MEASURING THE EVOLUTION OF PASSENGER SATISFACTION FOLLOWING THE INTRODUCTION OF SCHEDULED SERVICES: THE CASE OF THE 7TH AVENUE MINIBUS-TAXI ASSOCIATION IN MITCHELLS PLAIN

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ABSTRACT

This research forms part of the City of Cape Town's pilot programme to improve the business models of minibus-taxi associations and establish transport operating companies, in preparation for the implementation of the next phase of Cape Town's Integrated Public Transport Network.

In 2017, a number of minibus taxi associations were selected to participate in this pilot on a voluntarily basis. As part of this program, the 7th Avenue and Districts Minibus-Taxi Association of Mitchells Plain implemented a trial run to shift its operations to scheduled services in January 2019. This paper presents the results of two passenger satisfaction surveys, conducted prior to and during the early stages of the implementation of this trial. The results of the two surveys are compared using different statistical methods to establish whether the shift to scheduled services improved passenger satisfaction as it relates to various attributes of the services. The finding of this research is that the implementation of scheduled services resulted in a substantial increase in satisfaction amongst users. Linear regression analysis confirms that this increase is attributable to the implementation of the trial.

1. INTRODUCTION

In South African cities, minibus taxis (MBTs) represent two thirds of the public transport supply, and account for a quarter of all commuter trips (van Ryneveld, 2018). Despite providing twice the number of trips supplied by trains, BRTs, and regular buses altogether, MBTs have received little attention and support from government until recently. In light of challenges faced in the development of BRT systems, and because of funding constraints, cities are now exploring alternative solutions to improve their public transport systems, building on the flexibility and affordability of MBT services. The City of Cape Town recognizes the MBT industry as an important building block in the implementation of its Integrated Public Transport Network (IPTN). One of the ten components of Cape Town's IPTN business plan thus consists in "investing in the minibus-taxi industry to improve their services as an integral part of the service mix". In order to achieve this objective, the City launched a pilot program aimed at assessing the potential of improving the business models and operations of a number of pilot MBT associations in the south-eastern suburb of Mitchells Plain. The present research was done as part of this program initiated by the City of Cape Town.

As part of this program, the 7th Avenue and Districts Minibus-Taxi Association (7ATA) organized a trial to offer scheduled passenger transport services. This paper presents the results of two passenger satisfaction surveys, carried out prior to and during the early stages of the trial. Prior to the trial, drivers followed a "fill-and-go" system, whereby vehicles only departed from the taxi rank or pick-up points after collecting a full load of passengers. With the support of a professional team appointed by the City of Cape Town, the association conducted a series of organisational and operational changes to roll out a fully scheduled service on a trial basis. On 10 January 2019, after several months of preparatory work, 7ATA abandoned the fill-and-go system and started running its operations on a revised set of routes following a timetable, driver rosters, and duty sheets.

The premise underlying this shift to a scheduled service is that it would benefit both the association and public transport users. As the association is still undergoing a wider transformation process, it is too early to assess how it has been impacted by this innovation. Passenger satisfaction with the new services, on the other hand, can be measured by comparing the results of the before and after surveys. Using original survey data, this paper thus endeavours to assess the evolution of passenger satisfaction following the introduction of scheduled services. This work, made possible by the Transport Directorate of the City of Cape Town forms an integral part towards the assessment of a successful transformation process.

2. CONTEXT

2.1 Literature review

A growing interest for the integration of paratransit services in urban transport systems is taking shape on the African continent – particularly in South Africa (Behrens et al. 2015; Salazar-Ferro et al. 2013; Schalekamp & Klopp 2018.). While the 1990's and early 2000's were dominated by BRT success stories from Latin America, the first African BRT was not launched until 2008 in Lagos, shortly followed by the introduction of BRT systems in Johannesburg and Cape Town. Beyond the initial enthusiasm, BRTs on the African continent have proven more difficult to implement and sustain than their overseas models (Kumar et al. 2011, Rizzo 2014). Some never saw the light of day (e.g. Accra), while others turned out to be much more expensive to operate than initially anticipated (e.g. Cape Town). Comparing Johannesburg's Rea Vaya with its Latin American siblings, Scorcia & Munoz-Raskin (2019) suggest that lower population densities and high variations in demand between peak and off-peak periods result in higher operating costs for South African BRTs. Subsequently, the fare box revenue is not sufficient to cover operating expenses, and services have to be subsidized by local authorities. As it became apparent that BRT was not a panacea for South Africa's urban mobility challenges, cities and the national government begun exploring a range of options to develop hybrid transport systems, combining BRT and MBT services (Schalekamp & Klopp 2018).

This paper contributes to an emerging body of work on transport operations in Mitchells Plain, led by the Centre for Transport Studies of the University of Cape Town. The lack of integration between scheduled trunk services (by rail or bus) and feeder/distributor MBT services at the Mitchells Plain Town Centre interchange has been the object of previous research. Behrens et al. (2017) found important gaps in headway and operating hours between paratransit and scheduled services. Subsequent work by Plano at al. (2018) analysed the factors that could incentivize drivers to provide off-peak services, and suggested that improved profitability and security at the minibus-taxi rank could be key

levers to extend services. Focusing on passengers' perspectives, Behrens et al. (2018) measured the level of satisfaction of MBT users to identify critical areas requiring improvements. They found that driver compliance, vehicle overloading, vehicle comfort, and customer care received the lowest satisfaction scores from surveyed passengers, while being recognized as critical attributes to improve upon. The present research thus builds upon this body of work, as it explores passenger reaction to the introduction of scheduled services in the same setting.

2.2 Background

The City of Cape Town made the improvement of the minibus-taxi industry a key part of its IPTN business plan (CCT 2014). One of the avenues explored by the City to achieve this objective is the transformation of MBT associations into Transport Operating Companies (TOCs). This process is underpinned by a three-step business improvement model, which consists of rationalizing supply, automating operations, and recapitalising the fleet. It is expected that the formation of TOCs will improve the level of service offered by MBT operators, and prepare them to be contracted by the City to deliver passenger transport services at a later stage. In order to test the feasibility of this model, the City selected three MBT associations serving the low-income suburb of Mitchells Plain. The first step in the TOC-formation process consists of rationalizing the fleet operated by these associations and shifting their operations from unscheduled to scheduled services. 7ATA was the first of the three associations to engage in this process and overhaul its operations. The association runs feeder/distributor services connecting the neighbourhood of Tafelsig to the Town Centre interchange, where commuters connect to trunk lines serving employment centres located 20 to 30 km to the north of Mitchells Plain.

The shift to scheduled operations was made possible by the implementation of a series of enabling measures. First, drivers were moved from a commission system to fixed earnings. This was a critical factor in eliminating competition for passengers amongst drivers, as their income no longer depended on the number of passengers that they transported. In turn, it made it possible for drivers to follow a fixed schedule (as opposed to constantly being on the hunt for passengers). Second, the itineraries of the routes operated by the association were formalized, and new variants of existing routes were officially introduced – increasing the number of routes operated by 7ATA from three to five. Drivers were instructed not to deviate from these routes or backtrack to pick up additional passengers. Third, a complete operations plan was developed with the assistance of a transport planner, and translated into duty sheets assigned to drivers on a daily basis. Each duty sheet contains a set of stops and a timetable that drivers follow throughout the day. Dispatchers and monitors are positioned at the rank and at specific control points along the routes to make sure that drivers adhere to their schedule. Finally, ambassadors were deployed at the rank during the first few days of operations to brief passengers about the functioning of the new system.

3. METHODOLOGY

In order to measure the evolution of passenger satisfaction regarding the introduction of scheduled services, two surveys were organized – one before and one after the launch of the new services. This section presents the methodology and protocol followed to administer these surveys.

3.1 Sampling

Firstly, the total number of 7ATA users had to be estimated to survey a representative sample of passengers. Earlier data collection efforts carried out through the TOC-formation program indicated that 7ATA provided approximately 17 000 trips on an average weekday in 2017. According to the 7ATA executive, the overwhelming majority of their customers are round-trip users (travelling to and back from Town Centre). The daily number of unique passengers served by the association is therefore estimated to be less than 10 000. In order to measure the size of the total passenger population, respondents to the surveys were asked how many days per week they used 7ATA services. Based on their response, the maximum number of unique users was estimated to be 22 000 per week. The two surveys were designed to sample a minimum of 662 responses, which provides a 3,75% confidence interval with a 95% confidence level, assuming a total population of 22 000.The first survey was conducted over a period of one week, starting on 15 October 2018, and produced 732 responses[1]. The second survey started on 31 January 2019, three weeks after the launch of scheduled operations, and recorded 693 responses[2] over a period of ten days. The second survey took longer to complete than the first because of the shift to scheduled operations. As waiting times decreased (particularly in the off-peak period), it became more difficult for surveyors to intercept passengers at the rank.

Surveyors were hired by the association and trained by the consultant supporting the TOC-formation program. They were selected for their knowledge of the area, and some of them had experience working for the association as sliding doors operators. The first survey was administered by five surveyors (three females and two males), while the second mobilized four surveyors (two females and two males). Surveyors interviewed passengers at the rank, on their way back from Town Centre. Passengers were either surveyed while sitting on vehicles waiting to depart, or while standing in line for the next available vehicle. For security reasons, surveyors were only deployed at the rank, where the association could guarantee their safety. As a result, passengers were neither surveyed at their point of origin (inside the Tafelsig area), nor during the course of their trip (on-board vehicles). However, as the association confirmed that most users travel to Town Centre and back, it can be assumed that respondents interviewed at the rank are representative of the wider passenger population.

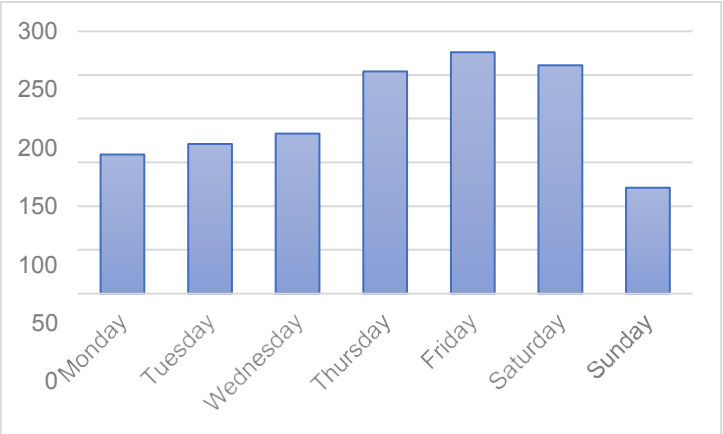

Figure 1: Number of responses by day of the week (both surveys combined)

[1] After cleaning up the data to remove erroneous records
[2] *Idem*

Surveyors worked in shifts and were assigned a set number of responses to collect for each day. Daily targets where defined to take into account the relative weight of the days of the week, based on estimates provided by the association: Friday is the busiest day of the week, closely followed by Thursday and Saturday. Similar levels of activity are observed from Monday to Wednesday, while Sunday has the least traffic. The number of responses collected for each day was therefore adjusted to reflect these trends, as shown on Figure 1.

3.2 Approach and tools

The same protocol was followed in the two surveys in order to ensure comparability in results. To avoid any bias ensuing from variations in survey conditions, the same questionnaires, surveyors, survey hours, and survey instruments were used for the two surveys. Nevertheless, the shift to scheduled services in itself affected the conditions in which the second survey was conducted. During the first survey, surveyors primarily interviewed passengers sitting in empty vehicles, knowing that it would take some time for the minibus to fill up and depart. During the second survey, surveyors reported not being able to complete interviews as vehicles departed too quickly from the rank. For this reason, they had to work longer hours to reach their daily target number of responses, which led to two surveyors resigning from their position before the end of their assignment. Consequently, the second survey had to be extended from seven to ten days.

The questionnaire was designed to be administered in less than three minutes. It is organized around three categories of questions. The first set of questions focuses on the demographic characteristics of respondents (gender, age group, and occupational status). The second set of questions characterizes the trip and travelling habits of respondents (trip purpose, other modes used, and number of days travelling per week). The third set of questions asks respondents to score their level of satisfaction regarding the following attributes of the service: general satisfaction; waiting times; location of pick-up and drop-off points; fare; interaction with the crew; comfort of vehicles; safety (from accidents); and security (from crime). In the second survey, respondents were also asked whether they considered the new system to be better or worse than the previous one. Finally, an open-ended question on priority areas for future improvements was asked in both surveys. The questionnaire was made available in both English and Afrikaans – each being the mother tongue of approximately half of Mitchells Plain residents.

The questionnaire was implemented using QuickTapSurvey[3], a digital tool for designing and implementing offline surveys. QuickTapSurvey consists of two main components: a web interface and a smartphone app. The web interface is used to load survey questions and specify the format of responses (e.g. multiple choice, free text, integer). Once the questionnaire has been created online, it can be downloaded by surveyors on their phone using the QuickTapSurvey app.

An internet connection is required to download the questionnaire, but not to administer the survey. The phones therefore do not need to be enabled with SIM cards for data transfer. Surveyors go through the questions displayed in the app one by one, and tap the screen to select the choice of the respondent, as illustrated in Figure 1. All questions are multiple-choice to allow for statistical processing of the data, with the exception of the final open-ended question on potential areas of improvement.

[3] https://www.quicktapsurvey.com/

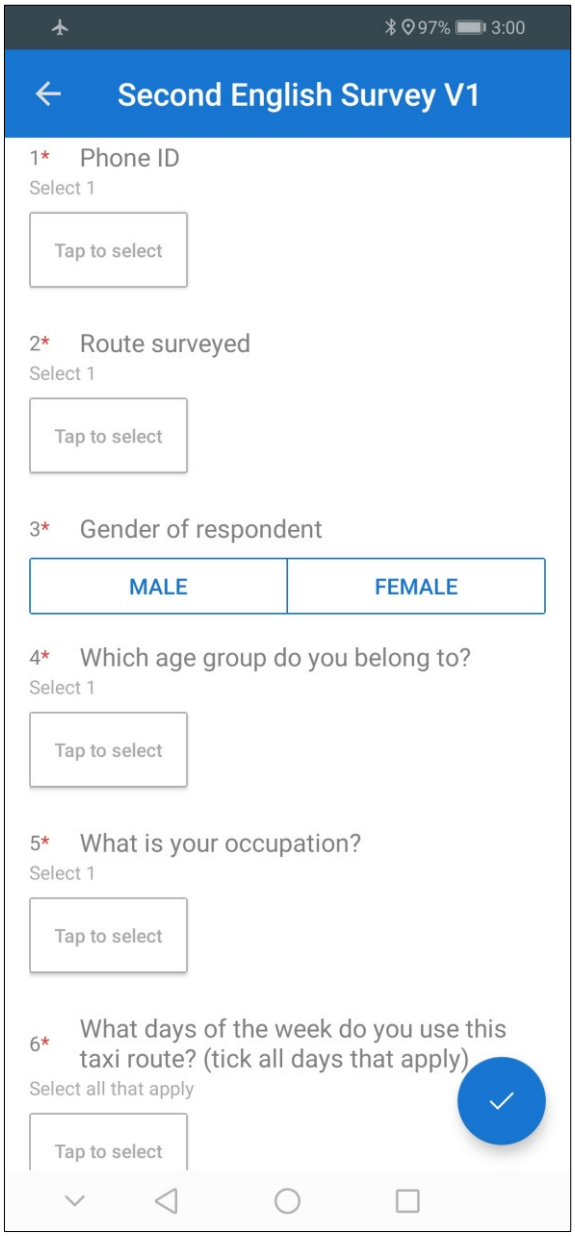

Figure 2: Screen capture of the QuickTapSurvey app interface

3.3 Quality control

Using a digital, smartphone-based, mode of survey administration offers important benefits in terms of quality control. First, all responses are recorded directly in a predefined format, which reduces the potential for measurement error; manually transcribing data is both time-consuming and a source of errors. Second, data is uploaded by the surveyors on a daily basis at the end of their shift. Surveyors bring back their phones to the association's office, send their data using the Wi-Fi network, and put their phone to charge overnight. The supervision team is therefore able to retrieve the data online daily, and to control its quality without having to go to the field. Problems can be identified and remedied in near real-time. Third, the smartphones automatically record metadata that is used to confirm that the surveyors are following the defined protocol. These data include the time and date of each record, the duration of each interview, and the GPS coordinates of the phone when the response was recorded. Finally, because all data is immediately available in a clean format, it is possible to compare responses across surveyors to detect anomalies (see example in Table 1).

Table 1: Example of daily quality control table (anomalies highlighted in red)

Mean satisfaction scores	Monday 15.10.2018				
	Surveyor A	Surveyor B	Surveyor C	Surveyor D	Surveyor E
General satisfaction	3,3	n/a	**4,8**	3,1	3,3
Waiting times	3,7	n/a	**4,6**	3,8	3,3
Pick up and drop off points	3,4	n/a	**4,5**	3,7	3,9
Fare	2,7	n/a	3,1	3,5	2,7
Interaction with the crew	3,3	n/a	2,4	3,2	3,7
Comfort of the vehicle	3,5	n/a	**4,7**	3,4	3,3
Safety (i.e. road safety)	3,1	n/a	**4,7**	3,6	3
Security (i.e. against crime)	3,5	n/a	**4,7**	3,5	3,4
Male passengers surveyed	13	n/a	12	**5**	**9**
Female passengers surveyed	16	n/a	18	**23**	**19**

Data quality was controlled through two main processes. First, surveyors were monitored in the field by the executives of the association, who were always present at the rank. They made sure that surveyors reported for work as scheduled, that they were distributed evenly across the different loading points at the rank, and that interviews were conducted as per the survey protocol. Second, the supervision team remotely checked the data sent by surveyors every night and shared additional instructions with them through a dedicated WhatsApp group. As illustrated in Table 1, two problems became apparent at the end of day one of the first survey: surveyor C had recorded significantly higher satisfaction scores than her peers, and surveyors D and E had interviewed a lot more female passengers than male passengers. The monitoring process described above allowed the supervision team to address these two issues immediately. Data from surveyor C was discarded for that day, and surveyors D and E were instructed to interview a more representative sample of passengers in the future.

4. RESULTS

4.1 Passengers' characteristics

The first level of analysis carried out consists of comparing demographic and trip characteristics of the respondents across the two surveys. The goal of this analysis is to confirm that the two survey samples are not vastly dissimilar. This assumption needs to be tested in order to establish that changes in satisfaction levels between the first and the second survey result from the implementation of scheduled services, and not from variations in sample populations. Table 2 summarizes the main characteristics of the survey samples.

In line with the results of previous research (Behrens et al. 2018), we find that there are more female than male passengers using 7ATA's services. Younger users (under 31 years old) make up a quarter to a third of all respondents. While gender distribution is balanced amongst younger passengers, the female-to-male ratio is almost two to one in the older age group (46+). As over half of the respondents reported being employed (and roughly 30% unemployed), the main trip purpose was expected to be work. Remarkably, shopping trips outnumber trips to and from the workplace in both surveys. However, it should be noted that the prevalence of shopping trips may have been amplified by survey hours. Because more responses were collected during the off-peak than the peak period, it is possible that commuters travelling to and from the workplace were underrepresented in our sample. Although it may partially have been the case, the association executives indicated that they were not surprised by the predominance of shopping over other trips purposes. Shopping

trips were also more frequent during the second survey than during the first, which could be explained by the fact that the two surveys were conducted at different times of the month. The first survey took place right before payday, at a time when households' budget is generally constrained. The second survey started a week after payday, when more resources are available for shopping purposes. Finally, respondents can be categorized into three groups, each representing approximately a third of the sample population in both surveys: everyday users, regular users, and occasional users. Overall, and despite the specificities highlighted above, the data confirms that the respondents sampled for the first and second survey had broadly similar profiles, and are therefore representative of the same population.

Table 2: Comparison of sample characteristics

	First survey Before the trial (n=732)		Second survey During the trial (n=693)		Combined (n=1425)	
	Respondents	% of total*	Respondents	% of total*	Respondents	% of total*
Gender						
Female	409	56%	393	57%	802	56%
Male	323	44%	300	43%	623	44%
Age group						
Under 21	78	11%	55	8%	133	9%
21-30	185	25%	121	17%	306	21%
31-45	263	36%	312	45%	575	40%
46+	206	28%	205	30%	411	29%
Occupational status						
Employed	382	52%	385	56%	767	54%
Retired	68	9%	71	10%	139	10%
Student	52	7%	50	7%	102	7%
Unemployed	230	31%	187	27%	417	29%
Trip purpose**						
Work	224	29%	257	33%	481	31%
Education	51	7%	44	6%	95	6%
Shopping	332	42%	383	49%	715	45%
Social	92	12%	61	8%	153	10%
Administrative	85	11%	44	6%	129	8%
Days/week using service						
6-7 days	274	37%	202	29%	476	33%
4-5 days	250	34%	289	42%	539	38%
1-3 days	208	28%	202	29%	410	29%

* *percentages may not total a hundred as results are rounded*
** *more than one choice possible*

4.2 Satisfaction levels

Following questions on demographic and trip attributes, passengers were asked to give their level of satisfaction (on a scale of 1 to 5) regarding various characteristics of the MBT services provided by 7ATA. Mean satisfaction scores for the two surveys are presented in Figure 3.

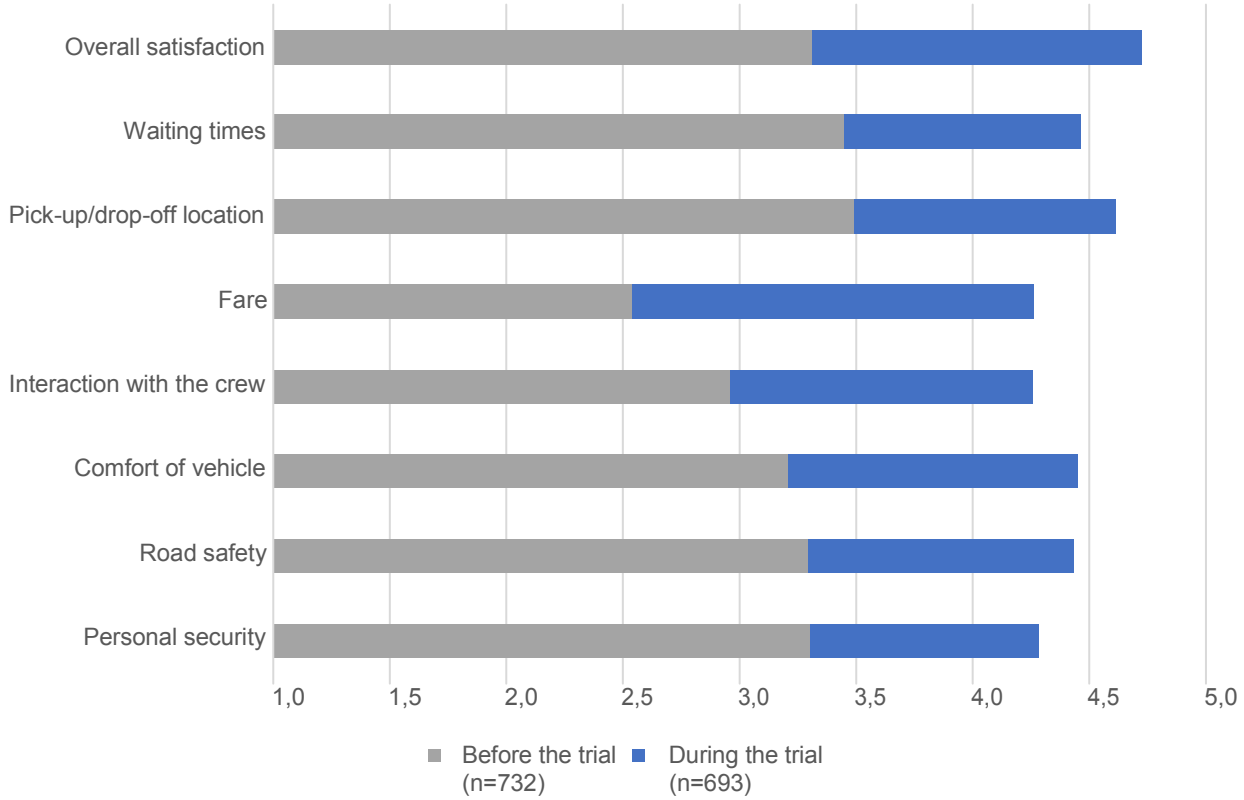

Figure 3: Mean satisfaction scores on a scale of 1 to 5

Results from the first survey show that passengers were overall moderately satisfied with 7ATA's services before the trial period. The lowest area of satisfaction was the fare charged by the association. It is likely that this criterion was rated particularly low because the first survey was conducted shortly after a fare increase. However, respondents also indicated through the open-ended question that the single-fare structure (nine rand, irrespective of distance travelled) and the absence of discounts for senior passengers were a source of dissatisfaction. The second main area of dissatisfaction was the conduct of the crew. Respondents complained about sliding-door operators for being rude, unkempt, or under the influence of drugs or alcohol. Low satisfaction regarding vehicle comfort was associated with the overloading of passengers, and the use of uncomfortable auxiliary seats. Pick-up and drop-off locations, as well as waiting times received slightly higher scores, illustrating the flexible quality of minibus-taxi services.

Results from the second survey (undertaken during the trial implementation of scheduled services) show a substantial increase in satisfaction levels for all characteristics of the service. The overall satisfaction score increased by 1,4 point (on a 5-point scale), while satisfaction with specific attributes of the service improved by 1,2 point on average. These results are confirmed by the fact that 94% of the respondents in the second survey reported an improvement in service following the launch of scheduled operations. Attributes that received the lowest satisfaction scores during the first survey registered the strongest progression during the trial period (fare, interaction with the crew, and comfort of vehicle). Part of the dramatic increase in fare satisfaction may actually result from an attenuation over time of the discontent caused by the September 2018 fare increase. Nonetheless, this progression also illustrates the fact that passengers experienced better value-for-money after the overhauling of services. Indeed, the transformation effected by 7ATA during the trial went beyond the mere introduction of timetables, and improved all aspects of operations. Not only did waiting times become more predictable due to the new schedules, but the restructuring of the association's routes also increased service accessibility for the

residents of the Tafelsig area. Replacing the commission system with fixed remunerations for the crews lifted a major economic incentive to overload vehicles and drive recklessly in the pursuit of additional passengers. Combined with shorter working hours, this allowed drivers and sliding door operators to shift their focus from profitability to customer service. Finally, the reorganization of the MBT rank (with fewer idling crews and vehicles) made it less prone to petty crime, and increased passengers' sense of personal security.

4.3 Linear regression analysis

A linear regression model was estimated to help quantify the influence of the different characteristics recorded on the general satisfaction level of passengers. Responses from both surveys were compiled in a single dataset, and all categorical variables recoded as dummy variables. A dummy variable was also created to identify responses from the first survey (*trial*=0) and second survey (*trial*=1). The dependent variable in the model is the general satisfaction score. Dummy variables for all categorical variables are included as independent variables. One category is omitted for each of the categorical variables to avoid collinearity. The model is presented in Table 3.

The model has strong explanatory power, with an adjusted R-squared over 40%, and a probability of rejecting the null hypothesis close to 100%. For all but one of the independent variables, the probability of rejecting the null hypothesis is lower than 95%. The coefficients of these variables are therefore not significant. The only significant independent variable is the one identifying responses from before and after the trial. For this variable, the probability of rejecting the null hypothesis is close to 100%. We can thus affirm that the *trial* variable explains part of the variation in satisfaction levels, while controlling for the effect of other variables. The coefficient of the *trial* variable is positive and shows that the satisfaction score of respondents for which *trial*=1 is on average 1,46 point higher than that of respondents for which *trial*=0. The model thus demonstrates with a 95% confidence level that the implementation of the trial (that is, the launch of scheduled operations) increased passengers' reported satisfaction level between 1,35 and 1,57 point.

Table 3: Results of linear regression analysis

Source	SS	df	MS
Model	731.782998	32	22.8682187
Residual	1000.20577	1392	.718538631
Total	1731.98877	1424	1.21628425

Number of obs	1425
F(32, 1392)	31.83
Prob > F	0.0000
R-squared	0.4225
Adj R-squared	0.4092
Root MSE	.84767

satisfaction	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
trial	1.461738	.0544316	26.85	0.000	1.354961	1.568515
afrikaans	.0985659	.0574759	1.71	0.087	-.0141829	.2113147
monday	.1048684	.0968549	1.08	0.279	-.085129	.2948658
tuesday	.1505793	.0917318	1.64	0.101	-.0293682	.3305268
thursday	-.0643959	.085439	-0.75	0.451	-.2319989	.1032072
friday	.0446153	.0841386	0.53	0.596	-.1204367	.2096674
saturday	.1397861	.0884134	1.58	0.114	-.0336517	.313224
sunday	-.0302385	.1096967	-0.28	0.783	-.2454272	.1849502
AM	-.0386566	.0567435	-0.68	0.496	-.1499685	.0726553
surveyor_A	.1936594	.1025424	1.89	0.059	-.0074949	.3948138
surveyor_B	.0578497	.0944014	0.61	0.540	-.1273346	.243034
surveyor_D	-.0212669	.0649949	-0.33	0.744	-.1487654	.1062316
surveyor_E	.1396998	.1102432	1.27	0.205	-.076561	.3559606
route_1	-.0134857	.0583623	-0.23	0.817	-.1279733	.1010019
route_3	.0395047	.0577351	0.68	0.494	-.0737525	.1527619
male	.0200904	.0478814	0.42	0.675	-.0738372	.1140179

Table 3: (Cont'd)

satisfaction	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
age_under_21	.0924329	.1201766	0.77	0.442	-.1433139	.3281796
age_31_45	.0066559	.0638981	0.10	0.917	-.1186911	.1320029
age_46_over	-.0066393	.0723824	-0.09	0.927	-.1486296	.1353511
student	-.1450344	.131724	-1.10	0.271	-.4034334	.1133646
unemployed	.0040359	.0630637	0.06	0.949	-.1196742	.127746
retired	-.0215647	.0958516	-0.22	0.822	-.2095938	.1664644
weekday_user	-.0335995	.0715383	-0.47	0.639	-.173934	.106735
weekend_user	.0165204	.0962006	0.17	0.864	-.1721934	.2052342
train_pass	.1995452	.2071299	0.96	0.336	-.2067752	.6058656
gabs_pass	-.0226561	.0622141	-0.36	0.716	-.1446995	.0993874
myciti_pass	-.0808682	.0815621	-0.99	0.322	-.2408661	.0791298
taxi_pass	-.0324515	.0611297	-0.53	0.596	-.1523679	.0874648
other_pass	.0896815	.0813599	1.10	0.271	-.0699198	.2492829
trip_shop	.0237303	.06029	0.39	0.694	-.0945388	.1419995
trip_social	-.0581564	.0844825	-0.69	0.491	-.2238831	.1075704
trip_admin	-.0472077	.0894265	-0.53	0.598	-.222633	.1282176
_cons	3.175928	.1742652	18.22	0.000	2.834077	3.517779

5. CONCLUSION

Using a trial intervention implemented by 7ATA as a case study, this research assessed the impact of a shift to scheduled operations on MBT passengers' satisfaction. With the financial support of the City of Cape Town and the active participation of the association, two passenger satisfaction surveys were organized at the taxi rank, using digital technologies. The results of these two surveys were compared using different statistical approaches. It was found that the implementation of scheduled services by the association had produced a substantial increase in passengers' satisfaction regarding all aspects of the service. Linear regression analysis confirmed that this increase in satisfaction was attributable to the implementation of the trial. These results indicate that the TOC-formation process improves the quality of service experienced by end users.

Considering that satisfaction is a product of experience versus expectations, it is likely that the perceived improvement measured in this research will gradually fade in time. This would not call into question the relevance of the shift to scheduled services, but merely suggest that passengers have become accustomed to – and demand – a higher quality of service. The wider impact of this process on the association, as well as its potential for the industry, will be the object of forthcoming publications. At the time of writing, the trial was in its fourth month of implementation, and 7ATA had not reverted to the fill-and-go system. The ongoing installation of tracking devices on the association's fleet and the development of a web-based dashboard are expected to strengthen monitoring and compliance with the schedule. What started as a trial run is thus on the right track to become a permanent service, for the benefit of the association's passengers. The City is committed to apply these outcomes of the trial to other taxi associations to benefit more minibus-taxi passengers.

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