

MINIBUS-TAXIS AS PROVIDERS OF SCHEDULED, PARK & RIDE SERVICES: A CONCEPT FOR STELLENBOSCH

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ABSTRACT

In South Africa the minibus-taxi industry is the most frequent, available and affordable mode of transport, and is a critical pillar of the transport sector, with approximately 65% market share. Stellenbosch experiences high usage of private cars (share of 87%), which results in congestion during the peak periods (Stellenbosch Municipality, 2016); public transport, on the other hand, remains under-used – in particular minibus-taxis. The study looks at transforming the current informal minibus-taxi (MBT) type operations into a formal, scheduled, quality public transport system. Further, we propose that the industry is recognised as a complex, dynamic system rather than a single business (Fourie, 2003; Fobosi, 2013).

By formal we mean the establishment of the minibus-taxi into a formal, corporatised entity, and awarding them the responsibility of operating scheduled services, compliance to prescribed labour regulations such as drivers' hours of work, minimum wages and annual leaves (Mahlangu, 2002). This includes 'park and rides' as suggested by the municipality to alleviate congestion and encourage public transport ridership. It also means designing regulations specific to local problems, objectives and market conditions.

The minibus-taxi industry represents an industry in which employers (taxi operators, associations and cooperatives) and employees (drivers, queue marshals, patrollers, administrators and fare collectors) are associated for the purposes of transporting passengers by road for reward in vehicles other than buses (TETA, 2016).

1. BACKGROUND

Transport plays a vital role in a country's economy and provides accessibility to goods, services and economic activities to improve the quality of life (Department of Transport, 2008). Cities all across the world are today trying to reduce the number of personal automobile trips and promote public transport and the use of non-motorised modes such as walking and cycling (Rodrigue, Comtois and Slack, 2013).

According to South Africa's National House Travel Survey (NHTS, 2013), nearly 4 million of the 15,3 million workers in the country drive all the way to work using private transport, while 3,7 million used taxis. A further 3 million walk all the way, and approximately 1 million use buses as their main mode.

Even though the barriers to mobility in the country have been reduced in the last ten years (NHTS, 2013), several challenges remain when it comes to meeting commuter needs. The NHTS (2013) indicates that urban and metropolitan households tended to wait longer for transport than had been the case in 2003, and that their journeys to work and school took more time. Since the first household travel survey in 2003, there has been a general increase in the percentage of households who use taxis (from 59% to 68,8%), buses (16,6% to 20,1%) and trains (5,7% to 9,9%).

The minibus-taxi industry remains an informal one, yet has a high share of the transport market, at 65% (Walters, 2008; Fobosi, 2013; Mabe, 2015). It is the most available, convenient and affordable mode of public transport, and serves largely the urban poor (Fobosi, 2013; TETA, 2016).

Congestion brought about by the dominance of private cars is an issue in urban environment and is a significant economic cost to the economy. The public transport system (buses, minibus-taxis) is also affected by the daily congestion as they share the road spaces with cars. Often, minibus-taxis drive in the emergency lane or road shoulder to avoid congestion (this has become a habit among drivers, who have to complete enough trips to reach a daily revenue target for the vehicle owners).

This study focuses on Stellenbosch, a university town approximately 50 km east of Cape Town, Western Cape. It looks at how the Stellenbosch Taxi Association might be able to benefit from a minibus-taxi sector that functions as a single operating company that provides scheduled services between Stellenbosch and surrounding areas, and 'park and rides'.

2. PROBLEM STATEMENT

Although the minibus-taxi sector has a 65% market share of transport provision across South Africa, it remains relatively informal and does not operate as a single entity – instead, the industry is made up of individual vehicle owners (who may own more than one taxi) and a number of associations. Minibus-taxis transport 15 -16 million passengers daily (StatSA, 2014; TETA, 2016; Fobosi, 2013).

The Western Cape Province has a significant number of minibus-taxi users, with a mode share of 51,4%. District municipalities such as Eden District Municipality has a 66,0% mode share, Cape Town 54,1%, and Cape Winelands 44,3% (Stats SA, 2014).

Minibus-taxis are busy during peak, but off-peak hours they remain idle at the taxi rank or holding facilities, because there are fewer trips generated. This means long waiting times for those who want to travel during that time.

The unavailability of the minibus-taxis in other areas of the town and in the off-peak periods creates a gap which in most cases is filled by private cars, e-hailing services (such as Uber, Taxify, etc.), and maxi taxi services. There is a lack of passenger facilities on the routes, some stops and ranks, as well as no transportation service available for special needs passengers to use.

While there are opportunities for the minibus-taxi sector to develop business skills to improve services and customer offerings, low participation in these initiatives hinders transformation (Oxford, 2016; Dolan, 2014; Aarhaug, 2016; TETA, 2016). Minibus-taxi operators are looking to their individual interests, which do not necessarily include building an integrated public transport system, where a collective corporate entity is given the authority to run the system.

Further, there is no central source of information on the fares, routes, and frequency of trips.

The study considers ways in which to transform current minibus-taxi operations in Stellenbosch into a scheduled system that will encourage a shift from private vehicle to public transport. Such transformation could include a government subsidy and infrastructure improvements in the industry. Such a system could then offer an alternative to private car owners who travel within Stellenbosch municipality, workers, students and staff of Stellenbosch University.

The minibus-taxi industry currently sustains thousands of small businesses and it is estimated that each operator's success positively impacts the quality of life of at least 15 people within and outside of his or her own family, (this include hawkers, hairdressers, etc. (TETA, 2016). This highlights the importance of the industry in the economy and in transforming South Africa's public transport system.

There is need to develop local solutions for local problems, Go George and cooperative organisation of matatus (minibus-taxis) are good examples where domestic solutions were sought to respond to diverse local needs. These efforts resulted in a regulated and recognised industry with matatu services, charting 102 different routes and hundreds of designated (Taylor, 2004; Patinkin 2014; McCormick et al, 2016; Aarhaug (2016).

3. RESEARCH QUESTIONS

The following questions have been developed for the study:

- How might minibus-taxis be formalised to function as a scheduled public transport operator, and in particular, for a park&ride service?
- How might this work in Stellenbosch?

4. RESEARCH OBJECTIVES

- To highlight the importance of transforming current minibus-taxi operations into a scheduled quality public transport system that service clear local needs;
- To look at establishing a local regulation authority and a single operating entity for the industry;
- To investigate the possibility of minibus-taxis offering ‘park and ride’ services as part of a shift toward increased public transport use.

5. STUDY AREA

The study looks at Stellenbosch, the primary urban centre within the Stellenbosch Local Municipality of the Cape Winelands District Municipality, and the nearby towns and business districts such as Technopark, Khayamandi, Franschhoek, Pniel, Lanquedoc, Klapmuts and others. These areas fall under the Stellenbosch Taxi Association.

The main reason for selecting the above study area is the size of the area and the ability to conduct a practical study on the taxi routes in the area.

The minibus-taxi industry is the dominant mode of public transport between the towns, serving both commuters and long-distance passengers in Stellenbosch (Stellenbosch Municipality, 2016; Gaibe and Vanderschuren, 2010). There is only one formal scheduled bus service from Stellenbosch to Somerset, and this is run by Golden Arrow Bus Services (GABS) in the morning and afternoon. The town is also served by the regional rail service, Metrorail. Current taxi routes mainly serve commuters travelling within towns or between towns within the municipality, as well as farm workers travelling along the main routes. (Gaibe and Vanderschuren, 2010).

Three taxi associations operate within the Stellenbosch Municipal area: Stellenbosch Taxi Association, Kayamandi Taxi Association, and Franschhoek Taxi Association. They operate within five taxi ranking areas in and around the town itself, in Kayamandi, Kayamandi Bridge, Stellenbosch railway station, Sawmills and Bergzicht rank (Stellenbosch Municipality, 2010; Stellenbosch Municipality, 2016).

According to a survey conducted by Stellenbosch municipality, there is a high number of unlicensed minibuses operating on routes in Stellenbosch, which results in an oversupply of transport services (Stellenbosch Municipality, 2016). Therefore, a proposal to introduce a bus system in the presence of the minibuses in such a space could introduce violent competition for routes and duplication of services. Hence the need to transform the current operations into a formal scheduled quality public transport system instead.

a. Synopsis of the Stellenbosch minibus-taxi industry

- 43 routes
- 157 operating licences issued
- 104 vehicle trips per peak hour
- 114 vehicles (surveyed, not total fleet number)

b. Current traffic condition – Employment

Stellenbosch functions almost as a central business district of a city, where a large number of workers (90% of commuters) travel into the city every day by car. There are 30 000 people formally employed in the town (Stellenbosch Municipality, 2016). The figures below shows the distribution of the modes of transport used.

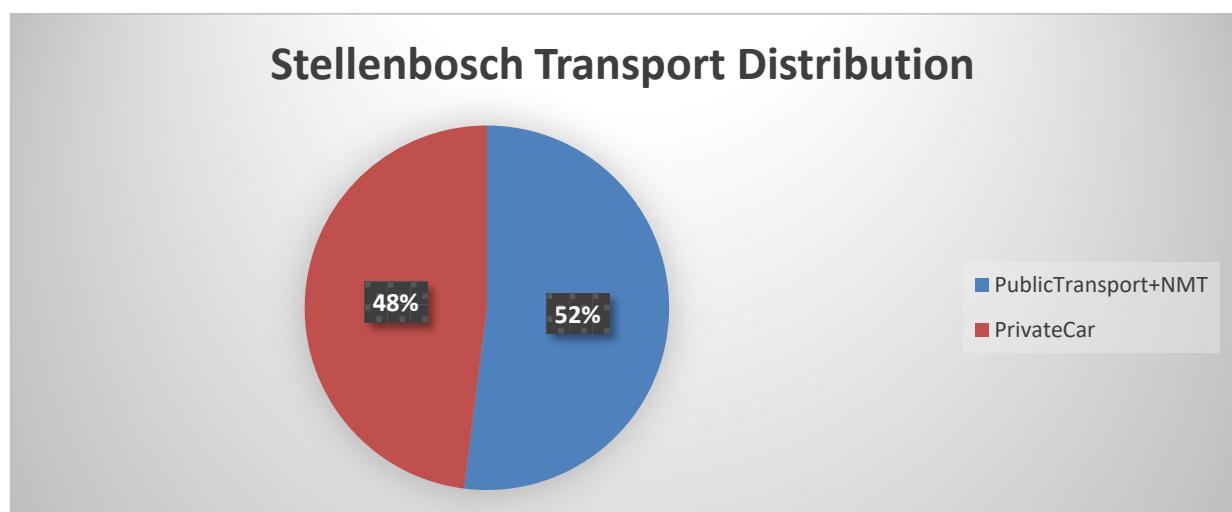


Figure 1. Stellenbosch Transport Distribution (
compiled using the data from the Municipality)

Outskirts Commuters

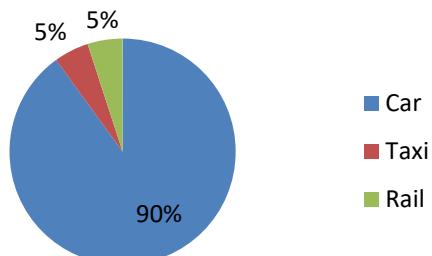


Figure 2. Outskirts Commuters

Inner City Commuters

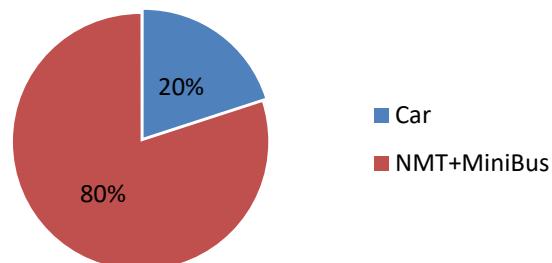


Figure 3. Inner City Commuters

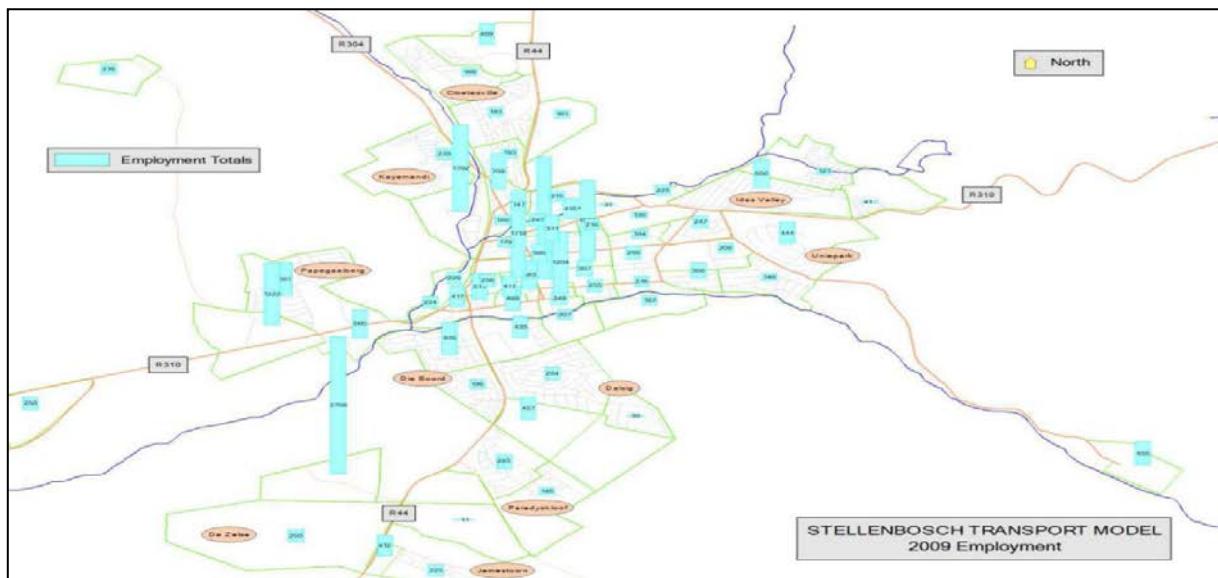


Figure 4: Employment Totals in and around Stellenbosch Town

Source: (Stellenbosch Municipality, 2016)

The travel distributions in Figure 1, 2 and 3 above can be shown in Figure 4, which highlights that the travel patterns of these users are known and their modes transport. Considering this data, it seems clear that minibus-taxis could efficiently operate a 'park and ride' service (Figure 5), including a scheduled service to and from these facilities and work places.

6. PUBLIC TRANSPORT SYSTEM AS PROPOSED BY STELLENBOSCH MUNICIPALITY

The transport vision of the Stellenbosch Comprehensive Integrated Transport Plan (CITP) is to design a sustainable transport system that provides for the basic mobility needs of individuals, supports a vibrant economy and operates seamlessly within and across the municipal boundaries. The plan gives support to the implementation for designing a public transport system on inclusivity (Stellenbosch Municipality, 2016).

A scheduled public transport system is part of an inclusive system and needs to be designed on a network of six routes within the Stellenbosch town as mentioned by the Stellenbosch CITP (2016). The route network proposed is based on a typical 'hub and spoke' layout with the existing Bergzicht Terminal (in town) as the central interchange at which transfers will take place (Stellenbosch Municipality, 2016).

The proposed system operates on a fixed timetable with designated stops operating for 18 hours per day (04:00 – 22:00) on weekdays and weekends with a minimum 400m walking distance to the nearest stop (Stellenbosch Municipality, 2016). This has been achieved in George Municipality (See George case) through commitments from the affected parties as Fourie (2003) argued that we need to approach the industry as a complex system acknowledging that it is a dynamic and unorganised taxi industry than as one part.

'Park and Ride' (as shown in Figure 5) services have the potential to reduce congestion, as was shown during the World EcoMobility summit in Sandton, Johannesburg, 2015, where the minibus taxi industry provided the service (Engelbrecht, et al, 2016).

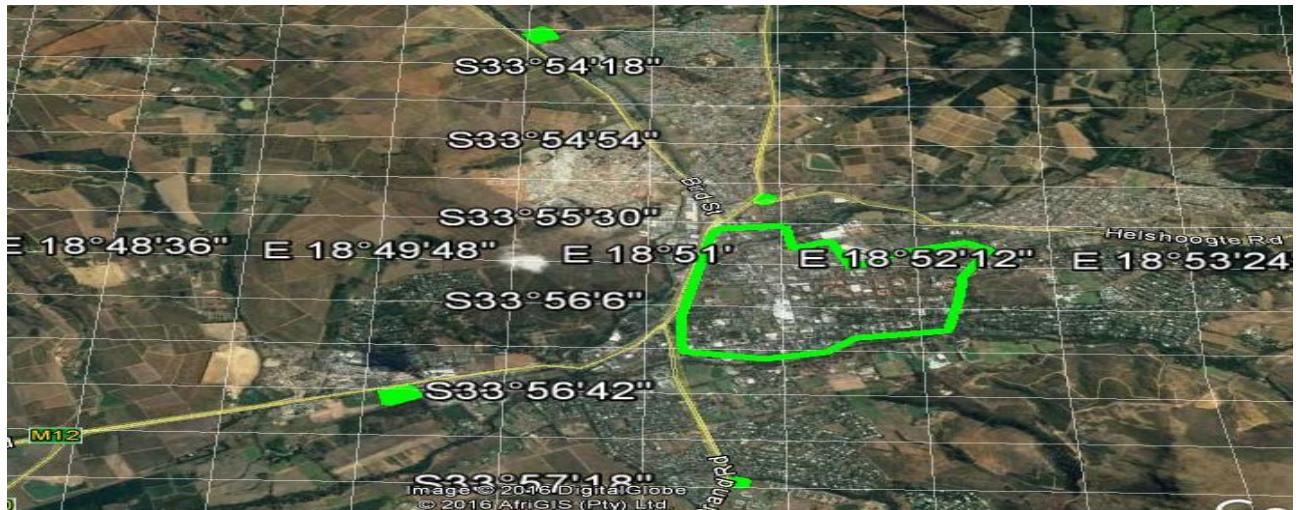


Figure 5: Proposed Park & Ride Facilities (Green Spots)

(Source: Stellenbosch Municipality, 2016)

a. Public transport that caters also for the University of Stellenbosch

The University of Stellenbosch occupies a large portion of the town and plays an important role in influencing decision-making of the area. The university has proposed introducing a scheduled public transport service for staff and students operating on a fixed route and stop network in the Stellenbosch Municipal area. It is proposed that the service will be free to the users and would be funded by the University as an alternative to private cars (Stellenbosch Municipality, 2016).

However, this means that other public transport users might be excluded, as currently such services are provided by shuttle/ scheduled service (through a tender process)

The University's proposal includes a long-distance service such as from Stellenbosch – Belville; Stellenbosch – Eersterivier; Stellenbosch – Kuilsrivier and others.

The proposed schedule for the short distance trips is as follows:

- before 08:00 – One round trip
- 08:00 – 09:00 – Two trips
- 12:00 – 14:00 – Three trips
- 15:30 – 17:00 – Three trips

7. LEARNING FROM GO GEORGE

The George Integrated Public Transport Network (IPTN) known as "Go George" is South Africa's first non-metro integrated public transport system and has been adopted as the pilot project for the future roll out of other IPTNs outside of large cities. The objective of the system was to transform minibus-taxi operations into a formal scheduled quality public transport system. This included engaging fully with the local operators with the objective of

canvassing their full participation, establishing them into a corporate entity, and awarding them the responsibility of operating a 12-year negotiated bus contract as permitted in terms of Section 41 of the National Land Transport Act (NLTA – Act 9 of 2009) (Robertson, 2016).

The network now includes:

- Over 25 routes across George servicing an initial fleet of about 90 buses;
- A scheduled and safe, 18 hours a day, seven days a week service;
- Fare policy & structure based on a user affordability criteria, where fare setting is not linked to an operations cost recovery model;
- Partnership with existing operators in the area, with negotiated contracts;
- Universal access, making it possible for passengers with a wide variety of needs to use it;
- A monitored services to safety in the system in an effort to comply with Road Traffic Act and to penalise operators who do not comply with contracted obligations. (Western Cape Department of Transport and Public Works, 2014; Robertson, 2016; <http://www.gogeorge.org.za/>)

8. PROPOSED SOLUTIONS

a. Regulation as part of the solution

The minibus-taxi industry should not be seen as a problem but should be part of the urban transport solution in a city. Therefore, it will be important to take an inclusive approach in transforming the industry to a scheduled public transport system. Strict taxi regulation is important to address consumer interests, public safety, congestion, city image and to maintain balance between the taxi supply and demand. Service attributes such as the roadworthiness of taxi's safety, behaviour of taxi drivers, and taxi fares are of high importance to passengers (Department of Roads and Transport, 2014).

Taxis can be regulated in terms of quantity, quality, and economic (Aarhaug, 2016):

- Quantity regulations address the number of vehicles;
- Quality regulations address the operator's qualifications to operate, vehicle standards and insurance;
- Economic regulations relate to fares (Aarhaug, 2016).

This can be achieved through:

- i. *Empowering the regulator* – have a local regulatory authority with necessary tools such as the legal or judicial system in the regulation to withdraw licenses from unsuitable individuals and the right to audit the industry and proper enforcement.
- ii. *Entry regulation* – the entry to the market should be regulated by limiting the number of permits or licences issued and allowing suitable qualified candidates to apply for permits. (Aarhaug, 2016).
- iii. *Domestication of the taxi regulation* – the taxi regulation should be tailored to local problems, objectives and market conditions because taxi markets are local in nature (Aarhaug, 2016; Mazrui, 2015).

b. Labour Issues

The shift to formalise the minibus taxi industry should assist the industry to move from a practice of exploitative labour relations between owners and drivers (Mahlangu, 2002), which seemingly maximise profit at all costs, to one that is law-abiding.

The formalisation process should consider the labour process within the taxi industry, as well as the linkages between the formal-informal sectors that form part of the broader South African economy. According to Fobosi (2013), any formalisation process will continue to face challenges as long as it is a top-down process, and does not consider the nature of work in the industry. The Department of Labour, Department of Transport, the local authorities and the industry must be able to work closely together on labour related matters, subsidies, and facilitation of workshops to provide an engagement platform (Karol, 2006).

c. Dedicated team and Law enforcement

The Stellenbosch Municipality should consider the establishment of a dedicated structure or team for this purpose, which will interact closely with the taxi operators. A dedicated team of Inspectors and Law Enforcement Officers should be set up to deal with public transport law enforcement for a successful implementation. This will assist to improve the quality of the service and safety on public transport services. It is vital to establish a communication forum as suggested by the CITP with existing operators to meet regularly on matters concerning the public transport industry including issues and concerns, public transport facilities and law enforcement (Stellenbosch Municipality, 2016).

9. RECOMMENDATION AND CONCLUSION

According to Department of Transport (1996) White Paper on Transport Policy, regulated competition will mean that the minibus-taxi industry will have to be formalised, and measures introduced to enhance its economic viability.

Establishing a single operating entity that incorporates formal operations and scheduled services within Stellenbosch Taxi Association complements what the Taxi Recapitalisation Program (TRP), among other proposed interventions, aims to achieve. The provincial permit board should be brought to work closely with the local municipality.

A formalised industry means compliance with prescribed labour regulations such as drivers' hours of work (48 ordinary hours per week maximum), overtime pay, minimum wages, meal intervals and annual leave (Mahlangu, 2002). Thus, the Department of Transport and Department of Labour plays an important role in achieving this transformation. For any formalisation process to succeed, this means approaching the industry as a complex system (Fourie, 2003).

It is important for the provincial government to establish bodies that will be responsible for monitoring and overseeing the operator and other related contracts, and for dealing with any engagements with the public as suggested in the Go George situation (Robertson, 2016). Government (Municipalities) must agree of the quality of service to be delivered to the public and need to take ownership, and fulfils its mandate as provided for in the NLTA.

A proper ticketing or fare collection system is necessary in a formalised system. This arrangement will render the proposed municipal public transport system more economically viable (Stellenbosch Municipality, 2016), because all resources will be focused to a collective system.

It is important to note that non-metropolitan cities are able to achieve a working public transport system as well (the case of George). The existing operators can be encouraged to participate, and will take up the challenges with the appropriate levels of support and a measure of compensation. Having a fare policy and structure that does significantly reduce the share of household expenditure on transport is critical.

Institutional and operational skills within the sector are in urgent need of improvement (Robertson, 2016). A capacity development collaboration between the Stellenbosch Municipality, the local taxi association, and the University, could be designed in such a way that a 'park and ride' programme has a greater chance of success. This could include collaboration in designing the routes, timeline and deliverables for the project.

The study acknowledges that while minibus-taxi industry in Stellenbosch is not substantial, there is significant opportunity and potential for growth, and subsequently to address the mobility challenges faced by the town.

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