

# Understanding bidder behaviour: The case of the Mamelodi contract

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## ABSTRACT

The South African government has had a nearly 17 year moratorium on new commuter bus contracts. In late 2017, the government lifted this moratorium which enabled the Gauteng Provincial Government to design a service for a number of operating areas, one of which was for the Mamelodi township to the east of Pretoria.

From the outset, some operators expressed their reservations about the quality of the supporting information. The result of the tender process was that the respective tender prices and related subsidy requirements were significantly higher than that of the incumbent operator and was therefore not awarded.

The purpose of the research is to investigate how bidding companies viewed the Mamelodi contract when tendering for the service.

The results of the research indicated that there were major variances in annual passenger trip estimates, passenger revenue estimates, subsidy requirements and overall tender amounts, amongst the bidders.

Conclusions are that the lack of accurate and complete passenger information, detailed route information, the lack of an adequate escalation formula and a requirement that bidders had to sub-contract 30% of their services to smaller operators, collectively contributed to higher tender costs and therefore subsidy requirements for the authority.

## 1. Introduction

During research conducted by the author in 2017 to gauge the potential cost implications of contracting risks for operators, it became evident that South African bus operators hold strong views on specific cost and revenue risk elements embedded in contracting documents (Walters, J., 2018). These risks may influence contract pricing adversely for authorities should such risks not be appropriately apportioned between the authority and the operator (whomever can carry the risk the best), or, if certain contract specifications are inaccurate, incomplete etc. that may influence the revenue risk of operators in, especially, net cost contracts.

The purpose of this research is to write up the experience of operators that tendered for the Mamelodi contract in Pretoria, the first tender to be put out by government since a moratorium was placed on further tenders in 2001.

## **2. Literature review**

### **2.1 Brief overview of public transport contracting in South Africa**

Developments in the public transport industry in South Africa have been described in a number of papers by the author for example: Walters, J. & Cloete, J.J. (2001); Walters, J., (2008); Walters, J. & Heyns, G., (2012) and Walters, J. (2014) and won't be repeated suffice for a brief overview of developments to provide context to this paper.

The competitive tendering of subsidised bus services was accepted with the adoption of the 1996 White Paper on National Transport Policy (DoT, 1996) and later adapted in subsequent transport legislation to also include negotiated contracts under certain conditions (NLTTA, 2000).

In 1997, the government concluded Interim Contracts (ICs) with existing subsidised operators as a transition measure to full competitive tendering by July 2001 (Naude, 1999 as quoted by Walters, J., 2014). Some competitive tender contracts were, however, concluded prior to 1997 of which the Mamelodi contract is an example that was concluded with Putco (Pty) Ltd in 1996 (Coetzee, E., 2019). Between 1997 and 2003 a number of tendered and negotiated contracts were concluded with operators that represented 66 tendered contracts (+/- 1834 buses), 10 negotiated contracts (+/- 1300 buses) with the remainder being interim contracts (39 contracts representing about 3849 buses) (Walters, J., 2014). These figures have changed slightly with some of the existing tendered contracts in KwaZulu Natal being re-negotiated in 2017 with incumbent operators for a seven year period (Myburg, K., 2019).

In 2001, the government placed a moratorium on further contracts due to a legal dispute with an operator about the conditions of tendering that government had to meet, as well as issues regarding the affordability of contracting to government and organised labour concerns with public transport contracting (Walters, J., 2014). Since the moratorium all contracts that expired (interim contracts, tendered contracts and negotiated contracts) were extended for varying periods ranging from a (mainly) month-to-month basis to extensions of up to three years (Cornelius, E., 2019).

In 2017, the National Department of Transport took a decision to lift the tendering/negotiated contract moratorium that allowed the Gauteng provincial government to put the Mamelodi contract out to tender (Cornelius, E., 2019).

### **2.2 Public transport contracting internationally**

Public transport contracting has been growing throughout the world as a means to increase service efficiencies, holding operators to account for service deliveries and to improve operating and funding efficiencies. This trend is evident when considering the long history of especially the biennial international THREDBO conference series on competition and ownership issues in land passenger transport (Wong, Y.Z., Hensher, D.A., 2017). The topics of this conference series typically focus on contracting in public transport, service design, contracting results and trends in many jurisdictions throughout the world.

When drafting a public transport service contract the authority has to decide on a number of features, provide information about the patronage and fare levels (especially for net-cost contracts) and routes and networks to be operated. According to the European Commission (EC)(2008: 58), the first step in the design of the contract by an authority is to become aware of risk management as almost all contract terms have consequences on what would constitute an appropriate risk allocation between the operator and the authority. These risks manifest themselves, amongst other, in operational risks that could be, firstly, external to the contract and that could be influenced indirectly (usually to a small extent) by the operator, such as energy prices, staff costs and material costs (e.g. capital equipment such as buses), and, secondly, internal risks that can be influenced directly by the operator such as maintenance and operational costs.

Contract risks also manifest themselves in bad data sources for calculations such as passenger numbers and planning for the services. Passenger revenue risks are critical in, especially net-cost contracts, where the operator bears the revenue risk (EC, 2008). The lowest level of risk are to be found in management contracts whilst the highest levels of risk are to be found in net cost contracts as depicted in the following figure:

Level of risk borne by the operator

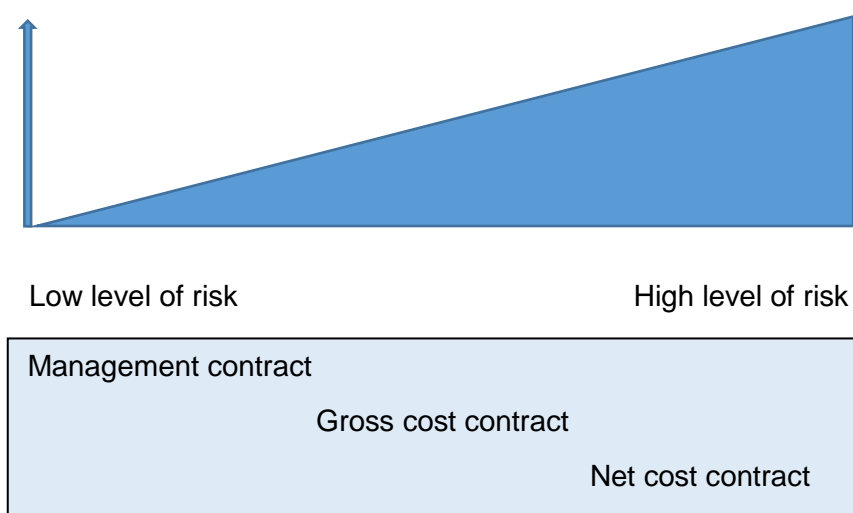


Figure 1: Levels of risk in public transit contracts  
Source: Adapted from EC (2008:61)

The result of inappropriately apportioned risks in contracts, or incomplete information, is that it could have a negative effect on the outcome of a contract (EC,2008). This is especially the case in net cost contracts where the operator carries both the revenue and production cost risks. The result manifests itself in higher prices, and therefore increased subsidies for the authority, the higher the risk premium for the operator. Buchanan (2004) notes that as the level of risk that the authority wishes to transfer to the operator increases, the number of bids may reduce and the prices that tenderers will bid are likely to be higher.

Risks could also have an impact on the potential solvency of the operator (especially if the operator does not account for all the perceived risks in the contract pricing process) and could, in addition, result in fewer bids due to the higher entry barriers as a result of risk (EC,2008). Risk could also be classified according to various levels e.g. low risk (predictability/not critical for the operator), high risk (high uncertainty/critical for the operator)

and unbearable risk (unpredictable and critical for the operator, potentially affecting the number of bidders and could be viewed as an entry barrier) (EC, 2008).

Tamblay *et al* (2017a:89) state that “to design and evaluate contractual arrangements for transit service delivery, it is crucial to understand the risks assumed by the actors involved”. This understanding is primarily to ensure that the contractual party that assumes a particular risk is best capable to deal with the results of that risk and, as far as external risks are concerned, the party that is best capable of absorbing such risk at the lowest possible cost. This implies a detailed risk analysis when public transit contracts are developed.

Tamblay *et al* (2017b:3) presented a framework that defines the primary risks in the provision of public transport with a focus on “those relating to operating costs (moving buses) and operating revenues (collecting fare)”. Risks identified that were inherent to the transit industry included cost factors such as congestion, the price of supplies, kilometres offered and operational efficiency. Revenue risks included demand revenue, fare evasion and fares. Tamblay *et al* (2017b) further subdivided the cost risks into four categories derived from the fact that a system’s operational costs depend on its fleet requirements, the drivers needed, its level of supply (scheduled vehicle kilometres) and the price of its main inputs for example, fuel and labour. Revenue risks were classified by Tamblay *et al* (2017b) as dependent on how many people used the system, how many of them pay and how much they pay.

In order to deal with a reduction of revenue risks (based on variations in demand for the service) that operators face, two mechanisms were adopted in the case of Transantiago (Tamblay *et al*, 2017a:91). The first mechanism involves contract revisions during which adjustments are made to future income (scheduled revisions every second year and special revisions, at the operators’ request, in response to significant changes in the system). The second revision involves a revenue adjustment mechanism that is applied once per annum and is meant to make up for significant differences between expected and actual demand levels. This revision compensates the operator retroactively for past losses. Regarding short and long term input price risks, the authority assumes the risks of variations which are adjusted monthly based on a cost adjustment mechanism (Tamblay *et al*, 2017a:91).

In New Zealand any contract with a duration in excess of 12 months is adjusted on a quarterly basis to compensate operators for price movements (up or down) in input costs such as wages and fuel prices. This is based on an index published by the New Zealand Transport Agency. This index is reviewed approximately every five years based on survey information about operator’s cost structures including changes to the composition and weighting of the respective cost items in the index (NZTA, 2009).

From the foregoing, it is evident that when viewing cost and revenue risks in public transit contracting, the authority has a responsibility, especially in net cost contracts, to provide a sufficient level of accurate information to prospective bidders in order for such bidders to properly quantify cost and revenue risks when tendering for a contract. Any of the aforementioned risks that are not properly quantified, nor apportioned, will lead to higher contract prices (EC, 2008). This is often in the form of higher subsidy levels to the authority. Tamblay *et al* (2017b:2) states that it is necessary to be “clear on the risks that are borne by the companies and the authority, understanding how these risks translate into planning and operation incentives”. In this regard Tamblay *et al* (2017b) in quoting Muñoz and Gschwender, 2008; Muñoz *et al.*, 2009 and the World Bank, 2009, state that the history of Transantiago’s disastrous reform programme could be explained by several factors that include the severe (system) design problems and implementation errors, together with poorly designed contracts with operators.

In a recent study in South Africa, it was found that bus operators hold strong views on both revenue and cost risks embedded in contracts (Walters, 2018). As far as revenue risks are concerned, operators rated an inadequate escalation formula as one of the most important cost risks followed by passenger resistance to fare increases, government not agreeing to requested annual passenger fare increases, passenger volumes lower than expected during contract operations and passenger volumes lower than expected at the commencement of the service. These elements are mostly definable by the authority in the design of the contract, as it ought to include an escalation formula that is reflective of industry costs and supply passenger information based on historic information about the service as it monitors services for contract compliance. Regarding the escalation formula, the study found that fuel, labour and bus maintenance costs are considered major risk factors that could impact contract pricing (Walters, 2018:241).

The study also found that the authority ought to consider measures such as the willingness to review the contract escalation formula during the contract period, that the escalation formula had to be accurate (cost element weightings) and fair (correct indices applied) and that bus running costs ought to be adjusted after contract commencement (to potentially adjust the contract value based on the real passenger volumes after service commencement) (Walters, 2018:240).

### **3. Research problem and research objectives**

There is a lack of research about bidder behaviour in competitively tendered public transit contracts in South Africa. The results of the Mamelodi contract bids pointed to a significant increase between the incumbent operator's subsidy level and that submitted by the bidding companies, implying that bidders potentially factored cost and revenue risks into their bid prices. An analysis for this unexplained increase has not been formally undertaken (and published) and it is postulated that the apportionment of risk factors between the various actors could be cause of the increase in subsidy requirement.

#### **3.1 Primary research objective**

To investigate how bidding companies viewed the Mamelodi contract when tendering for the service.

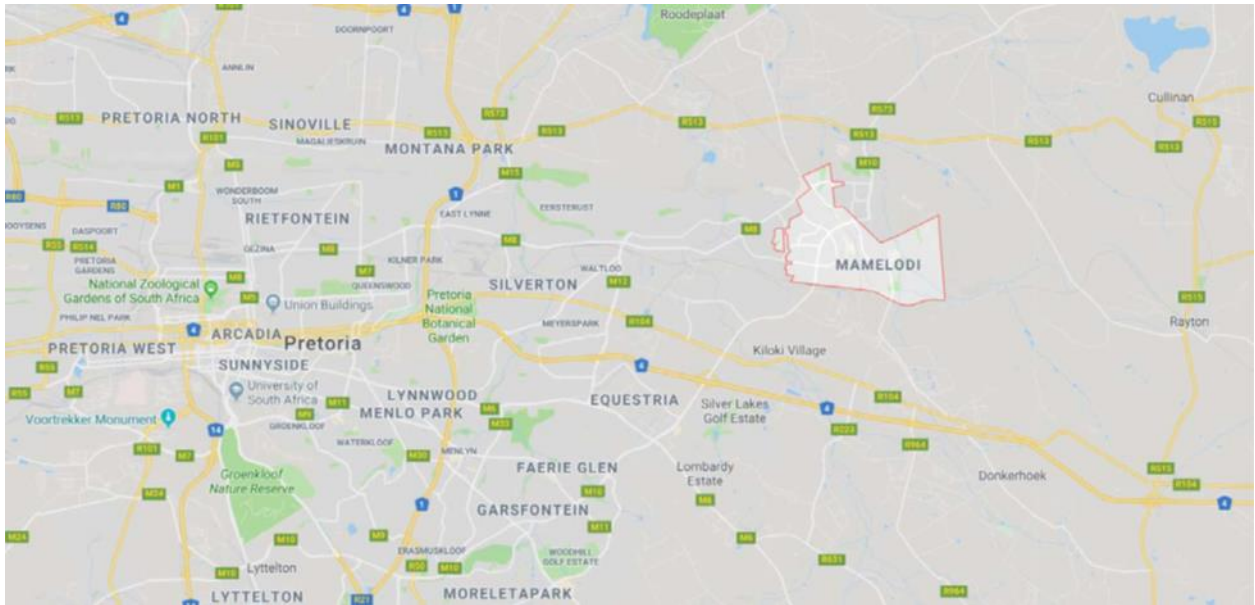
#### **3.2 Secondary research objectives**

- To detail the service design characteristics of the Mamelodi contract
- To analyse the various bids with a view to understand how the bidders arrived at their respective bids
- To determine the main risks that bidders factored into their bids when costing the service
- To arrive at conclusions and to make recommendations on the future design of tender documentation

### **4. Background to the Mamelodi service**

Mamelodi is a township situated to the east of the City of Tshwane (CoT) (Pretoria) in the Gauteng Province of South Africa (see Map 1). It has a population of 334 577 people over a 45,2 km<sup>2</sup> area with a population density of 7403 per km<sup>2</sup> (Citypopulation, 2019) . The area is served by a number of taxi associations, a contracted commuter bus company and Metrorail that provides commuter rail services. The area has historically been the subject of many civil protests about service delivery by the City of Tshwane (IOL, 2018) and public transport

arrangements. In one major unrest event 22 buses were destroyed and a number suffered major damage (Record East, 2016).



Map 1. The location of Mamelodi to the east of Pretoria  
Source: <https://www.google.com/maps>

Many commuters work in the central city area of Pretoria, as well areas to the north, south and east of the city. Commuter bus services between Mamelodi and the city and the surrounding places of employment are provided on contract between the operator and the Gauteng provincial government.

In 2015, Putco, a commuter bus operator that had operated the service since 1996 on a competitively tendered contract, gave notice of withdrawal of its services after 19 years of operations due to the lack of financial sustainability of the contract (Coetzee, E., 2019). This, after the company had tried, unsuccessfully, to re-negotiate the contract terms with the province. The continuous underfunding of the contract was partially ascribed to the escalation formula contained in the contract. This formula included a 15% efficiency factor meaning that 15% of costs would not be escalated and implying that the operator had to increase its efficiency by 15% per annum. In addition, the weighting of critical cost components in the formula such as fuel and labour, as percentage of total operating costs, had not been updated to make provision for changing cost structures within the industry (Coetzee, E., 2019). At the commencement of the contract in 1996, labour cost was weighted at 18% and fuel at 10.2%. These cost elements in 2018 represented 35-40% % and 30% - 35% of total operating costs of the typical commuter bus company in South Africa (SABOA, 2019). A further complicating factor is that in 2009/10 the Department of Transport moved away from escalation formulas in all commuter contracts when it introduced the Public Transport Operations Grant (PTOG), the annual increase of which was determined by National Treasury based on available state funding. These increases had no bearing on actual production costs experienced by operators and quickly led to further underfunding issues for the industry (Cornelius, E., 2019).

After the notice of withdrawal of Putco, the Gauteng Province then negotiated with Autopax (a state-owned long distance bus operator) to take over the services on the same conditions as stipulated in the original Putco contract. The company operated the services from 2015 to 2016 and gave notice of its withdrawal after it failed to negotiate higher transport rates

with the province. The province then approached the City of Tshwane (CoT) (Pretoria) to operate the services. During 2017 the CoT also gave notice of withdrawal and the contract was subsequently put out to a competitive tender in November 2017 (Coetzee, E 2019).

## 5. Characteristics of the Mamelodi contract design

Bidders were required to provide bus services between Mamelodi and service areas that include Mamelodi, Centurion, Midrand, Pretoria central, Pretoria north and Pretoria east (Gauteng Provincial Government, 2017a). The service design made provision for 77 buses with a 10% spare capacity to be provided. Basic information about the number of shifts that had to be operated was provided to bidders that included route kilometres and number of passengers per route. No guarantee was provided about the accuracy of the information and no procedure existed to correct incorrect information once the contract commenced. However, for 24 of the 77 envisaged shifts limited information was available and it was up to the bidders to verify route distances and passenger loads (Coetzee, E., 2019). Bidders could submit alternative bids if they so wished. The number of shifts and route kilometres were broadly in line with the original 1996 contract (Coetzee, E., 2019) In this regard, only the original operator (Putco) had detailed historical information that it could use to prepare its bid. This historical information was not available to the other bidders. The duration of the contract would be for seven years.

The contract is a net-cost contract. It therefore follows that passenger information (numbers) and the fare structure, as well as the overall revenue generating kilometres (subsidised kilometres) was crucial to calculate the passenger revenue and cost of the contract. This information was incomplete (Source: Interviews with bidders).

It was a requirement that the bidders had to have a 30% sub-contracting arrangement with the focus on especially the minibus taxi industry (Gauteng Provincial Government, 2017a). Should an operator fail to include such an arrangement when submitting the bid, it was automatically excluded from further phases of tender evaluation.

The contract did not specify an escalation formula but in subsequent enquiries from the Province, it was confirmed that the annual PTOG increase would be applicable to the contract (Myburg, 2019). The issue with the PTOG supplementary grant increase, as explained elsewhere in this paper, is that the annual increase is not related to the cost profile of the commuter bus industry and that it was expected of the province to supplement the PTOG grant to equal the escalation formula that had to be included in the tender document. This escalation clause was, however, not included in the tender document and bidders had to rely on the PTOG annual increase as determined by National Treasury.

It was a further requirement that bidders had to submit contract values for the first year of the contract. This had to include all operating costs and revenues associated with the bid.

The Mamelodi contract had a pre-qualification stage as well as a four-stage evaluation process (Gauteng Provincial Government, 2017a). The **pre-qualification stage** focused on the level of Black Economic Empowerment of the bidder (certified levels 1 or 2 required), as well as compliance with the sub-contracting requirement of 30% to an Exempted Micro Enterprise (EMEs) or Qualifying Small Operators (QSEs)<sup>1</sup>. **Stage 1** evaluated the basic compliance with the tender requirements; **Stage 2** evaluated the functionality of the tender:

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<sup>1</sup> An EME represents a company with less than R10m annual turnover and a QSE a company with less than R50 annual turnover (Source: Department of Trade and Industry (2014). Broad-Based Black Economic Empowerment Amendment Act, 2013: Amended Broad-Based Black Economic Empowerment Codes of Good Practice: For comment.)

- The operators' previous operational record (4 points)
- Vehicle profile with a bias towards newer vehicles to attract a larger number of points in the evaluation e.g. no vehicles in the fleet would be or is not older than 15 years (6 points); vehicles not older than 10 years at the time of awarding (10 points) and vehicles not older than 5 years (30 points)
- Depots – access to a depot (20 points)
- Services and maintenance – the submittance of a maintenance plan to guarantee fleet reliability of at least 98% during the contract period (20 points), and
- Additional/spare capacity vehicles –10% of the fleet size (10 points)

The **third stage** evaluation consisted of interviews with prospective operators to discuss the operational capability of the company (40 points); quality of service (20 points); fleet tracking systems, electronic fare collection systems and contract compliance (collectively 20 points) and financial sustainability including that the bidder had to demonstrate that the operations will fully cover costs (20 points).

In **Stage 4** of the evaluation pricing and B-BBEE was evaluated.

## **6. Results of the bidding process**

The value of the respective bids were read out by the Gauteng Department of Roads and Transport (GDRT) and subsequently published by the Gauteng Province on 12 January 2018 (Gauteng Provincial Government, 2017b). In some cases, the values published included the combined value of another service area (Sedibeng) and clarity had to be sought from the GDRT in order to separate the Mamelodi bid values from the Sedibeng values. This proved difficult and the GDRT did not provide the information. Subsequent enquiries to the GDRT resulted in a list of contact names and contact numbers. Contacting the bidders proved to be extremely difficult as many calls remained unanswered or agreed meetings did not take place.

Attempts to obtain the required operational and financial information of the respective bidders from the GDRT and the Council for Scientific and Industrial Research (CSIR) that designed the services (the GDRT contracted the CSIR to design and develop the tender documentation), proved difficult as a “non-disclosure” agreement was in place between the institution and the GDRT. A Promotion of Access to Information Application (PAIA) in terms of The Promotion of Access to Information Act, 2000 (Act No. 2 of 2000), was eventually lodged at the Gauteng Provincial Government to access the respective bidders' operational and financial information. The results of this application was still awaited at the time of the submittance of this research paper for the conference.

In studying the list of twelve bidders, as well as contacting bidders on the list provided by the GDRT, it was established that some companies did not tender for the Mamelodi contract which resulted in the removal of four companies. The remaining eight companies were all contacted by phone to secure meetings to discuss their experiences with the tender document and requirements, their concerns and, in general, how they priced their services given concerns about the tender design.

Interviews were secured with five bidders that provided financial and operational information. In discussions with bidders, it was established that three of the bidding companies had extensive experience with public transport contracting compared to two bidders that either



had no experience or limited tender experience, mainly based on scholar service contracts that are much less complicated and mostly route-based as opposed to the network-based nature of the Mamelodi contract.

At the time when the tender was put out to a competitive bid its annual value to the incumbent operator was R 36,7 m (this is based on the PTOG subsidy grant for Mamelodi). The following table sets out the respective bids received for the service (in no particular order):

**Table 1: Operational and financial data of the respective bidders (at the end of year one of the seven year contract)**

	Bidder A	Bidder B	Bidder C	Bidder D	Bidder E
Revenue km (subsidised)	1 805 738	1 798 777	2 900 000	1 876 092	1 893 189
Positioning km (unsubsidised)	888 157	874 166	500 000	976 212	867 000
Total km	2 693 895	2 672 943	3 400 000	2 852 304	2 760 189
Annual passenger trip estimates (cash and seasonal)	397 760	2 705 400	715 000	970 652	330 300
Passenger revenue estimates	R 28 000 000	R 40 581 000	R 13 872 000	R 25 502 096	R 23 500 500
Subsidy requirement	R 83 000 000	R 46 000 000	R 66 000 000	R 72 843 872	R 71 660 000
Subsidy/pass trip estimates	R 208.67	R 17.00	R 92.31	R 75.05	R 216.95
<b>Subsidy as % of overall tender amount</b>	<b>75.35%</b>	<b>53.25%</b>	<b>82.63%</b>	<b>79.25%</b>	<b>75.30%</b>
Overall tender amount at the end of the first year	R 110 149 535	R 86 390 805	R 79 872 000	R 91 912 120	R 95 160 400
<b>Subsidy as % of available subs.</b>	<b>+120.2%</b>	<b>+22.0%</b>	<b>+75.1%</b>	<b>+93.2%</b>	<b>+90.1%</b>
Available subsidy from the TA	R 37 700 000	R 37 700 000	R 37 700 000	R 37 700 000	R 37 700 000

Source: Compiled from data supplied by bidders

From the table it can be seen that excepting for one bidder, bidder B, the subsidy as percentage of the overall cost of producing the service exceeds 70%. This is regarded as exceptionally high as, in South Africa, the subsidy as percentage of overall costs is approximately 40% to 60% (depending on the type of operation) (Cornelius, E., 2019).

In addition, it is evident that the subsidy requirement as percentage of the available subsidy far exceeds the funds that the authority had available with four of the bids varying between 75.1% and 120.2% of the available subsidy amount.

In terms of overall kilometres to produce the service, the respective bids were not that different, excepting one bidder, bidder C, that estimated significant more kilometres.

From the information contained in the table, a number of figures were compiled to visually depict critical information differences between the respective bidders.

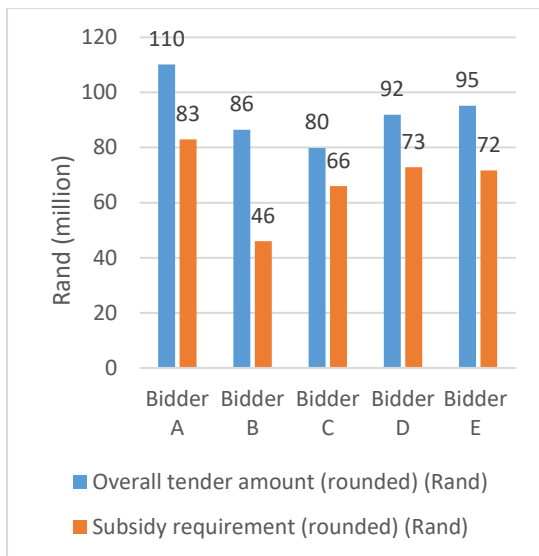


Figure 2: Overall tender amount versus subsidy requirement (Rand values)

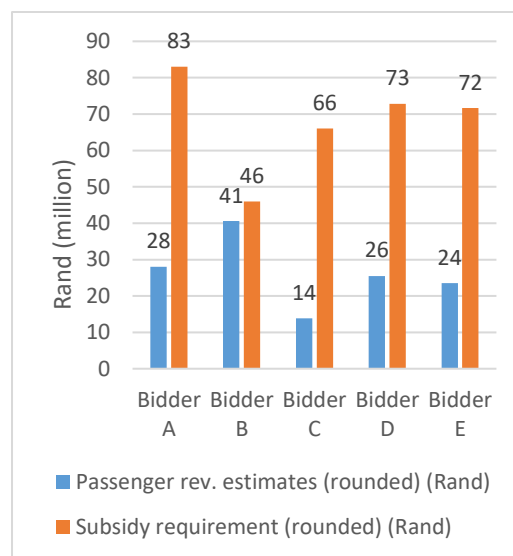


Figure 3: Passenger revenue estimates versus subsidy requirements (Rand values)

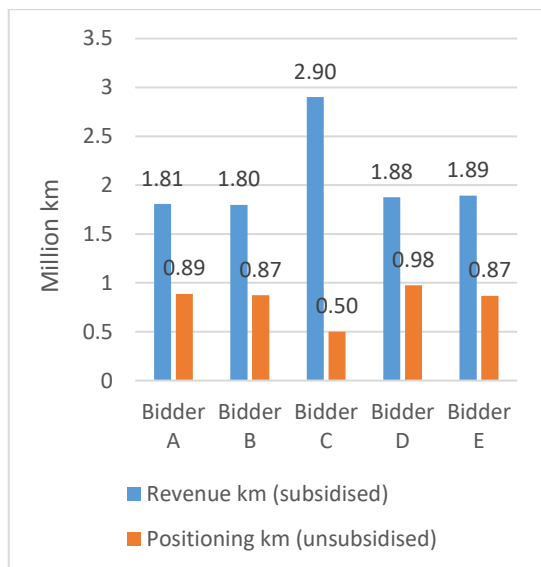


Figure 4: Revenue km (subsidised) versus positioning km (unsubsidised)

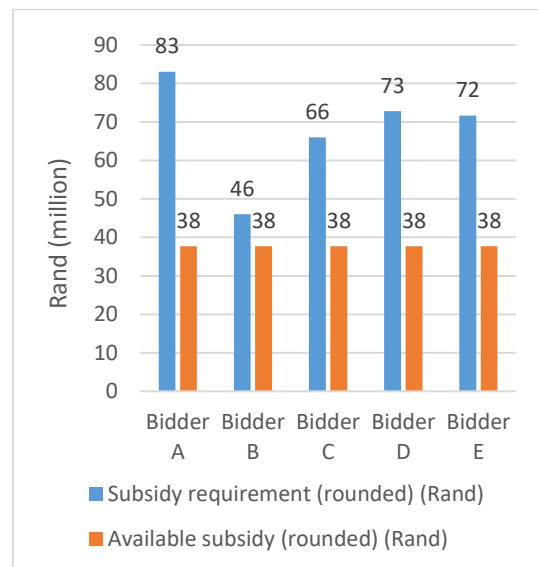


Figure 5: Subsidy requirement versus available subsidy (rounded) (Rand values)

It can be seen that the largest variations amongst the respective bidders are to be found in the revenue estimates resulting in significant differences in subsidy requirements. These variations amongst bidders could, in part, be explained by the following:

- Passenger trip numbers are directly linked to the information supplied in the tender document and timetables provided, but, as mentioned in the background section, there was no passenger information about a number of shifts. Bidders had to

estimate these passenger numbers, especially related to the missing shifts (24 of 77). As passenger revenue (linked to passenger trips and cost per trip) consists of a significant portion of an operators' overall revenue, the lack of an accurate estimate has a direct impact on the subsidy required to operate the service in a sustainable manner.

- The subsidy requirement varies significantly amongst the bidders. The lowest figure, and also the closest to the available R 37.7m that the authority had for the service, was R46m<sup>2</sup> and the highest R 83m, more than twice the amount that the authority had available for the service. This difference can, at least in part, be linked to the lack of accurate passenger trips and therefore revenue estimates.

## 7. Discussion of the results

Following interviews with the bidders, the main issues with the Mamelodi contract that bidders took into account that had an impact on their bid prices, are broadly classified under five distinct areas (in no particular order):

### 7.1 Contract escalation clause

The contract did not include an escalation formula (Gauteng Provincial Government, 2017a). It was a requirement that the bidder had to tender for the first year of operations – this cost would then escalate annually for the following six years in terms of the PTOG annual percentage increase published in the February every year. This rate of escalation is not linked to the costs of bus operations and is determined by South Africa's National Treasury. To provide context to this issue, the following table indicates the historic year-on-year difference between the PTOG escalation percentage and headline Consumer Price Index (CPI), fuel price escalation, labour (wage) cost escalation over the ten year period during which the PTOG has been in place:

**Table 2: Comparing the December year-on-year PTOG percentage increase to percentage increases in Headline CPI, fuel and wage costs**

% Change	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
PTOG (See note a)	-6.00 (See note e)	5.10	5.00	3.05	4.45	6.15	2.21	9.33	5.97	3.24
Headline CPI (See note b)	7.1	4.30	5.00	5.60	5.70	6.10	4.60	6.40	5.30	4.70
Fuel Price Increases/decrease (See note c)	-16.9	8.1	37.89	8.59	10.19	1.28	-17.4	1.94	17.51	13.30
Wage increases (See note d)	11.00	10.00	9.00	8.50	10.00	9.50	9.00	8.20	9.00	9.00

Sources: (a) Division of Revenue Acts (2009-2018); (b) Statistics South Africa (2009 – 2018); (c) Department of Energy. Wholesale Price of Diesel. December year- on-year (Gauteng pricing); (d) Annual Wage settlements: Bargaining Council for the Road Passenger Transport Industry (SARPBC); (e) At the introduction of the PTOG in 2009, the overall available subsidy was 6% lower than the previous year's subsidy

<sup>2</sup> This bidder did not qualify for the tender as its B-BBEE partner withdrew one week before bids had to be submitted leaving insufficient time to re-negotiate a new agreement with another partner. The company was therefore disqualified based on the pre-qualification criteria mentioned in section 5 above.

The information in Table 1 is depicted graphically as follows:

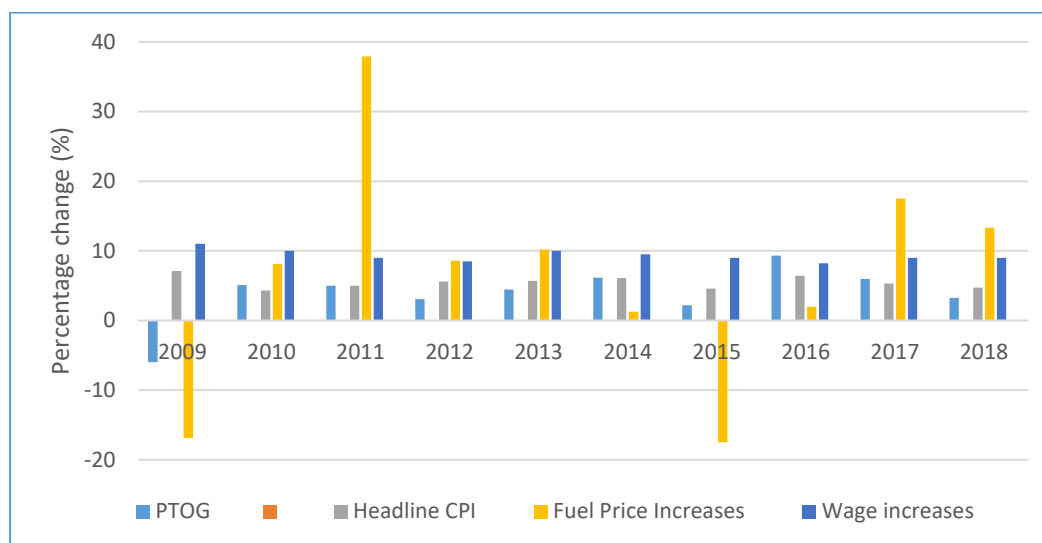


Figure 6: Comparing the year-on-year PTOG increase to increases in Headline CPI, Fuel and Wage costs  
Source: Table 1

From the figure it can be seen that the PTOG increase, excepting for two years, is lower than fuel and Headline CPI increases, and in all the years from 2009, always below the annual wage increase. In all of the existing contracts the escalation formulae made provision for fuel and labour cost increases (albeit that the weighting of these costs in the overall formula has never been adjusted). Over the seven year contract term operators regarded this risk as virtually unmanageable as it would result in a serious underfunding situation over the short to medium term of the contract.

## 7.2 Data correctness

The authority did not guarantee the correctness of the data that was supplied and, in addition, important data such as passenger trips, the fare per passenger trip per route (critical for revenue estimates), timetable information, route kilometre distances and bus specifications were either incomplete or not available. This is problematic as the bidders had to bear the revenue risk (passenger fare box revenue) as well as the production cost risk (cost of rendering the service) for a seven year period. In the case of the passenger revenue risk, bidders had to estimate the number of passengers to be transported over the 77 shifts and had to make assumptions about the fares to be paid by the estimated number of passengers on the services. In addition, as there was incomplete information about the scope of the services i.e. shifts to be operated; the operators also had to estimate their revenue passenger kilometres as well as positioning kilometres to arrive at the estimated total costs of producing the services.

The lack of complete and trustworthy data would have resulted in bidders estimating critical revenue and cost elements, thus shifting a part of these risks to the authority by means of higher subsidy requirements. The following hypothetical example shows the shifting of revenue risk to the authority due to a lack of detailed passenger revenue estimates:

**Table 3: Example of shifting cost risks to the authority**

	Complete passenger revenue data	Incomplete passenger revenue data
Total cost of producing the service	R 100 000 000	R100 000 000
Total passenger revenue (what it could have been based on detailed information)	R 50 000 000	
Passenger revenue estimates (based on the best estimate of the operator)		R 20 000 000
Authority subsidy required	R 50 000 000	R 80 000 000

Source: Compiled by the author

### 7.3 Lack of a mechanism to adjust data

The tender did not provide a guarantee for data correctness and did not provide a mechanism for adjustments should the passenger numbers be lower or higher than the estimated number at the outset of the operation– the operator had to verify the information. To verify the data is virtually impossible, as the potential bidder would have to undertake a detailed route survey to determine passenger numbers per route as well as distances travelled by passengers on such routes to determine potential fare box revenue per route.

In a net cost contract it is critical that estimates of passenger trips and the prescribed fares are accurate and known to the bidder so that the fare box revenue can be calculated as accurately as possible. This portion of the bidder’s revenue (the other being the actual subsidy) is critical, especially over the seven year contract term. As the bidder has virtually no ability to independently verify passenger numbers (the authority normally ought to have accurate information as it is the contracting authority that monitors the service) the bidder had to accept the risk that actual passenger numbers could be lower than estimated on the day that operations begin, than provided by the contracting authority and/or estimated by the bidder. To provide further context to this issue, in the case of the Mamelodi contract, passenger numbers have been declining over many years, as is evident from the figures supplied by Putco over the period 2006 to 2015.

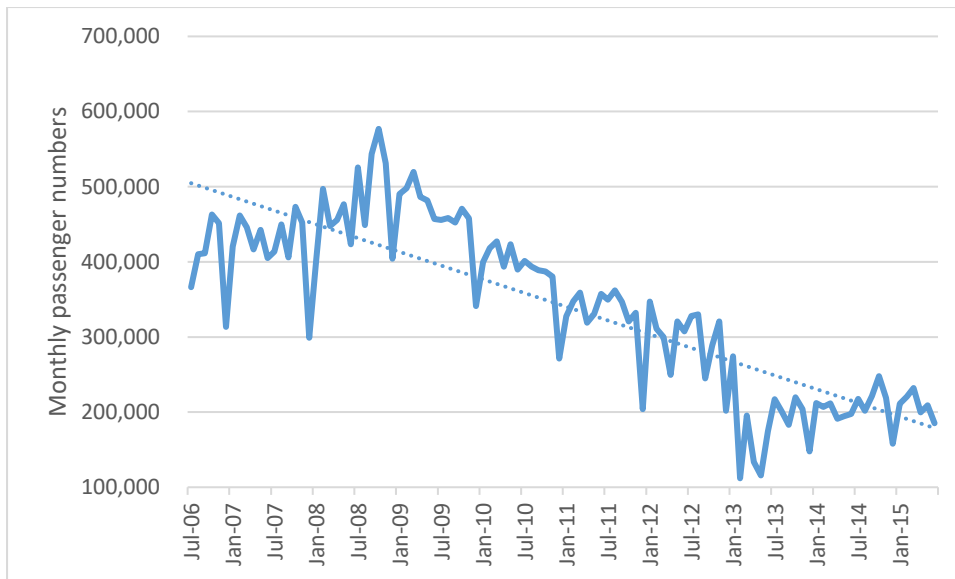


Figure 7: Passenger numbers in the Mamelodi contract July 2006 to June 2015  
 Source: Data supplied by Putco while it operated the Mamelodi service

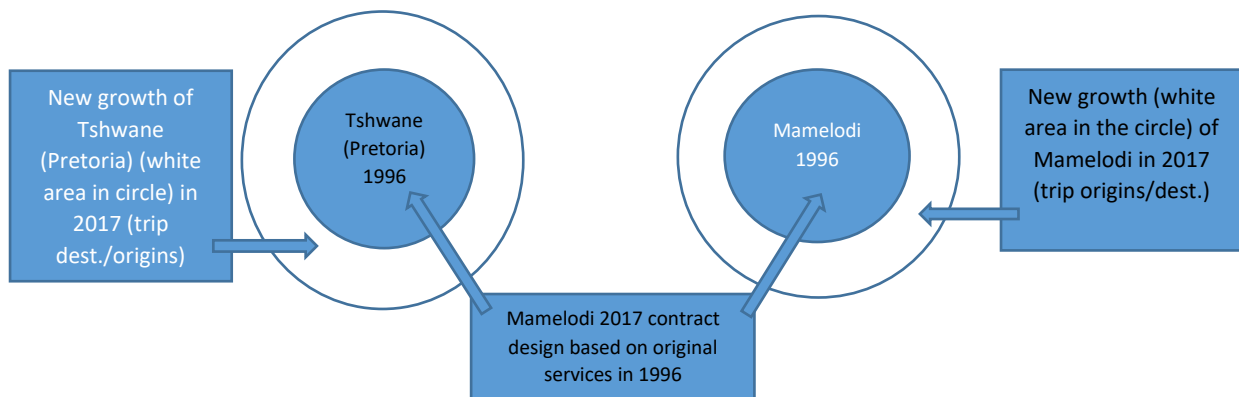
#### 7.4 Sub-contracting 30% of the service

A pre-qualification requirement for the tender was that bidders had to sub-contract 30% of the contract to Exempted Micro Enterprises (EMEs) or Qualifying Small Operators (QSEs). It was also a requirement that a shareholders agreement be submitted at the time that the bidder submitted the tender. The nature of the set-aside could be determined by the bidder in conjunction with the EME/QSE enterprises e.g. a number of buses, operating kilometres, operating area, route/s etc. These enterprises had to be sourced from the area in which the contract is operational.

Based on interviews with bidders it is claimed that insufficient time was allowed to conclude these agreements (the tender was put out during the first week of December 2017 and closed on 12 January the following year which left insufficient time to put agreements in place over a major holiday period). Bidders also mentioned that this requirement increases the costs of the tender as the main operator has to accept the risk of the sub-contractor not performing as it remains responsible for the overall contract. Many operators also envisaged ongoing costs in terms of support via training, maintenance of vehicles, oversight over the sub-contractor's operations and general administrative arrangements related to managing the sub-contractor. Bidders also mentioned that, excepting for one bidder, bidders could not put the required shareholders agreements in place due to the time constraints mentioned above. Despite this bidder meeting the pre-qualification requirements for the tender, its overall price (subsidy) for the service was not acceptable to the authority.

#### 7.5 Additional services

One bidder mentioned a difficulty with the overall scope of the contract design, as additional services due to in-migration to the Mamelodi area between 1996 and 2017 was not taken into account in the tender design, with the bidder having to figure out how to operate these additional services (and kilometres) without additional funding (Coetzee, E, 2019). This issue can be depicted as follows:



Source: Author's construct

## 8. Conclusions

From the analysis of the Mamelodi contract information, the information contained in table 1 and interviews with the respective bidders the following overall conclusions are made:

- The significant increase in subsidy requirements could be attributed, at least in part, to the factors mentioned below but during interviews it was also mentioned that the Mamelodi service had been underfunded for a long time. This service was first contracted in 1996 with no review of the structure of the escalation formula (the weightings of the respective cost elements) and with the introduction of the PTOG in 2009, it has been shown that the annual escalations did not reflect the typical cost of a commuter bus company (see table 2 and figure 1). The extent of this underfunding would be difficult to determine in relation to the contribution that the other elements, mentioned below, contributed towards the higher subsidy requirements.
- The lack of complete passenger information (and the lack of a guarantee about the accuracy of the information supplied) led to major estimated differences between the respective bidders, thus affecting their passenger revenue estimates and, in the end, resulting in varying needs for subsidies. More accurate passenger information could have reduced this revenue risk to more manageable levels. In addition, if the contract had some correcting mechanism in place to adjust passenger numbers once services had commenced, this particular risk could also have been more acceptable to bidders.
- Bidders had a major concern with the fact that for 24 of the 77 shifts no information was available and viewed it as an impossibility to conduct such surveys themselves. Estimates had to be made of all the revenue and cost factors for these shifts in their bid documentation. The authority ought to review its procedures in this regard; incomplete revenue estimates will result in revenue and cost risks being transferred to the authority by means of higher subsidy requirements.
- The lack of an escalation formula in the bid document and the inclusion of the PTOG grant as the mechanism of cost escalation, weighed heavily on the minds of the people preparing the respective bids, especially seeing that the contract would run over seven years. It was not possible to quantify this effect but interviewees had a major concern and certainly considered this in their pricing of the service.

- The setting aside of a portion of the contract (30%) for smaller operators via subcontracting and making it a pre-condition for the bid to be evaluated, was viewed as a major risk. Bidders had difficulty in putting these agreements in place; in the end only one of the overall number of bidders met this pre-qualification requirement. Bidders also mentioned the cost of managing such sub-contractors while still taking responsibility for the overall contract; these costs were certainly costed into their bids resulting in higher subsidy requirements. The authority ought to consider a three month period (ex post) the award, and before operations begin, for the successful bidder to put together an acceptable set-aside arrangement.
- One bidder was of the opinion that the scope of the tender design did not adequately cater for the growth of the Mamelodi area due to in-migration and that this could lead to major issues when the service commenced as such areas would be left without adequate services. This was seen as a major risk as communities could force the operator to render such services and that the operator would not be compensated for such services.

In summary, it is imperative that contracting authorities supply as much information as possible in the design of public transport contracts in order to receive truly cost competitive tenders. It has been shown that in the case of the Mamelodi contract, the lack of accurate and dependable information led to significantly varying bids that “pushed” a significant portion of the respective bidders’ revenue and costs to the authority by means of high subsidy requirements.

It is also important to undertake detailed critical analyses of bids received to understand how bidders viewed the characteristics of their contract designs, condition of operations, contract specifications and revenue and production cost risks (especially in net cost contracts). These views will be evident when reviewing and comparing the respective bid estimates of passenger numbers, passenger revenues, revenue kilometres, positioning kilometres, subsidy requirements the overall cost of the respective bids and interviewing bidding companies. This will assist authorities to improve their contracting procedures and potentially lead to more competitive bids and lower costs for authorities in the rendering of public transport services.

The difficulty that the researcher faced in obtaining the relevant information should be cause for concern. Ideally, once bids had been adjudicated, and a contract awarded, the relevant tender information ought to be made available for analysis (could be on an anonymous basis to protect bidders). This ought to be a condition in the tendering documentation to review bidding procedures by authorities.

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### **Declaration of interest**

The researcher is a strategic adviser to the Southern African Bus Operators Association but the Association had no inputs nor any influence in the choice of research topic. The research was not funded apart from using a traditional university supplied laptop, internet access and



office space. Additional information contained in the discussion about the five areas mentioned in section seven was provided by the author based on research conducted over a period of time in support of the main findings of the interviews.

The views expressed in this research paper represents those of the author and no other institution.

### **Limitations of the research**

The conclusions and discussions related to this research project are mainly based on the experiences of the five bidding companies.

It would have been ideal to interview all the bidders for the Mamelodi contract but this proved to be very difficult to achieve. Nevertheless, three of the bidders are well experienced with network-based contracts and it is unlikely that the results of this research project would have been significantly different should a larger number of bidders have been interviewed and data collected.

It would have been ideal to interview the CSIR to determine the difficulties that it faced in designing the tender documentation, as well as the GDRT officials that had oversight over the tender project. However, all these officials were bound by non-disclosure/confidentiality agreements and requested that permission for data and interviews be sought via the PAIA process. These planned interviews, therefore, could not be conducted.

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