

FIVE YEARS DOWN THE LINE: DID ANYTHING CHANGE FOR PUBLIC TRANSPORT INTERCHANGE USERS?

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ABSTRACT

A crucial step in the process of determining more concrete notions concerning the ideal Public Transport Interchange (PTI) is to gain tangible information from the users of the PTI themselves.

Five years ago, a descriptive survey and structured questionnaires with face-to-face interviews were administered to a sample population of 1055 passengers at six destination PTI's in the Cape Metropolitan Area. These findings were presented and published at numerous occasions.

In the past few years, the City of Cape Town has initiated a series of public transport interchange upgrade projects. One of the significant examples that are included in both surveys is the Claremont PTI upgrade.

To encourage student involvement in a real life project, the potential of revitalising and repeating the survey of five years ago became one of the research focuses in the department. The primary purpose of this survey, as with the previous one, was to determine the perceptions of PTI users regarding the public transport interchange environment and by doing so; a better understanding of the existing performance failures from their perspective will be gained. Secondary to this, the opportunity to do a before upgrade and after upgrade study and to determine end-user satisfaction levels, was identified.

This paper will describe in detail the similarities and differences between the two surveys with regards to methodology, sampling technique, survey instrument, target public transport interchanges and most importantly the findings.

1. INTRODUCTION

The essential approach of the research study entitled *Public Transport Interchanges as Positive Urban Living Environments* (Verster, 2004) was to verify the validity of spatial concepts, ideas and theories as posed in historical and contemporary literature and theory on urban performance, relevant administrative and legislative context, national and international precedent studies and public opinion through a series of end-user surveys, pertaining to the quality and performance of public transport interchanges. The end-user surveys resulted in very rich, empirical information that highlighted trends and obstacles to Public Transport Interchanges (PTI's) becoming spatial entities that can contribute positively to urban living. Because this represented public opinion it was seen as a crucial contributor and indicator to understand PTI underperformance.

Because of the above and the constant *hype* around public transport issues (especially if things go wrong), the Department of Town and Regional Planning considered revitalising this topic as an opportunity to contribute to the existing debate and body of knowledge.

This paper should be considered as a partial comparative study. The reason for this, is although an identical methodology was employed, only the passenger end-user group was interviewed and only at three PTI's and not six as with the original 2004 survey. Only the data from the relevant three PTI's (Bellville, Claremont, Mowbray) was extracted from the original 2004 survey for comparative purposes.

2. THE NORMATIVE SURVEY PROCESS

2.1 Purpose of the survey

The purpose of this survey exercise was two-fold. Firstly, to test whether any changes occurred in the passenger end-user groups perceptions of the three target Public Transport Interchanges (PTI's). This was deemed very relevant in the light of infrastructure upgrades and investment occurring at the selected PTI's. The time laps of five years seemed sufficient to expect some changes in passenger insights and experiences.

Secondly, an opportunity was recognised to encourage student involvement in a real life research project of which they can be part of from inception to the publishing of findings stage. A very rich learning experience was created since additional subject-specific assignments were further developed that were completed in tandem with the survey and subsequent site visit.

2.2 Survey methodology

A crucial step in the process of determining more concrete notions concerning the ideal public transport interchange is to gain tangible information from the users of the interchanges themselves. This primary data was gathered by using the Mixed Methods Approach (Creswell, 2003:208-227). The mixed method approach is a combination of qualitative and quantitative research approaches where data collection from both forms of research is employed. This is a very useful and popular practice specifically in the social and human sciences.

The actual collection of quantitative and qualitative data from the specified end-user group (passengers) was undertaken by using a structured questionnaire. The method of administering the questionnaire was the face-to-face personal interview.

The population

The population unit that was used was the individual passenger end-user with the survey boundaries being set by the physical boundaries of the public transport interchange precinct. Care was also taken to keep the demographic detail, such as age distribution, gender and race of the 2004 sample population very similar in the 2009 sample. A further similarity is the distribution of passengers using either the bus, train or mini-bus taxi as modes of transport.

In the 2004 study, four end-user groups were identified and interviewed namely passengers, bus and minibus taxi drivers, informal traders and formal traders. In the 2009 study, emphasis was placed on only the passenger end-user group (inter-peak 09:00–15:00 on days that represented normal travel patterns, daily or occasional) because it is

argued that they perform different roles within the PTI such as passengers, pedestrians and customers, which means they experience the full spectrum of the PTI activities and thus represent public opinion best.

The final sample population consisted of 640 unspoiled questionnaires representing the passenger end-user group at three of the original six PTI's.

The sample size at the specific PTI's used in the 2004 study was duplicated to ensure statistical integrity when evaluations and comparisons are made between the 2004 and 2009 data sets.

The Sampling Technique

The identical sampling technique was followed in both surveys with the following used to guide and inform the process:

Demographic Characteristics: "The population consists of definite strata, each of which is distinctly different..." (Leedy, 1980: 118). In this study, the population is made up of all the end-users of the specific PTI, and the "strata" would be the specific end-user group i.e. the passengers.

The appropriate sampling technique for such a population is accordingly deemed to be stratified random sampling (Welman and Kruger, 2001). This method is used when there are different types of individual units within a specific stratum, such as the passenger stratum being divided in the race, age and gender units as well as their choice in mode of public transport. Stratified random sampling has the added advantage that each individual in the population has an equal probability of being selected which ensures an impartial sample (Creswell, 2003).

Intercept surveys was used, because it was found (in the 2004 pilot) that this method provides a less biased cross section of end-users. It is important to ensure as representative a sample as possible.

The Survey Instrumentation

As mentioned previously, the survey instrument used to collect data was the structured questionnaire with a face-to-face personal interview. (Refer to *Appendix 1: Passenger questionnaire*)

A combination of open and closed questions was used, with the majority being closed questions. Open questions were used at the end of the questionnaire to give the respondents an opportunity to comment on any issues that might have been missed by the previous questions or to give a more detailed response.

Training the Interviewers

This survey presented a unique opportunity for the department to obtain one of its objectives in attempting to demystify research and focussing on research activities and methodologies. The intention was to introduce an annual fieldwork day, where all staff members and every level of students are involved.

This represented unique training challenges with first, third and fourth year students having differing skill sets. This was mainly overcome by employing peer/tutor training where senior students took responsibility for a group of junior students. Fourth year students were further used as survey assistants to the lecturers (being the survey supervisors) on the day of the fieldwork.

A series of training workshops were held where topics such as survey methodology and instrumentation, background on the target public transport interchanges and how to approach and establish rapport with respondents were introduced.



Figure 1. Students and staff from CPUT's Town Planning department conducting the survey (2009).

3. THE TARGET PUBLIC TRANSPORT INTERCHANGES

In order to identify which PTI's to include in the 2004, and thus the 2009, survey, the following were used as points of departure: "...there are unifying principles that apply to all interchanges regardless of their size or purpose and that is that passengers have certain basic expectations as to how an interchange should function regardless of its size, or the volume of passengers that use it" (Transport for London Integration Department, 2001: 11) and "...best sites [destination interchanges] at which to learn the central phenomena of interest [the end-users perspective]..." (Creswell, 2003: 182).

In view of the above, it was decided that "destination interchanges" in terms of work and not so much "origin interchanges" would represent the best target PTI's from which to learn "the central phenomena" i.e. what constitutes the ideal PTI.

A destination interchange would mean an interchange where people arrive at as opposed to one where people leave from in the morning peak (Kingma, 2003). It was found that a higher concentration of activities exist around destination interchanges, which means that more can be learned from them.

The chosen PTI's for the 2009 study, namely Bellville, Claremont and Mowbray were deemed to represent destination interchanges.

BELLVILLE:

- The second largest PTI in the Cape Metropolitan Area.
- A component of the northern Voortrekker road corridor.
- Improved in major upgrade in 2002 (and subsequent smaller scale improvements such as construction of long distance minibus-taxi facility, allocation of voluntary counselling and test facility, informal trading facilities) that resulted in it being one of the prominent PTI's of Cape Town.

CLAREMONT:

- Situated in close proximity to the Main Road corridor.
- Claremont PTI serves a complex socio-economic mix ranging from high to middle to middle-low income groups.
- Completely reconstructed recently.

MOWBRAY:

- An upgraded PTI on the Main Road corridor.
- Is surrounded by an extensive land use mix with a single residential area in close proximity to the PTI.
- No upgrades, except additional loading bays for Jamie Shuttle Service (Springleer, 2010).

4. PRELIMINARY RESULTS AND FINDINGS

What follows is a synopsis of the three major elements that was found to contribute to the quality of a PTI (Verster, 2004). These elements are: Safety and Security, the Interchange Facilities and the Pedestrian Environment. This then further represents the three distinct focus areas of the questionnaire that was used.

Safety and Security

Bellville experienced a negative increase of 8% from 2004 to the 2009 results, which can be considered as very significant. This is in-line with the open-ended question where respondents had the opportunity to comment on any problematic issues they experience at the PTI. The Bellville end-users ranked Safety and Security as their major concern with 29% of respondents saying that effective security is needed. This fact was confirmed with personal observations highlighting the lack of visible security staff and/or measures.

A significant change in the individual questions for Bellville, was the response to question 2.2 "Have you ever been robbed at the PTI?" In 2004 87% of respondents answered no. In the 2009 survey only 69% of respondents answered no. This represents a difference of 18%!

Both Claremont and Mowbray PTI's shows a positive inclination with regards to safety and security with a positive increase of 10% and 7% respectively. Again, the presence of security personal was confirmed by personal observations on two separate occasions.

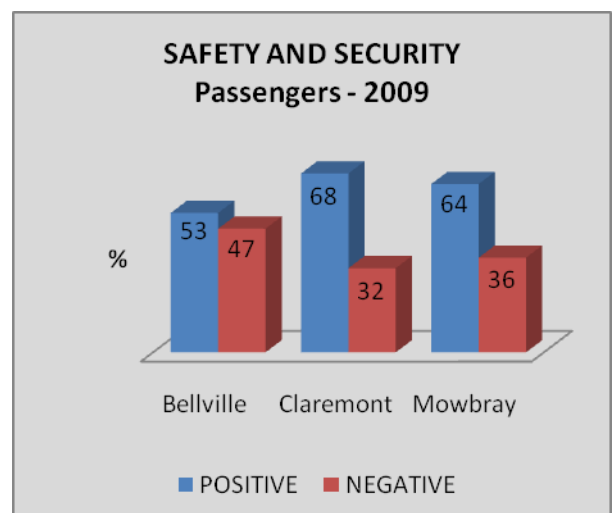
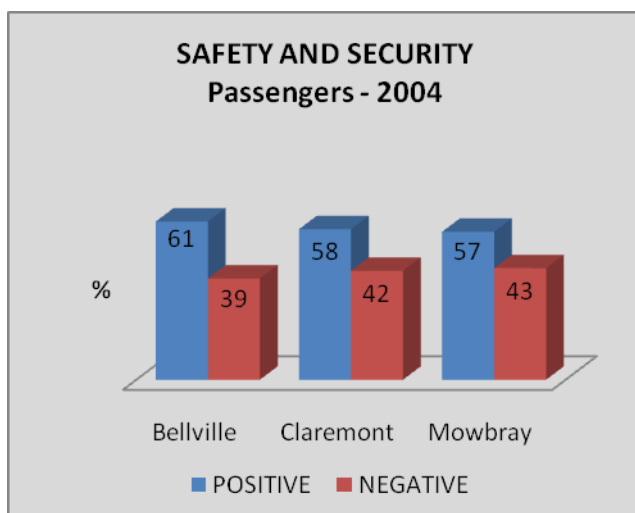


Figure 2. Passenger response to Safety and Security.

It must be said that although all three PTI's are classified as destination interchanges, both Claremont and Mowbray experience a dramatic drop in the number of people and level of activity during inter-peak times. This is not the case in Bellville, though, with continuous high levels of people and activity. For this reason it seems even more prudent to ensure a safe and secure PTI environment.

Interchange Facilities

In the 2004 survey, Claremont PTI had the highest dissatisfaction rate of all six PTI's. As can be seen from figure 3, Claremont now boasts a satisfaction rating increase of 20%. Claremont did undergo a complete reconstruction of the PTI recently and it is pleasing to note that end-users responded positively to this investment.

Mowbray is again the only PTI that shows a positive inclination to interchange facilities with a 5% rise in positive responses. Bellville is on par with the 2004 results with no drastic increase or decrease, but the fact that the overall response is still leaning towards the negative (and slightly rising) should be of concern. The most noticeable change with regards to interchange facilities at Bellville PTI, is the deterioration of general cleanliness. In the 2004 survey it received a 12% response rating and in 2009, 20% of respondents rated it as a problem.

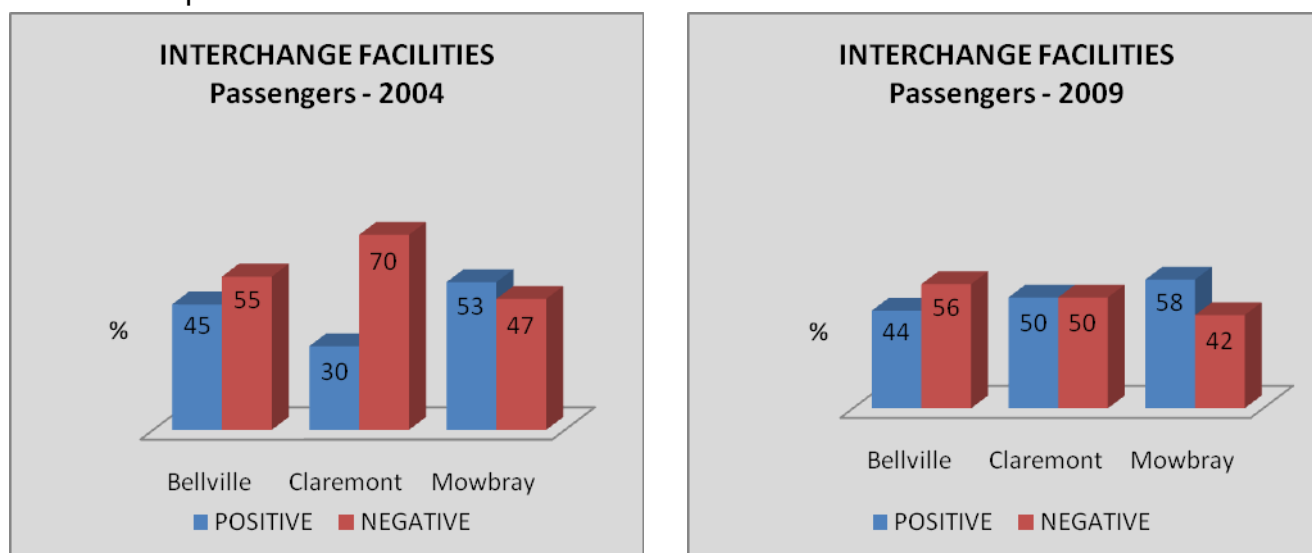


Figure 3. Passenger response to Interchange Facilities.

Pedestrian Environment

Again in the 2004 survey, Claremont had the highest dissatisfaction rating of all six PTI's surveyed with a 67% negative response rate. This was turned around to a large extent with the 2009 results, but unfortunately it still represents a negative inclination although with a much smaller margin. Issues such as lack of shelter and informal traders restricting pedestrian movement scored the highest on the general passenger responses that contributed to the pedestrian environment. The restriction of pedestrian movement because of informal traders could not be verified by personal observations. With the redevelopment of this interchange, informal traders were moved to demarcated spaces where sidewalks were exaggerated to accommodate all users.

The spatial design of the pedestrian environment needs to be mentioned as one of the contributing factors to Claremont PTI being much more pedestrian friendly. The use of different textured surfacing (See figure 4) and making the pedestrian surface continuous ensures that pedestrians receive preference as the most important user group of certain road spaces and parking areas.



Figure 4. Well defined pedestrian environment at Claremont PTI.

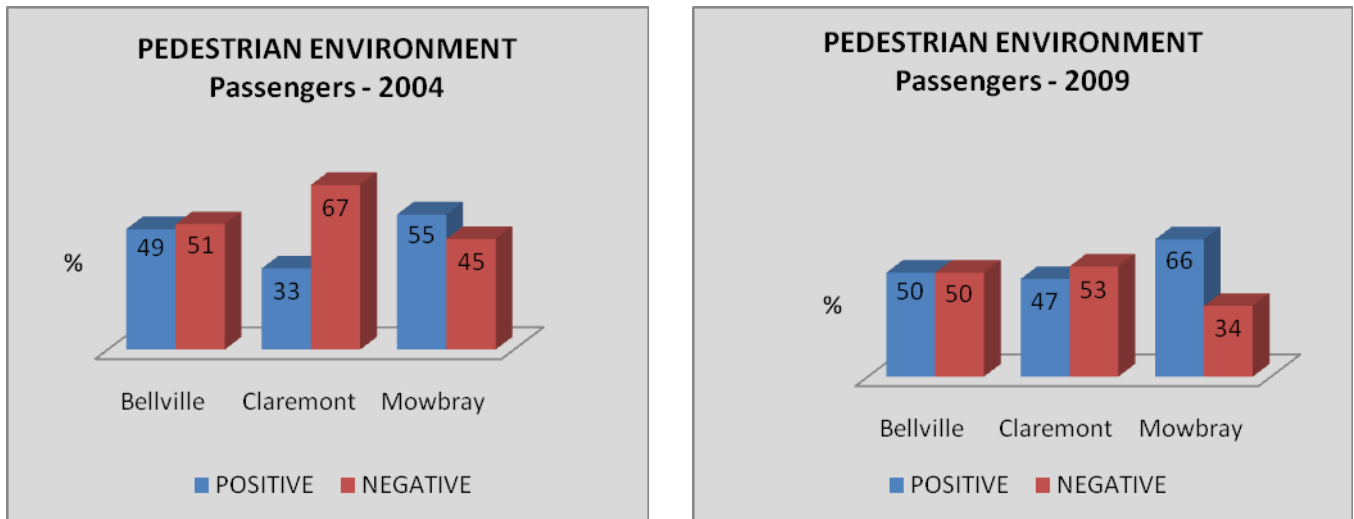


Figure 5. Passenger response to Interchange Facilities.

Bellville scored very similar in 2004 and 2009. When considering the individual questions, lack of cleanliness of the pedestrian area has increased from 12% in 2004 to 20% in 2009. A further concern raised by respondents that had a significant increase, is the issue of informal traders restricting pedestrian movement. This intensified from 5% in the 2004 findings to 16% in the 2009 findings.

Mowbray's results show a huge surge in the number of positive responses with an increase of 11%. The passenger comments with regards to general obstacles in the pedestrian environment shows a much broader spectrum of issues being raised than in 2004. In 2004 five categories were identified as opposed to the ten categories in 2009. Some of the issues raised in 2009 ranged from safety and security issues to a lack of demarcated walking space.



Figure 6. Lack of maintenance and cleanliness at Bellville PTI.

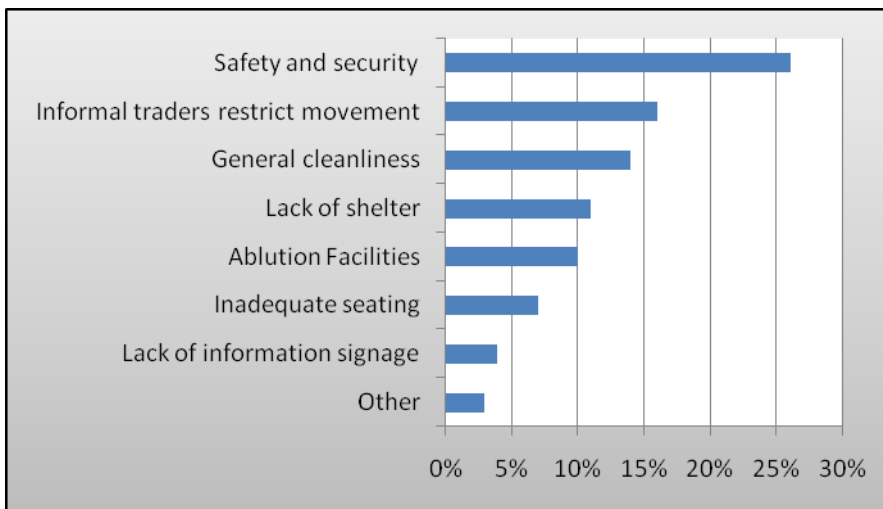


Figure 7. Main concerns as identified by the passenger end-user group – 2009 survey.

5. CONCLUSION

One of the major findings of this survey is the positive reaction the passenger end-user group showed towards the upgraded Claremont PTI. In 2004 it was found to be the PTI which underperformed in most categories.

A negative trend that is slowly emerging is the decline in the quality of the PTI environment at Bellville. This is very significant especially in the light of the importance of Bellville PTI at local, metropolitan and regional scales. A noteworthy issue that was raised at Bellville is the problem around informal traders especially considering the recent upgrades to the informal trading facilities.

In general the survey findings supported the personal observations made at the specific locations but more importantly it illustrates shifts and inclinations that could be acted upon before it becomes major performance obstacles.

6. REFERENCES

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Appendix 1

HOW DO PASSENGERS EXPERIENCE PUBLIC TRANSPORT INTERCHANGES?

An interchange includes the following: Train Station, Bus Terminus, Mini-bus Taxi Rank, Station Complex, Shops and buildings within a one street block radius.

GENDER	RACE	AGE	MODE	INTERCHANGE:
Male <input type="checkbox"/>	White <input type="checkbox"/>	0 - 25 years <input type="checkbox"/>	Train <input type="checkbox"/>	DATE:
Female <input type="checkbox"/>	Black <input type="checkbox"/>	26 - 50 years <input type="checkbox"/>	Bus <input type="checkbox"/>	TIME:
	Coloured <input type="checkbox"/>	51 and older <input type="checkbox"/>	Taxi <input type="checkbox"/>	

	QUESTIONS	YES	OKAY / SOMETIMES	NO
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1	What is the purpose of your trip (E.g. work, school, shopping, etc.)			
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2	Safety and Security			
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2.1	Do you feel safe when:			
	(a) Buying something from the informal traders?			
	(b) Buying from the shops adjacent to the interchange?			
	(c) Walking around?			
	(d) Crossing the road?			
2.2	Have you ever been robbed at the interchange?			
2.3	Are there: (a) Visible policing / security officers at the interchange?			
	(b) Are they effective?			

3	Interchange Facilities			
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3.1	Do you know which facilities are available at the interchange? E.g. Toilets, police, ticket offices, information booth.			
3.2	Is the interchange user-friendly for vulnerable groups of people? E.g. Aged, Women, Children, Disabled.			
3.3	Are the following satisfactory in the interchange?			
	(a) Ablution blocks / Toilets			
	(b) Lighting			
	(c) Seating			
	(d) Shelters			
	(e) General Cleanliness			

4	Pedestrian Environment			
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4.1	Do you feel that there is enough walking space? E.g. Is the pavement wide enough to walk on.			
4.2	Do the Informal Traders restrict your movements?			
4.3	When walking do you frequently come across any of the following: Puddles, potholes, slippery surfaces etc.?			

5	General			
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5.1	Do you use the interchange for:			
	(a) Commuting only			
	(b) Waiting for trains, taxi's or buses			
	(c) Buying goods from Formal Shops at the PTI			
	(d) Buying goods from Informal Traders at the PTI			
5.2	Is there anything that you would like to change at the interchange?			

Comments				