

# **QUALITY INCENTIVE CONTRACTS TO IMPROVE WOMEN'S SAFETY ON PUBLIC TRANSPORT**

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## **1. INTRODUCTION**

This paper presents a potential new approach to improving women's access to public transport, using the case study of Chittagong, the second largest city in Bangladesh. The city is considering the implementation of a Bus Rapid Transit (BRT) system, and this scheme could be implemented as part of the concurrent bus reform process that would come with this. The scheme presents an ambitious and aspirational approach to countering sexual harassment towards women seen all over the world.

### **1.1 Global Context**

The UN's Sustainable Development Goal (SDG) 5 is to 'Achieve gender equality and empower all women and girls' (UN WOMEN, n.d.). This is an ambitious goal, as conditions in many developing countries across the world present issues for gender equality, which are reflected in various aspects of urban life. Transport is just one such aspect through which gender inequality can be reinforced.

Scholars have been aware of women's fear of vulnerability to sexual harassment and assault for more than twenty years (Law, 1999). For many years, all over the world, women have employed a variety of self-protection strategies and behavioural constraints (e.g. travelling with an escort and avoiding certain places/types of transport) (Pain, 1991; Valentine, 1989). These self-preserving measures serve to significantly limit their mobility, and subsequently their opportunities.

Some national and international bodies have taken steps to attempt to improve these conditions. UN WOMEN, for example, have operated the 'Safe Cities' Global Programme since 2010, building on this with the 'Safe Cities and Safe Public Spaces'

program, with flagship projects in Quito, Cairo, New Delhi, Port Moresby and Kigali. These projects represent the first-ever global programme to implement tools to prevent sexual harassment and other forms of sexual violence against women and girls. On a national scale, significant commitment to women's safety has been relatively limited, with 45 countries in the world holding no legislation specifically pertaining to sexual harassment (UN WOMEN, 2018).

Whilst this is often most problematic in developing countries, it is an issue which has not been fully remedied even in more developed cities, where women are also less likely to safely use public transport than men, particularly alone or at night (Law, 1999). More importantly, these crimes against women's safety commonly go unreported. Even in London, 90% of cases of unwanted sexual behaviour on public transport go unreported (TfL, 2018). These problems are symptomatic of inequalities outside of transport, but which we might attempt to remedy through more concrete changes within the transport system.

Ensuring that public transport is available to all is key to a sustainable city. Without guaranteed safety (and justice in cases of incidents), women are forced to preferentially use alternative modes. In developing countries in particular, this might include non-motorised transport (NMT) including walking and cycling, or private transport such as rickshaws, taxis or private cars. These modes tend to be more expensive than public transport, and private transport is less sustainable in terms of both road space capacity and emissions (Peters, 2013).

## **1.2. Case study context - Chittagong**

The concept presented here is given in relation to the city of Chittagong in Bangladesh. Chittagong's women face many of the same challenges as those across South Asia, and further afield. The concept presented could be implemented using the same principles in many cities across the world.

Chittagong is located on the banks of the Karnaphuli River between the Chittagong Hill Tracts and the Bay of Bengal; it has been a natural and important port for Bangladesh for centuries, and continues to be to this day.

*Table 1: Key population statistics for Chittagong*

Metro area population	6,500,000
City Population	2,592,439
Population density (people per sq km)	16,725
GDP (USD per capita)	5,492
Poverty rate	11.3%
Slum dwellers	600,000

Chittagong's port is one of its key employment centres, home to the Chittagong Economic Processing Zone (CEPZ). Approximately 40% of the heavy industrial activities in the country take place in Chittagong, from pharmaceuticals to cement. The service sector is the highest employment type in Chittagong, followed by industry (Bangladesh Bureau of Statistics, 2010). Bangladesh already has a relatively high female participation in the workforce (around 36% in 2010), the potential of which could be further unlocked by better access to transport (Rahman & Islam, 2013).

Figure 1: Map showing location of Chittagong in context of South Asia (*World Atlas*).



### 1.3 Transport context - Chittagong

The transport system in Chittagong suffers from a variety of operational challenges which affect everybody who lives there. These problems include a lack of reliable and high-quality infrastructure, minimal regulation of bus routes and few safety standards. Bus reform, possibly to a Bus Rapid Transport (BRT) system is being considered in Chittagong, which would facilitate network consolidation and change in operation to the current system.

A range of public buses serve the city, with larger intercity buses serving journeys outside of the city, as well as longer distance train services. Informal transport is also common in Chittagong, as in most of South Asia, with rickshaws and natural-gas-powered auto-rickshaws (known as CNGs) plying the streets. These present an issue for the rest of the road-based public transport network, as they obstruct junctions and key links while waiting for passengers. Car ownership and taxi use are relatively low, as are cycling and motorbike use.

*Figure 2 - Pedestrian and vehicle congestion in Chittagong City Centre (ITP, 2017)*





Many people work in textile and garment factories in the southern Economic Processing Zone (EPZ), for which the factories provide dedicated buses. A sufficient improvement to the current system may even remove the need for the factories to provide their own buses, potentially unlocking a significant revenue base for the bus operator/transport authority, and improving patronage for the reformed bus system. Provision of an improved bus system may also reduce the likelihood of the city transitioning to an auto-dependent society, as has been observed in many cities.

#### **1.4 Safety in the public transport network**

Many cities in developing countries have unsafe public transport. From dangerous driving of the famous Matatus in Nairobi (Habyarimana & Jack, 2011) to extreme overcrowding on India's buses (Katz & Garrow, 2012), public transport is of a generally lower standard than in more developed countries. This has various implications including injuries and deaths, but also increasing car usage and related impacts on environment and health. Unsafe and unregulated public transport disproportionately disadvantages people of lower socio-economic status, because these modes are their only economically viable option.

As an extension of this, low quality public transport also often disproportionately disadvantages women. In Chittagong, there are few safety regulations for the operation of buses, often leading to dangerous activities such as over-crowding to the point of 'hanging out the door' (Katz & Garrow, 2012). As women are generally more risk-averse than men, and due to cultural expectations for them to behave and dress in a certain way, this often represents a greater barrier to them in comparison to men.

Personal safety at the actions of other passengers is a concern which affects women specifically, with concerns about sexual assault brought to the fore after the Nirbhaya case in 2012. In this case, a 23-year-old medical student was raped and fatally assaulted on a public bus in Delhi, India, drawing global attention to the dangers faced by women on public transport, particularly in South Asia (BBC News, 2015). There are generally few mechanisms to enable the reporting or follow-up of these cases, which are seen as a significant barrier to women's access to public transport in Chittagong.

In Chittagong, as in many areas of the world, 'every-day' verbal and physical sexual harassment as well as more violent assault also reduces access to public transport for women. Harassment is sometimes referred to as 'eve-teasing' and is considered a major determinant in women having lower perceived (and actual) safety on-board public transport, causing them to take alternative modes (Bhatt, Menon, & Khan, 2015).

Culturally, there is a level of blame placed upon victims of these incidents, which may lead to victim intimidation or non-reporting of cases (BBC News, 2015). Furthermore, in Chittagong, investigation of incidents which are reported is minimal, leading to a feeling of hopelessness in reporting, as 'nothing will come of it'. Bus drivers and conductors are (almost without exception) male, and have little incentive to intervene in incidents involving women. In some cases, they have even been found to be complicit in the incidents (BBC News, 2015).

## **2. IMPROVING PUBLIC TRANSPORT SAFETY – CASE STUDIES**

The selected interventions focus on restructuring the public bus system in Chittagong, on the understanding that buses provide cost-effective, environmentally sustainable transport to the greatest number people. Most important though, both for fulfilling the SDGs, and for improving patronage, women need to be prioritised in their access to public transport, as one of the first steps in creating a fair and sustainable transport system. The selected interventions use a range of initiatives or introduction of new regulatory measures to deliver behavioural change. These initiatives draw inspiration from the following case studies:

### **2.1. Zusha! Road safety programme, Nairobi, Kenya**

The Zusha National Road Safety Campaign aims to reduce road accidents by encouraging passengers in Public Service Vehicles (PSV) to speak out directly to their drivers against reckless driving. This is implemented by placing stickers in PSVs which encourage passengers to speak out to their driver, and is complemented by messaging through radio, billboards, social media, newspaper adverts and articles. Initial research based on insurance claim data has suggested that these measures have resulted in a 50% reduction in total accidents and a 60% reduction in accidents with injuries or fatalities (Zusha!, 2015; Habyarimana & Jack, 2011).

However, this raises the question of enforcement. The simple beauty of Zusha! is that it enables passengers to police the driver themselves, putting emphasis on a collective desire for better safety. Additionally, although the bus driver is in a relative position of power over passengers, passengers out-number the driver significantly, meaning they hold power with their collective wish for safety. Neither of these things are true for the Chittagong case, as women are commonly outnumbered significantly by men on buses in Chittagong.



Figure 3: Zusha! advert stickers placed inside matatus (Source: Zusha!)



## 2.2. UK text-reporting of anti-social behaviour

Across the UK, local and transport authorities implement text-based services for reporting anti-social behaviour, or specifically sexual harassment, on public transport. In London, one year of the 'Report it to stop it' campaign has increased the proportion of reported sexual crimes on public transport by 35%, and an increase in arrests by 29% (TfL, 2018).

Figure 4: Advertisement for 'See Something, Say Something' campaign in the West Midlands, UK (Source: Network West Midlands)



Figure 5: Advert for the 'Report it to stop it' campaign in London, UK (Source: Transport for London)



### 2.3. Quality incentive contracting – London

In London, the bus contracting system transitioned to a gross contracting system called Quality Incentive contracts in 2001. This system tenders routes to operators on the basis of a fixed fee (subject to the required kms having been operated), whilst Transport for London (TfL) (the transport authority) retains the fare revenue from passengers. However, to incentivise quality operation in the absence of reliance on revenue, TfL provides monetary Quality Incentives to the operators who achieve high levels of service reliability (the chosen target measure). Reliability is measured on a metric of Excess Wait Time (EWT) which reflects good headway management. Above average performance is rewarded by bonus payment linked to the scale of performance above the benchmark, whilst below average performance is penalised with deductions. Bonus and deduction payments are capped at 15% and 10% respectively of the contract price, but with profit margins typically lower than this, these can have a significant impact on profitability of the contract.' (TfL, 2015).

As a further incentive, operators who meet or exceed the reliability 'Extension Threshold' criteria set in the tender for that route are automatically entitled to a two-year extension of the route contract.

### **3. PROPOSED SCHEME**

In summary, the key issues in Chittagong are as follows:

- Generally low quality bus services which are overcrowded and dirty, with high congestion and roadside friction resulting in low vehicle speeds and reliability
- Lack of safety standards, and more importantly, a lack of serious enforcement of these standards
- Lack of respect for women more generally in society, leading to a lack of self/peer-policing and low levels of reporting, compounded by a low follow-up rate for reports

The interventions proposed are therefore:

- Re-organisation and consolidation of bus operators, and re-contracting under Quality Incentive Contracts. This would ideally be accompanied by fleet

renewal, with vehicle leasing from the transport authority if appropriate. It could include reform to a BRT system, although this would not be necessary.

- Set-up of a simple text-in system, which allows reporting of incidents, linked to the bus operator via an identification number.
- Application of adverts across the bus fleet advertising this new service as a condition of the route contract.
- Linking the number of reports with the incentives paid, meaning that operators with lower numbers of reports receive a higher payment. This encourages operators to use their drivers and conductors as enforcers against sexual harassment and anti-social behaviour, resulting in a reduction in incidents on public transport.
- Over time, the impact of the scheme would aim to have enough effect on general attitudes that other aspects of quality operations could become the focus of the quality incentive contracting system, improving other aspects of quality operations in Chittagong.

The key focus for this set of interventions is to improve the enforcement of (women's) safety measures, and to generally initiate a change towards better treatment of women on public transport.

### **3.1. Transition to a privatised system with Quality Incentive contracts**

A privatised system with several operators is often considered the goal for a competitive, well-functioning bus system (Paget-Seekins, Flores Dewey, & Munoz, 2015). In the case of a highly fragmented market (as in Chittagong), co-operatives of operators could be managed in the same way as large operator companies. For the proposed model to work, a monopoly, or oligopoly, needs to be avoided at all costs, as it relies heavily on competition between operators.

Furthermore, in the short term (i.e. in the eyes of the operators), women represent a smaller percentage of bus passengers. Therefore, at least initially, causing problems for male passengers as a result of their behaviour towards female passengers may

represent a revenue loss with loss of male passengers. Removing revenue from the hands of the operators allows them to act without this in mind. Long-term (i.e. in the eyes of the transport authority), revenues will grow as a result of improving safety for women, ensuring that this strategy is economically sustainable overall.

This could occur alongside a move towards a BRT. There is an appropriate corridor which is being considered for a combination of BRT and bus priority measures. This would be a positive change for women as well as for public transport movements more generally. It would hail an improvement to bus quality in Chittagong, as well as significantly reducing journey times between the north and south of the city.

However, many very successful cities in the world run extremely well-regarded bus systems without implementing BRT principles, and so this should not be considered a prerequisite. Most important to the scheme is a re-organisation of bus contracting, organising operators into 5 or 6 operator companies or co-operatives, which could act as effective competition. Institutional reform and regulation in the form of contracting are significantly more important to the scheme than improved infrastructure.

### **3.2. Mandatory labelling of buses with ID numbers**

This is to give each operating company a unique identification model. It would be up to each company as to whether they would give individual buses different IDs so as to identify specific drivers, or whether one number would be used across the company's fleet. To an extent this would relate to the way in which drivers were contracted and fleet management techniques. Alternatively, the ID number used could simply be the route number, providing operators were contracted on a route-by-route basis.

### **3.3. Roll-out of advertisements**

All buses would be encouraged (or mandated through route contract if unwilling) to display advertising materials to encourage passengers to:

- a. Re-consider their eve-teasing

- b. Speak to the driver/conductor/helper in the case of any harassment or other issues
- c. Text a designated number with details of the incident, quoting the ID code placed prominently on the bus

These should cover a range of 'angles', including emphasising the positive impact of reporting (e.g. "We're changing the way the bus system works, we care about your safety") and reminding men that they have an important role in reporting too. There could also be the development and promotion of a 'behaviour code' or set of rules for bus travel, making it clear what behaviour is intolerable on the bus. There should be input from psychologists and stakeholder workshops in preparing the signs/ posters/ stickers.

Figure 6: Example designs for advertisement





### **3.4. Training**

Bus companies/operator co-operatives would need to be provided with training and resources to improve their management of harassment and encourage a harassment-free environment.

Drivers and/or conductors would need to be given powers to take action against perpetrators and/or remove people from the bus, and there would need to be some framework to enable stopping in order to remedy incidents. Although ideally the threat of being reported would be sufficient to reduce poor behaviour, it would need to be enforceable in reality as well.

### **3.5. Incident reporting**

Passengers (victims and others) report incidents via text, including ID/service number, time and details. Analysis of these reports has a lot of potential for follow-up, but in the first instance minimal analysis would be required to process the relationship between the quoted ID number and the report.

### **3.6. Incentive payments**

Incentive payments would be paid on a monthly basis, maximum 10% more or less (for example) than the contracted amount, based on ranking of least to most complaints. Ranking is preferable to a calculation derived from the raw number for two reasons:

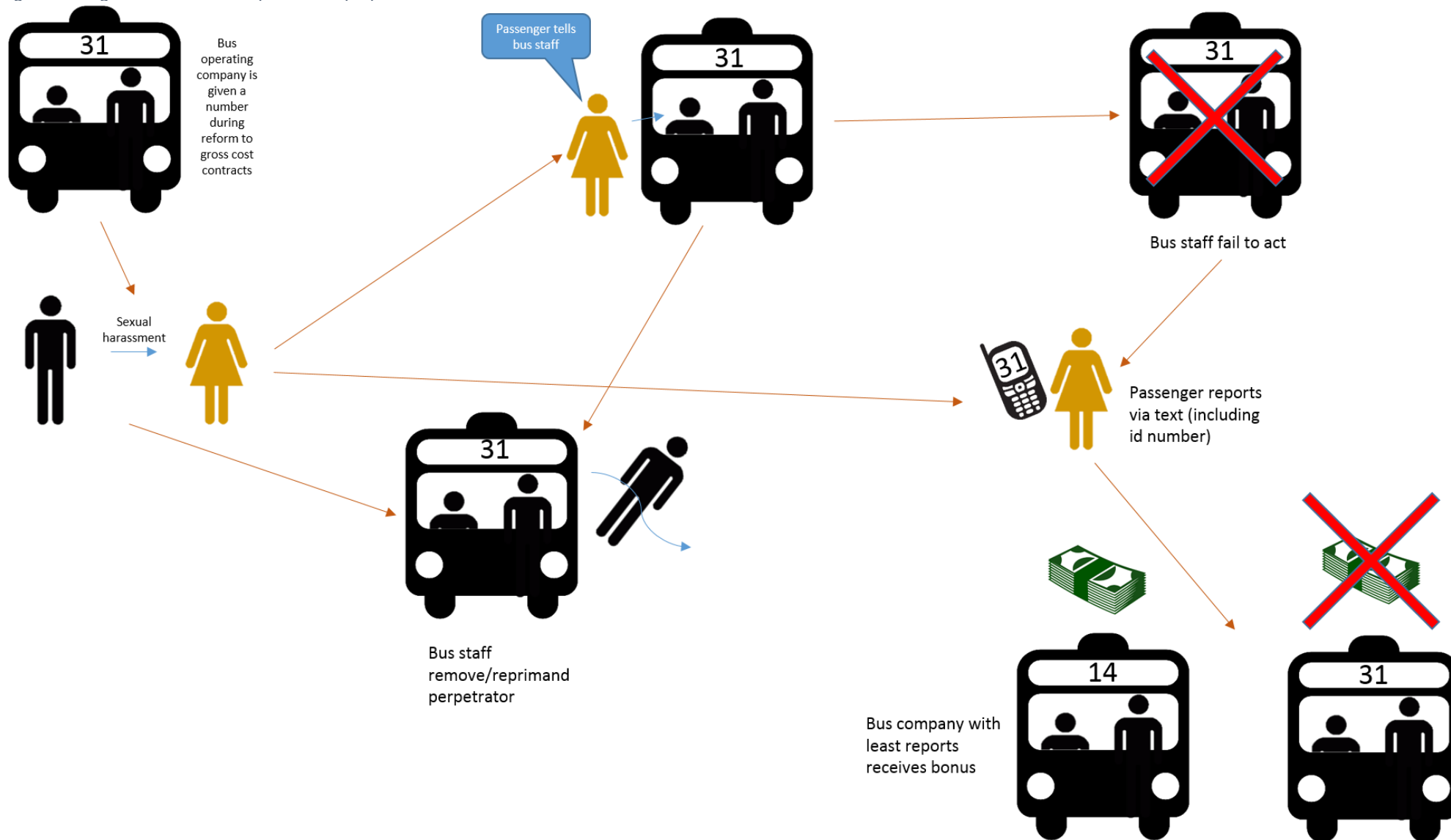
1. To stimulate competition between operators
2. To ensure scheme can be meaningfully used even with low levels of reporting at outset

By making incentive payments based on the number of reports, as opposed to the type or severity, administration costs can be kept to an absolute minimum for the roll-out of the project. There is an assumption that the implementation of scheme such as this would necessitate a 'buying-in' of government to the cause of women's safety. Even so, the aim is to make the initial implementation of the scheme have no higher overhead costs than a similar scheme focusing on another aspect of quality operation. The amount given as an incentive payment would need to be weighted according to frequency and distance to avoid disadvantaging certain types of routes. This 'rating' of a route would be communicated as part of the tender document.

However, the system by which this was calculated would need to change through time, as if more than one company received zero complaints (as would be the ideal future scenario), this would complicate the ranking system. Based on a pilot, the suitability of ranking as a system would need to be assessed.



Figure 7: Diagram of mechanism/process of proposed scheme



### **3.7. Implementation**

The scheme could either be rolled out across the Chittagong network all at once, as bus reform to Gross cost contracts occurred, or it could be implemented incrementally, as existing contracts reached their expiration. There are benefits to both methods. A 'big-bang' implementation would allow a step-change in thinking, and would help to discourage the endurance of older operating paradigms. In the case of an 'all-at-once' implementation, the contracts should allow room for changes to be made, or should be made on a short-term basis, perhaps six-months, to allow changes to be made in light of problems which may arise. An incremental implementation would allow the system to be tweaked as issues arose, effectively allowing the scheme to be piloted in a multi-phase model.

In either case, the text-reporting scheme could be implemented before any contracting changes were made, in order to gauge uptake and existing levels of harassment and abuse. In a similar way to Zusha!, the scheme in this form may even have some impact on levels of harassment, just by imposing a threat of reporting upon potential offenders.

London's public transport network is also extensively covered by CCTV, making prosecution much easier. Although sexual violence is not uncommon on Bangladeshi buses, the main focus of this suite of interventions would be to reduce lower-level harassment, often known as 'eve-teasing', with the hope of changing broader attitudes towards women's safety.

The methods by which these changes are enforced would be left largely up to the operator, but providing training and 'tips' would be a necessity. It is expected that operators would penalise and reward drivers financially in the same way as the operating contract would. Some kind of awards or reward for sustained good performance by specific drivers might also help to improve commitment to the scheme. The Zusha project gave 'winners' (those buses which had implemented the correct number of stickers in the right places) awards for their good work. Involving conductors in the scheme as well might have a positive impact by allowing the driver

and conductor to 'back each other up', enabling them to speak out against perpetrators.

By emphasising rewards for desirable behaviour (driver control of male activity against women on the bus), as well as penalising them for a lack of action, the project would hope to minimise resentment against women associated with these changes. The bonuses in either direction would be large enough to initiate change, but small enough that fraudulent activity and 'cheating' the system would be unlikely to pay off.

### **3.8. Financing**

A system such as this is likely to incur significant start-up costs, as well as ongoing costs and increased public sector capacity for managing the system (Paget-Seekins, Flores Dewey, & Munoz, 2015). Ideally the scheme would initiate sufficient additional ridership to make the system sustainable, but this may not be possible if fares are to remain low and controlled. It is highly likely that there would need to be government subsidy for the ongoing costs of the scheme, with potential for donor agency help during the set-up stages.

### **3.9. Potential 'level-up' options**

Incentives could include bus fleet upgrades. This would effectively reward passengers in the long-term for reporting incidents, and would overall improve quality of bus provision. However, in this case the contracting system would need to be altered to ensure that patronage was an incentive for operators – it is likely otherwise that they would rather have the monetary benefits than the upgrades.

Over time, the scheme could be expected to draw a culture of reporting gender-based harassment into public transport users, overall improving safety and accessibility of public transport for everyone. Once this effect had been sufficiently ingrained, the metric measured for calculation of quality incentives could be changed to focus on

more fine-grained issues such as journey time reliability or other desired qualities in the bus network.

Depending on smartphone usage in the scheme area (studies would be required), an app could easily be developed which provided a form for extra details – with space for GPS location, photos, voice recordings etc. Indian not-for-profit Safetipin have developed apps of a similar style to this for reporting safety of public spaces. The standardised format would be useful to collect in the case on improved policing/enforcement, and for assessing project impact. Without better policing and follow-ups, however, this information would not be necessary, as the incentive payment would simply be based on the number of reports, rather than their nature or severity.

### **3.10. Assumptions**

1. That there would be enough operator companies to enable competition
2. The proportion of genuine to false complaints would be such that detailed analysis of incidents would not be necessary. Reports should be stored for use in further enforcement and policing developments in the future.

## **4. POTENTIAL ISSUES**

The potential issues explored here focus on the key problems with the proposed concepts. They do not explore the potential problems with bus reform more widely that have been observed around the world.

### **4.1. Incentivising non-pick-up of women**

Even under the current form of organisation, drivers sometimes avoid picking up female passengers, for example if the reserved female seats are already occupied by male passengers, in order to avoid conflict on board the vehicle.

In order to combat this, a clause should be included in the contracts to ensure that all passengers must be picked up if there is space on board the bus. Furthermore,

including the advertisements at bus stops to encourage women to report non-pick-ups in the same way as harassment would help to prevent this practice. An increase in bus frequency on over-capacity routes would be necessary to help ensure that there was no excuse for non-pick-ups.

#### **4.2. Victim intimidation**

Ideally, women would feel able to speak to bus staff to help them combat abuse in the first instance. However, a text-in option enables women to make a discreet report in the event of victim intimidation, and enables them to have an impact retrospectively as well as in the moment. As previously mentioned, the aim of this scheme in general would be to reduce non-violent, largely verbal, sexual harassment on buses. A different (emergency) scheme should be considered to target violent crime on buses.

#### **4.3. Fraudulent reporting**

There is a chance that, due to the competitive nature of the contracting, competing operators may attempt to influence the incentive system through fraudulent reporting. Ideally, the incentive payment would ideally be set low enough that false reporting does not offer a good return, although if set too low the payment may fail to sufficiently incentivise the desired behaviour. Additionally, with the desired high levels of reporting, a large number of false reports would be required to significantly alter rankings.

There could be potential for implementing CCTV cameras, with false cameras on some buses, similar to dummy speed cameras sometimes used in the UK (Price, 2004), to discourage false reporting and to enable better follow-up.

#### **4.4. Resentment of women**

There is a chance that the scheme would encourage a resentment towards women, both by bus staff (who are suddenly being penalised or reprimanded for not preventing sexual harassment), and from male passengers in general (who are suddenly at risk of being punished for behaviour which was previously accepted). This may serve to worsen the situation for women in the short-term.

In order to combat this, there would need to be an emphasis on positive incentives for companies (hopefully passed to bus staff), extensive marketing for the scheme (not only on board public transport but elsewhere also). Additionally, although the scheme is aimed at reducing gender-related incidents, there could be some emphasis placed on the fact that the scheme would reduce the incidence of anti-social behaviour more generally as well. Moves to improve safety for women and girls more generally across Bangladesh could be tied in with this concept.

#### **4.5. Violence toward driver/conductor**

In a similar vein, there may be some resentment or even violence towards the bus staff upon the enforcement of these new rules. By making the 'rules' very clear to passengers upon entering the vehicle, bus staff may be 'backed up' by this information. Bus staff would need to be carefully trained in how to deal with perpetrators on board. A system would need to be developed, possibly a 'zero tolerance' model, or a 'three strikes and you're off' type model.

Furthermore, the likelihood of violence towards bus staff over time would be expected to diminish with changing culture that would be hopefully catalysed by a scheme such as this one.

#### **4.6. Removal of advertisements/ID numbers**

There is a chance that operators may remove the advertisements placed in their vehicles, or their unique ID numbers (if used). This could be prevented by enforcing spot-checks of advertisements/ID numbers, with automatic fines for those failing, and an added 10% (or similar) incentive payment for those complying (similar to Zusha!), or a 'three-strikes' type system. Again, this system would ideally be developed in conversation with stakeholders and bus operators themselves.

### **5. CONCLUSION**

This scheme proposes to put an unprecedented amount of power into the hands of victims/citizens. It would mark a tangible and impressive commitment to women's

rights, in line with the UN's Sustainable Development Goals and the general direction of good practice. It would improve public transport quality, patronage, and therefore viability and sustainability. Alongside the benefits of implementing bus reform more generally, including improved journey times and reliability, the modified Quality Incentives contracting model would improve regulation, and reliability of income for operators, whilst also improving conditions for women, and by proxy, their families.

Although there are a range of potential issues with the scheme, these should not act as a deterrent to implementation, as there are measures which could help to mitigate any of these identified problems. A range of stakeholder engagement workshops should be held before implementation (with operators, drivers, conductors and passengers), to identify any further potential problems. If global organisations are serious about improving women's safety and equality, a concrete commitment to schemes such as this should be a logical next-step.

More than anything, strong political buy-in would be required for the scheme to have a positive impact. The government, transport authority and other key institutions would all need to subscribe to the general aims of the scheme, in order to encourage a culture-wide shift in attitudes towards women on public transport. There are many cases of where the support of a charismatic political leader has been essential to the success of a transport development in a city. The city must appear strongly united in its message to the people of Chittagong.

Bangladesh is one of the few countries in the world with a female Head of government, and has been since 1991. The current Prime Minister, Sheikh Hasina, has been a champion of women's rights throughout her terms, although her focus has generally been on access to education, employment and healthcare. As the country continues to develop, women's access to transport should become more of a key focus for Bangladesh's policy makers, and so in the long-term a national commitment to women's access to transport through a country-wide roll-out of the scheme may be possible.

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