransMilenio. If the positive articles increased in quantity after the implementation of the BRT, and the negative articles decreased in quantity for the second group it was considered a positive change. On the other hand, if the positive articles decreased in number, and the negative articles increased in quantity it was considered a negative change.

If there were mixed changes, meaning positive articles increased and negative articles increased, whether the change was positive or negative is determined by the factor by which each tone varied. Therefore, if the positive articles increased by a greater factor than the negative articles, the change was considered positive. On the other hand, if the negative articles increased by a greater factor, it was considered a negative change.

Table 5 shows the quantitative decision matrix summarizing descriptions above.
Table 5

Change in the image of the city based on the quantitative change after the implementation of TransMilenio

<table>
<thead>
<tr>
<th>Number of articles after TransMilenio</th>
<th>Image of the City</th>
<th>Number of articles after TransMilenio</th>
<th>Image of the City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive ↑ and Negative ↓</td>
<td>Positive change</td>
<td>Positive ↓ and Negative ↑</td>
<td>Negative change</td>
</tr>
<tr>
<td>Positive &gt; Negative</td>
<td>Positive change</td>
<td>Positive &gt; Negative</td>
<td>Negative change</td>
</tr>
<tr>
<td>Negative &gt; Positive</td>
<td>Negative change</td>
<td>Negative &gt; Positive</td>
<td>Positive change</td>
</tr>
</tbody>
</table>

Symbols: (↑) Increase; (↓) Decrease; (>) Greater than

After the quantitative analysis, the second analysis was done based on the interpretation of the content of each article and whether or not the author considered the article’s content to be of significant change, or if the change, on the other hand, was irrelevant or to no effect.

At the end, if the qualitative and quantitative analysis coincided, the author determined whether the theme represented an increase, decrease or no change to the image of the city. Had there been a discrepancy between the quantitative and qualitative analysis, the author moved to resolve the discrepancy based on the qualitative data.

Coding the Content

In order to catalog each article, a coding dictionary was developed based on themes that evolved from the articles. Each theme was later assigned to one of the realms or attributes that compose the image of the city.
Physical Realm Themes:

Those themes attributed to the physical realm were those related to or that involved directly a physical object from the study area. There were six themes under the physical attribute:

1. Business:

   Cataloged under the physical real for it involved physical businesses such as stores, offices. Articles were coded for business when they mentioned business improvement, new business that opened in the area, employment in the area, or when there were programs by the administration promoting capacititation for new businesses. For instance, one of the articles coded for business, on July 12, 1999, *El Tiempo* published an article that mentioned “Según el director de Relaciones Externas de Gas natural, Enrique Rodríguez, en septiembre entrarán en funcionamiento cuatro nuevas estaciones de servicio en El Salitre, la Caracas con 49, la Boyacá con 13 y en la calle 80 con carrera 90,” which translates, According to the External relations director of Gas Natural, Enrique Rodríguez, in September, there will be four new service stations in *El Salitre*, Caracas with 49, *Boyacá* with 13 and in *Calle 80* with *Carrera 90*.

2. Collisions:

   They are part of the physical realm because they involve an element of the area, vehicles, that occupies a determined physical space, and whose average mass is considerably superior to that of an average human. Articles were coded under collisions when there was mention of an accident involving a
vehicle. For example, an article coded for collisions, from *El Tiempo*, May 20, 2008, read “Niña de 8 años se salvó milagrosamente, luego de ser atropellada por un TransMilenio,” which translates, 8 year old girl was miraculously saved after being hit by a TransMilenio.

3. Handicap Accessibility:

It involves the physical accessibility of a part of the city to a specific population. Articles coded for handicap accessibility were those that mentioned elements to make easier the integration of handicap people with the city. An article published on August 23, 2009 in *El Tiempo* read “Semáforos sonoros para personas invidentes Para facilitar el tránsito de personas con discapacidad visual y auditiva, entre septiembre y octubre se pondrán en servicio seis semáforos sonoros y vibratorios,” which translates to, Traffic lights with sound and vibration. To easy the transit of visual and hearing impaired people, between September and October there will be put into service six traffic lights with sound and vibration.

4. Infrastructure:

It directly pertains to the physical elements of the area that support everything else. Articles coded for infrastructure were those that mentioned any new structure being proposed, built, or removed. For example, on June 10, 1998, an article from *El Tiempo* read, “Tres son las troncales que tendrán el impulso inicial de la administración de Enrique Peñalosa; la 80 (actualmente en construccion), la Caracas (en proceso de reestructuración) y la Autopista Norte,” which translates, Three are the *troncales* that will give the initial start
to Erique Peñalosa’s administration: the 80 (under construction), Caracas (under re-estructuration), and Highway North.

5. Maintenance:

It directly pertains to the good standing of those physical elements that support everything in the area. Articles that coded for maintenance were those that mentioned current, past, or proposed maintenance, or the lack of it. For example, a August 17, 1993 article from El Tiempo read “A finales de la presente semana y luego de salvar una serie de obstáculos de tipo legal, la firma Lizcano Gutiérrez Limitada arrancará por fin con el mantenimiento de la Troncal de la Caracas,” which translates, At the end of last week, and after many obstacles, Lizcano Gutiérrez Limited will finally start Caraca’s avenue maintenance.

6. Traffic:

It not only involves vehicles but also, when seen in mass, traffic becomes a physical barrier between one side of the street and the other. Articles coded for traffic were those that mentioned problems or pointed improvements on the traffic flow, articles announcing road closures, and articles related to the use of the road and use of the public transportation. For example, a April 26, 1993 article from El Tiempo read “Un grupo de 188 agentes de Tránsito será entrenado por la Secretaría de Tránsito y Transporte, exclusivamente para cumplir las labores de control en la troncal de la Caracas,” which translates, A group of 188 transit agents will be trained by the Secretary of Traffic to exclusively perform functions in Caracas Av.
Emotional Realm Themes:

On the other hand, those themes attributed to the emotional realm were those related to feelings, perceptions, preferences, and philosophy. There were six themes under this attribute:

1. Aesthetics:

   Beauty and attractiveness are subjective elements that are based on the perception of each individual evaluating the object. The same element could be beautiful to one and, simultaneously, ugly to another individual. Articles coded for aesthetics were those that mentioned the beautification of the area, communicated any attractiveness of the area, or mentioned abandonment of the area. An example of an article coded for aesthetics, from July 27, 1994, in *El Tiempo* reads “El 6 de agosto, dia del cumpleaños de Bogotá, la Troncal de la Caracas tendrá una cara nueva,” which translates, On August 6, Bogotá’s birthday, Caracas Troncal will have a new face.

2. Crime:

   This theme groups all type of crimes and violations of the law. Although it involves an individual, crime has a component of fear, and fear is an emotion that can change the perception people have of a place, even if the crime itself was not committed against those people. Articles about any kind of crime were coded under this theme. For example, a July 10, 1995, article read “Detenidos por intento de soborno . . . de tres agentes de tránsito,” which translates, Captured because they were trying to bribe three traffic policemen.
3. Entertainment:

It is the availability of events, but those events are strictly tied to a physical element for they could be held at any place. However, to have a successful entertaining event, there must be the feeling of willingness to participate. Articles coded for entertainment were those that mentioned events taking place in the area, the area’s nightlife, or its gastronomic offer. An example of an article coded under entertainment, from *El Tiempo*, April 10, 1999, read “frente a la 72 con Caracas también se puede sentir una fuerte salivación y ganas de probar calamares en vino tinto,” which translates, In front of 72 street with Caracas you can also feel a strong salivation and desire to test the calamari in red wine.

4. Homelessness:

It was categorized under the emotional realm because people are not considered an object of the environment. Homeless people are not a physically fixed element. However, their presence in an area can draw negative emotions on visitors and others, even though, those visitors and those homeless, when compared to each other, could have similar physical characteristics. Articles coded for homeless were those that mentioned experiences related to homeless populations. An article coded for homelessness, from *El Tiempo*, February 4, 1994 reads, “La Troncal de la Caracas, una obra que le costó a los bogotanos varios miles de millones de pesos, pasó a ser la nueva calle del Cartucho,” which translates, Caracas Troncal, an infrastructure project for which Bogotans paid thousands of thousands of Pesos, became the new skid road.
5. Protests:

They were assigned to the emotional realm because they are the manifestation of non-conformism, a human emotion. Articles coded for protests were those that mentioned protests taking place in the area. An example of an article coded for protests, from *Semana* on May 28, 2004, read, “El sistema se encuentra paralizado a la altura de la calle 52 sur con Troncal de la Caracas, tras las protestas de usuarios que piden un paso peatonal,” which translates, The system is stopped at *Calle 52 south with Caracas Troncal*, thanks to pedestrian fighting for a pedestrian elevated crossing.

6. Street Life:

It was cataloged under the emotional realm because it can only be measured from the feelings a street, and its events can evoke on others. Articles coded for street life were those that mentioned street musicians, street vendors, and any day-to-day activity taking place in the street itself. An example of an article coded for street life, from *El Tiempo*, September 28, 2006, reads, “Crearían 'villa artística' donde mariachis y otros músicos [de la calle] puedan ofrecer sus servicios,” which translates, They are to create an artistic village where mariachis and other street musicians can offer their services.

Table 5 summarizes each of the realms and their components, which composed the coding dictionary.

Table 6

*Brand Image Attribute Coding Dictionary*

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Theme</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>• Business</td>
<td>• New business, business renewal,</td>
</tr>
<tr>
<td>Attribute</td>
<td>Theme</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td>Attribute</td>
<td>Theme</td>
<td>Description</td>
</tr>
<tr>
<td></td>
<td></td>
<td>more visitors to the area’s businesses, increase in job offer, diversification of business</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Establishment or existence of corporate, education, political, NGO’s headquarters</td>
</tr>
<tr>
<td></td>
<td>Rolling or settled</td>
<td>Establishment or existence of corporate, education, political, NGO’s headquarters</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Collisions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Accidents involving vehicles and pedestrians, cyclists, motorcyclists or other vehicles</td>
</tr>
<tr>
<td></td>
<td>Handicap accessibility</td>
<td>Elements that make handicap mobility through the street better and easier</td>
</tr>
<tr>
<td></td>
<td>Infrastructure</td>
<td>New projects of infrastructure proposed or built</td>
</tr>
<tr>
<td></td>
<td>Maintenance</td>
<td>Maintenance of existent infrastructure.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Planned or scheduled</td>
</tr>
<tr>
<td></td>
<td>Traffic</td>
<td>Public and private transportation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Congestion, slow traffic, traffic jams</td>
</tr>
<tr>
<td></td>
<td>Emotional</td>
<td>Aesthetics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Beautification, attractiveness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Visual and air pollution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Cleanliness</td>
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<tr>
<td></td>
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<td></td>
<td>Theft</td>
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<td>Vandalism</td>
</tr>
<tr>
<td></td>
<td>Entertainment</td>
<td>Concerts</td>
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<td></td>
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<td>Theater</td>
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<td></td>
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<td>Bars and restaurant offer</td>
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<td></td>
<td>Homelessness</td>
<td>Homeless or indigent population living on the street</td>
</tr>
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<td></td>
<td>Protests</td>
<td>Protests that interfere traffic or prevent its flow</td>
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<td>Marches</td>
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<tr>
<td></td>
<td>Street life</td>
<td>Street musicians</td>
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<td></td>
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<td>Street vendors</td>
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</tbody>
</table>

**Coding the Context**

After the article’s content is cataloged, then the article is contextualized and evaluated for its positive or negative tone. The reading of the tone is based on whether or
not the article resolves on a positive or negative outcome, or whether or not it is clear that the article’s author’s intention was to transmit a specific feeling.

Continuing with the article above, that article was evaluated as having a positive tone, even though, it was written using a neutral choice of words. Since the situation depicted in the article resolved on a positive ending without the mention of tragic or negative consequences, the article is then considered as a positive article.

On the other hand, the following article depicts a negative tone even though the greater tragedy could be avoided.

Desactivado carro bomba:

Un supuesto atentado contra el comandante de la Policía Metropolitana, general Argemiro Serna Arias, fue frustrado ayer luego de que una patrullera de tránsito alertó sobre la presencia de un automóvil abandonado, que a la postre resultó ser un carro bomba. El hecho se presentó a las 7 a.m. en la calle 6a. con carrera 30, frente a una serviteca. A esa hora, la patrullera Sandra Osorio fue a revisar un Renault 4, de placas EXG 649 y color blanco, que estaba mal estacionado y que además tenía restricción vehicular. Luego de acercarse y notar que el vehículo no tenía conductor, Osorio observó que en una de las sillas había un artefacto del que salían unos cables que se perdían en el baúl del automóvil. Ante la sospecha de que fuera un carro bomba, la patrullera avisó al comando de la Policía, ubicado 16 cuadras, desde donde se desplazó un escuadrón antiexplosivos hasta el lugar de los hechos. Luego de tender un cerco de seguridad por tres cuadras a la redonda, que causó algunas complicaciones en el tráfico, los especialistas revisaron el Renault 4 y encontraron que estaba cargado
con 200 kilos de benzoato, el mismo que se utilizó en el camión que estalló, el 17 de junio de 1997, en la estación de Policía de Fontibón. El escuadrón antiexplosivos operó por varios minutos y desactivó la carga detonante, que, según la Policía, hubiera causado destrozos en casas y negocios ubicados, por lo menos, a 500 metros a la redonda. Las autoridades indicaron que los cables que se conectaban a la carga podían ser activados a control remoto. Luego de que el escuadrón antiexplosivos superó la emergencia, la bomba fue llevada a Mondoñedo y se detonó, donde dejó un cráter de 6 metros de profundidad. En declaraciones a los medios de comunicación, Serna dijo que el lugar es de paso obligado por su caravana a esa hora, cuando se dirige a la sede de la Policía Metropolitana, ubicada en la calle Sexta con avenida Caracas. Sin embargo, el oficial ayer pasó por el sitio a las 6 a.m. pues 15 minutos después tenía una reunión con el personal de Tránsito. En la tarde, la Policía estableció que el automóvil donde estaba la carga explosiva fue robado hace un mes pero que está recién reparado, por lo que infirieron que fue preparado especialmente para el atentado (El Tiempo, 1999).

Car bomb deactivated

A presumed attack against Bogotá’s Metropolitan Police Chief, General Argemiro Serna Arias, was frustrated yesterday after a policewoman on patrol gave the alert of the presence of an abandoned car, that, to top it off, it ended up being a car bomb. The fact happened yesterday at 7 am on 6 St with 30 St, in front of a car repair shop. At that time, the policewoman Sandra Osorio went to check on a Renault 4 with license plates EXG 649 and white color that was wrongly parked, and that had a vehicular restriction. After
getting close to the vehicle and noticing that the car did not have a driver in it, Osorio observed that on one of the back chairs there was an object from which some cables were connected to the car’s trunk. Due to the suspicion that the car could possibly be a bomb, the policewoman called the police station located 16 blocks from where a bomb squad departed towards there. . . . The bomb squad was able to deactivate a bomb that could have caused much damage several blocks around. In declarations to the media, Serna said that the location of the bomb was forced path towards the police main station on 6th St. and Caracas Ave. However, the officer went through this location at 6 am since 15 minutes later he had a meeting scheduled (El Tiempo, 1999).

As it can be seen, the bomb was defused and the greater tragedy avoided. However, the negative feeling linked to a terrorist attack and the anxiety inherent to terrorism leaves a negative feeling in the air. Therefore, this article is evaluated as negative.

The objective of this analysis was to establish whether or not there was a change in the choice of tone used in newspaper articles before and after the implementation of TransMilenio. Research has studied the influence of mass media on the shaping of public opinion, and there is “strong support . . . that people infer public opinion from their own reading of media coverage.” (Gunther, 1998). On their study on public opinion, “[p]articipants who perceived unfavorable media coverage inferred more negative public opinion, whereas those who perceived favorable coverage judged that the opinions of others would be significantly more positive” (Gunther, 1998).
Face Validity Concerns

The use of newspaper articles to evaluate positive changes of any attribute, specially those attributes with a negative connotation such as crime and, may be seen as setting the study for a negative conclusion from the start because the nature itself of the newspaper is to communicate shocking, alarming, attention-gathering news, which, on a majority of times, are of negative nature. However, to counter such negative bias, the present study evaluates the articles at two levels.

First, at the coding stage, the article is evaluated based on what the author wants to communicate, and whether the author’s intention is to project a negative view, or to project a positive outcome regardless of the news reported. For example, the article discussed above– Car bomb deactivated–is based on a negative circumstance. There is nothing positive on a bomb that could have exploded leaving hundreds, if not thousands of dead people. However, there was a positive outcome from the article, which is that the bomb was defused and the greater tragedy was prevented. However, not all negative articles end up with a positive outcome, and here is where the second level evaluation occurs.

The second level is when the articles are looked at accompanied by all other articles of the same theme. There, two conclusions could emerge. First, at the quantitative level, a tendency can be discovered, and where there were many negative articles are now less negative articles. A tendency that could be associated with a positive change since there is a decline of negative, even though, there are no positive articles yet. In other words, even though the newspaper might not publish a positive article announcing the
reduction of crimes in the area, the reduction in the numbers of articles reporting crimes can be the reflection of an absence of crimes to report.

The second conclusion that could emerge is at the qualitative level. On each attribute, all articles are analyzed on their content so that the researcher can determine whether or not all negative articles receive the same weight, as some crimes are more serious than others, or some crimes might be of lesser impact.
CHAPTER 5
FINDINGS AND DISCUSSION

In an analysis attribute by attribute, the following are the findings.

Physical Realm

Table 7

*Count of Physical Realm positive and negative articles pre and post TransMilenio*

<table>
<thead>
<tr>
<th>CONTENT</th>
<th>POSITIVE</th>
<th>NEGATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PRE</td>
<td>POST</td>
</tr>
<tr>
<td>Collisions</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Business</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Traffic</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Maintenance</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Handicap Accessibility</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td><strong>Physical (Total)</strong></td>
<td><strong>42</strong></td>
<td><strong>32</strong></td>
</tr>
</tbody>
</table>

**Collisions:**

Qualitative Analysis:

There was a 100% increase in positive articles and an 84% increase in negative articles. However, the negative post-implementation articles outnumber the positive ones by 1:4.75 suggesting a negative change.

Qualitative Analysis:

Before TM, articles were more related to accidents and traffic violations.

However, there is a considerable increment on the reports of accidents after the
implementation of TM. This increment can be related to a greater use of the road by more users, and also, by the newly presence of the BRT buses themselves which were mentioned on 10 of the 19 negative articles on accidents. On a positive note, after the implementation of TransMilenio, there is the mention of programs to mitigate the adverse effects of accidents, which is not mentioned at all before the implementation of the system.

Collisions Effect on the Image of the City:

In terms of the image of the city, there was a decline. Even though the qualitative analysis shows a greater increase in the number of positive articles compared to the negative ones, the negative articles outnumber the positive by a factor of 1:4.75. Therefore, quantitatively it cannot be considered a positive change. Qualitatively, there is been an increase in the accident rate casting a shadow over the safety of the TransMilenio system.

**Business:**

Quantitative Analysis:

There was a 20% decrease in positive articles after the implementation of TransMilenio, and the negative articles remained at none suggesting a negative change.

Qualitative Analysis:

When analyzing the content of the articles themselves, there was mention of the good influence TransMilenio brought on new jobs for the area. However, no numbers were published in this regard. There is also mention of business training for 100 street musicians of the area, which signals the attention the city administration is providing to
the street business economy since the implementation of the system. It is important to consider too that Caracas Avenue has always being a commercial pole in the city.

Business Effect on the Image of the City:

In terms of the image of the city, there was an improvement. Even though there was a reduction on the number of positive articles, the news depicts an improvement on the amount of business conducted on the avenue.

Traffic:

Quantitative Analysis:

There was a 47% decrease in positive articles and a 10% increase in negative articles suggesting a negative change.

Qualitative Analysis:

There is being a positive shift of the negative views pre-TransMilenio because there is now a greater offer of public transportation. However, as the offer has increased, so has the demand. Nevertheless, the negative articles asking for greater offer are lower in number as they were before TransMilenio.

On the other hand, before TransMilenio, and possible related to the account that Caracas Av was being built, expanded, rebuilt, and the new BRT system was built, the majority of negative views on the traffic were directly related to some sort of construction taking place.

However, after the implementation of TransMilenio, there was an expansion on the variety of reasons for complaint. As opposed to a single topic dominating all negative views, now other elements were being pointed at when writing about congestion:
insufficient infrastructure, construction, events taking place on the street, and pressure Caracas Av projected onto other city streets.

It can be said that implementing the BRT system, and, by default, putting an end to all the major construction interventions on Caracas Av allowed the city to focus on other issues also creating congestion on the road.

Traffic Effect on the Image of the City:

In terms of the image of the city, there has been an improvement. Even though there is a negative conclusion arising from the qualitative analysis of the articles after the implementation of TransMilenio, the fact that after the implementation of TransMilenio there is now focus on a greater variety of topics shows that TransMilenio determined the culmination of the construction phase of Caracas Av after more than a decade of work and broken expectations.

Maintenance:

Quantitative Analysis:

There is a 71% decrease in positive articles, and a 56% decrease in negative ones suggesting a positive change.

Qualitative Analysis:

However, it’s important to highlight that, content-wise, there is a difference to what the numbers say. Before TransMilenio, Caracas Av was in need of maintenance, which was addressed by the city administration at the time. After the implementation of TransMilenio, the focus shifted towards the maintenance of the system itself bringing both positive and negative reviews on an even number. There was no change, however, in
the perception of the pavement condition and the maintenance of bus stations before and after TransMilenio.

Maintenance Effect in the Image of the City:

In terms of the image of the city, it can be said that there was no effect. There is less attention to the maintenance of Caracas Av after TransMilenio. However, some the negative aspects did not suffer any improvement between the periods.

**Handicap Accessibility:**

Quantitative Analysis:

There is a 100% increase in the amount of positive articles while the negative articles count remained at zero suggesting a positive change.

Qualitative Analysis:

There is an implementation of measures to integrate blind people into the city by the use of special traffic lights on a pilot plan.

Handicap Accessibility Effect in the Image of the City:

In terms of the image of the city, there is an improvement. TransMilenio brought many elements to incorporate the handicap population to the fabric of the city. Handicap people are a population that is often neglected in the country.

**Infrastructure:**

Quantitative Analysis:

There is a 20% reduction on positive articles and a 14% increase on the negative articles suggesting a negative change.
Qualitative Analysis:

Before TransMilenio there was a focus on finishing construction of the new Caracas Av, and getting a Metro system for the Caracas Av. corridor as the preferred public transportation system, which brought positive attention from the media. Even after TransMilenio was implemented, new construction, improvements to TransMilenio, and the desired Metro system continued drawing positive attention to the Caracas Av. However, on the negative side, the attention shifted from the need for new infrastructure for the street to the new of new infrastructure for TransMilenio manifested in negatively toned news articles because TransMilenio was seen as a too-new of a system to require more and new investments, and there was the sentiment that had the city built a rail system, many of the infrastructural needs would have been solved by the rail system since the beginning.

Infrastructure Effect in the Image of the City:

In terms of the image of the city, there is a decline. Even though TransMilenio was now supplying public transportation on Caracas Av, TransMilenio was now being the focus of negative attention because of the need of new interventions in spite of the fact that it was a recently built system.

The Physical Realm Summary:

Quantitative Summary:

There was a 24% decrease in positive articles and a 28% increase in negative articles. There were 160 articles or 47% of the sample related to the physical realm, of which 78 were before the implementation of the system, and 82 after.
Now, from the themes that composed the physical realm, 3 of them showed an improvement on the image of the city, 2 a decline and, 1 had no effect.

Discussion:

There was an improvement on those elements that serve as a pole of attraction of people to the area, and provide support to a vibrant and attractive area: business, traffic, and handicap accessibility. However, there was a negative impact in the collisions and infrastructure themes while maintenance remain with no effect.

It is possible to suggest that the negative impact on collisions and infrastructure can be justified by the fact that the new implementation of TransMilenio in the area attracted new users, therefore, putting greater pressure on the system’s capacity, and the street’s infrastructure capacity to support the greater demand. Which could suggest that the negative impact on collisions and infrastructure are more related to the unexpected success the street is having, or to a possible underestimation of the positive impacts the system could have generated in the area, rather than to the TransMilenio system being a factor of negative impact.

Therefore, in terms of the image of the city, it is possible to suggest that the system has influenced positively the physical realm of the image of the city.

**Emotional Realm**

Table 8

*Count of Emotional Realm positive and negative articles pre and post TransMilenio*

<table>
<thead>
<tr>
<th>CONTENT</th>
<th>POSITIVE</th>
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<th>NEGATIVE</th>
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<tbody>
<tr>
<td></td>
<td>PRE</td>
<td>POST</td>
<td>PRE</td>
<td>POST</td>
</tr>
<tr>
<td>Entertainment</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
Crime | 2 | 5 | 34 | 41
---|---|---|---|---
Street Life | 2 | 1 | 1 | 1
Homelessness | 0 | 0 | 3 | 0
Protests | 0 | 2 | 5 | 8
Aesthetics | 14 | 11 | 25 | 13
**Emotional (Total)** | 22 | 24 | 70 | 64

**Entertainment:**

Quantitative Analysis:

There was a 20% increase in positive articles and a 50% decrease in negative articles suggesting a positive change.

Qualitative Analysis:

The positive articles before the implementation of TransMilenio were focused on the arrival of the new BRT system. On the other hand, articles after TransMilenio focused on promoting events to attract people to the street showcasing its entertainment offer. In terms of bars and restaurants, a culinary variety was depicted in articles both before and after TransMilenio on Caracas Av. There were no articles mentioning negative aspects of bar and restaurants aspects after TransMilenio. A decrease compared to before when there were complaints because of a regulation forcing bars and restaurants to close at 1:00 AM every day throughout the city.

Now, it is interesting the contrast between a concert for homeless people in the crime-prone area "El Cartucho" before TransMilenio, and another concert for children of classic music in the same location, but this time the location was turned into a public park.
Entertainment in the Image of the City:

In terms of the image of the city, there is an improvement. The positive change in the amount of articles after the implementation of TransMilenio, and more concerts along Caracas Av. shows how the city has come to embrace the change on the street. Also, there is a change in the population target of such concerts shifting from homeless and thieves (the inhabitants of skid road "El Cartucho") to children and young students. The demolition of "El Cartucho" and its replacement with a public park also shows great signs of improvement on the image of the place since "El Cartucho" was a place famous for being the place were homeless lived, illegal drugs and weapons were sold, and kidnapped people were hidden—a place of crime that was out of the reach of the police itself.

Crime:

Quantitative Analysis:

There was a 60% increase in positive articles and a 50% decrease in negative articles.

Qualitative Analysis:

Looking at the content of the articles, police power has the same perception of weakness before and after the implementation of TransMilenio, which projects a negative image on the place. At the same time, Terrorism is a concurrent topic before and after TransMilenio. Nevertheless, terrorism is a problem that had been part of the country from many years since the 1980's.
Thefts expanded to include businesses and TransMilenio in addition to robberies on pedestrians, drivers, and theft of infrastructure elements, the latest being the greatest hit by the robberies.

On the other hand, there is an inconsistency on the treatment of prostitution at the Caracas Av. Before TransMilenio, it was said it was removed, then, after TransMilenio it was said to legal on an area over Caracas Av.

Crime in the Image of the City:

In terms of the image of the city, there is a decline. Besides a quantitative increment on the positive and negative articles, the total amount of negative articles after the implementation of TransMilenio is 1:8 times larger than the positive view. Moreover, there is a worsening on the kind of crimes after the implementation of TransMilenio generating an image of greater insecurity in the area. In addition, people have the same perception of weakness and corruption in the police before and after the implementation of TransMilenio. For instance, there is an article from El Tiempo, Julio 31, 2003, that mentions that “hay miembros de la Policía de Tránsito que cobran mordidas a los infractores para evitarles las multas, maltratan y agreden verbalmente a los conductores,” which translates, There are members of the traffic police that are charging bribes to drivers to avoid them the ticket, and they are verbally mistreating drivers.

Street Life:

Quantitative Analysis:

There was a 50% decrease in positive articles, and the negatives articles remain stable at 1 article suggesting a negative change.
Qualitative Analysis:

Street musicians continue being an important fixture on Caracas Av. before and after TransMilenio. On the other hand, before and after TransMilenio, street vendors are considered an annoyance. A compromise seeking their formalization was implemented before TransMilenio. However, after TransMilenio the city's compromise was still seen as the same annoyance and a lawsuit was brought against the city.

Street Life in the Image of the City:

No effect. Musicians were a part of Caracas Av before and after the implementation of TransMilenio and the attention the city's newspapers gave them did not depict a considerable affectation by TransMilenio. Additionally, the views the city had of street vendors did not change after the implementation of TransMilenio. They still continue being viewed as an annoyance.

Homelessness:

Quantitative Analysis:

There were no positives articles before, and there was a 100% reduction on negative articles after TransMilenio suggesting a positive change.

Qualitative Analysis:

There are no articles classified under the homeless attribute after the implementation of TransMilenio, which can be seen as a reduction of the homeless problem on the street.
Homelessness in the Image of the City:

In terms of the image of the city, there is an improvement. After the implementation of TransMilenio, the homeless population emigrated from the street, which generated a positive view towards street safety and welcoming.

**Protests:**

Quantitative Analysis:

There is a 100% increase on positive articles, but a 37% increase on negative articles, which changed from 5 to 8, unlike the positive, which changed from 0 to 2. However, there is a 2:3 ratio between the difference of pre and post articles for positive and negative views respectively suggesting a negative change.

Qualitative Analysis:

There is not a considerable change between drivers and non-drivers protesters before and after TransMilenio. There is, however, an increment on the amount of documented protests after TransMilenio. There is also the use of the street for protests with positive meanings organized by the city administration, and by school children.

TransMilenio turned into a vulnerable medium and effective weapon of protest after its implementation.

Protests in the Image of the City:

In terms of the image of the city, there is a decline. The spike on the documented protests shows how important Caracas Av turned after the implementation of TransMilenio. However, it also shows how vulnerable the city is now at a few protesters can collapse the backbone of the public transportation between north and south of the city.
Aesthetics:

Quantitative Analysis:

There was a 21% increase in positive articles and a 48% increase in negative articles suggesting a positive change.

Qualitative Analysis:

There is a reduction on negative articles after the construction of TransMilenio. It can be said that the system addressed most of the negative problems before TM since the negative articles published after the system were mostly related to the system itself.

Most of the positive articles after TransMilenio recognized the good the system did to the city and praised or defended its existence.

On the other hand, before the implementation of the BRT, TransMilenio was seen as a solution to the heavy pollution in Caracas Av. Negative attention on the articles was also given to noise pollution, even more than to air pollution. After TransMilenio, the image turned a more negative and TransMilenio was now seen as a great polluter and a focus of blame for pollution now spilled over other streets contradicting the initial positive expectations of what the system was going to bring in pollution reduction.

Aesthetics in the Image of the City:

In terms of the image of the city, there can be found an improvement on the way the news addressed articles related to the Caracas Av after the implementation of TransMilenio. This improvement, and the fact that the majority of positive articles served as a praise of the system itself, can indicate that the implementation of the BRT system generated a new positive image in the area. However, TransMilenio, which had been
expected to be the solution to air pollution, was now seen as one of the sources of air pollution.

The Emotional Realm Summary:

Quantitative Summary:

There was an 8% increase in positive articles and a 9% decrease in negative articles. There were 180 articles or 53% of the sample related to the emotional realm, of which 92 were before the implementation of the system, and 88 after.

Now, from the themes that composed the emotional realm, 3 of them showed an improvement on the image of the city, 2 a decline and, 1 had no effect.

Discussion:

Similar to the physical realm, there was an improvement on those elements that work as a pole of attraction for visitors to the area: entertainment, homelessness, and aesthetics. However, there was a negative change on crime, and protests, while street life remained with no effect.

It is possible to suggest that the negative impact on crime and protests are related to the fact that the area popularized. For one side, as there is more population in the area, it brings a greater opportunity for crimes to occur. At the same time, the popularity of the area serves as a focus of attention ideal for protests that want to create the highest impact applying the lowest amount of energy. Caracas Av. and the TransMilenio system are ideal amplifiers because all the media attention that brings the minimum interruption of the traffic flow on the street or in the system.

On the positive side, the fact that the three elements that improved the most in the emotional realm are related to the inflow of visitors to the area confirms the notion that
the system helped popularize the area, which the improvement of entertainment,
homelessness, and aesthetics support.

Therefore, in terms of the image of the city, it is possible to suggest that the
system has influenced positively the emotional realm of the image of the city.

The Image of the Caracas Avenue

The juxtaposition of the physical and emotional realms suggests that the image of
the Caracas Ave after the implementation of TransMilenio is one of a more vibrant,
popular, and crowded place than before. It can be affirmed that it became a pole of
attraction of a greater population from others areas of the city than before, possibly above
what had been projected at the time the street and the BRT system were designed.
CHAPTER 6
CONCLUSION

There was a positive change in the image of the Caracas Av after the implementation of the TransMilenio system. The image of the area changed to the image of a populous area, which serves as the pole of attraction of populations from other parts of the city. However, this study could not conclusively determine if the positive change in the image of the city was solely related to the implementation of the BRT system, or rather was the consequence of the development of a busy, strategic street of the city, and the logical evolution of this development.

One thing that this research and the analysis of all articles show is that BRT systems are part of the fabric of the city, and in consequence, they feed each other with needs and solutions.

BRT systems have the potential to impact a city in multiple layers. There is a well-established consensus that BRT systems bring improvements on mobility, environment, home prices, and even on the health of its inhabitants. However, it cannot be affirmed with the same certitude that an improvement on the image of a city is an additional direct consequence of BRT implementation in a city.

From this research, it can be concluded that the influence of BRT systems to the image of a place is closely related to the history of events previous to the implementation of the system, but most important, to the expectations of the people previous to its implementation.

TransMilenio was implemented on an avenue that was the focus of major corruption scandals and disappointment on the population. What was promised as a “fast
and organized” modern road (El Tiempo, 1991), turned into a chaotic road where every driver did as they pleased, and the traffic laws were disrespected at will. Therefore, TransMilenio had this negative feeling that was there to improve from to its advantage.

However, TransMilenio also had to its disadvantage, the overwhelming dream that Bogotá has of a Metro system of its own. A dream that has been in the minds of its citizens since the 1940’s. Therefore, when TransMilenio was implemented, it brought a sense of betrayal and disappointment on the city’s residents and the media.

In consequence, TransMilenio was the focus of mixed sentiments. Good ones because, finally, something good was improving the mobility and design of a major street in Bogotá, and bad ones because it was not the so long sought Metro system for the city.

Finally, it can be concluded that the image of the city cannot be used as a direct consequence of the implementation of a BRT system in the city. As it can be seen above, the image of the city is a more intricate emotional element that is derived from multiple dimensions and influenced as much by the system itself than by the system’s physical and historical context.

Research Limitations

Content Validity Constraints

The author recognizes a content validity concern because the data for this study was acquired from El Tiempo and Semana’s online archives. All articles retrieved are dating from 1991 to 2010. However, as the availability, accuracy, and completeness of the database from which this sample of articles was retrieved depend on the archives themselves own curating, and preservation, there is the possibility that not all the articles
published at that time by the newspaper and the magazine be available, or that the
databases’ own keyword-based search algorithm be inaccurate (Coti, 2004).

Additionally, non-textual valuable information pertaining to the article’s
placement within the publications itself is not available. This forces the researcher to
ignore key hierarchical information from the article. For further studies, the author
considers this information of great value, as it is not the same to be published on front-
page that on the last page, behind the classified ads.

**Coding Reliability Constraints**

Since the coding of all the sampled articles was done by a single coder, and there
was not a second coder against which to check for coding reliability, it is necessary to
disclaim that, even though the author tried to be as impartial as possible, previous life
experiences with the system, and Bogotá during the time of the events here analyzed
could contaminate the analysis and decision criteria used by researcher. The researcher is
Colombian born and lived in the country between the cities of Bogotá and Ibagué during
the greatest part of the implementation of TransMilenio. The author moved to the United
States in January 2007, but never lost contact with Bogotá, Colombia.
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