This version is the author's accepted manuscript of this article. The final publication is available at link.springer.com via: http://dx.doi.org/10.1057/s41284-017-0117-y

Title: Did they report it to stop it? A realist evaluation of the effect of an advertising campaign on victims' willingness to report unwanted sexual behaviour

Authors: Reka Solymosi (University of Manchester) , Kerry Cella (Transport for London) , Andrew Newton (University of Leicester)

Abstract

Tackling unwanted sexual behaviour (USB) on public transport is a concern for transit authorities across the world. However, high rates of underreporting mean a lack of reliable information about USB, presenting a key barrier to prevention. This paper presents a realist evaluation of an initiative called 'Report It To Stop It' (RITSI) implemented in London, UK, to tackle underreporting. RITSI aimed to encourage victims to report details of USB incidents to police and transit authorities through media campaigns. Results show that the initiative did increase reporting of USB and, that this increase was not due to a rise in the prevalence of USB. Crucially, there was no evidence of any increase in passengers' fear of crime during the campaign activity. However, the impacts of this campaign were more pronounced in earlier waves, and on certain modes of transport. These findings demonstrate the importance of the context in motivating reporting behaviour change.

Key words: Underreporting, transport crime, sexual harassment, public transport, unwanted sexual behaviour, crime reporting

Introduction

Sexual harassment and fear of sexual harassment on public transport (mass transit) has been identified internationally as a potential barrier to travel. Unwanted sexual behaviour (USB) on public transport can negatively impact on passenger's future transit choice through inciting fear (Herbel & Gaines, 2010). This impact can include both passengers who experience it directly, and those who observe or are made aware of it indirectly. A survey in the United Kingdom in the mid-1990s, found one in eight females said that they felt so unsafe on public transport that they avoided using it (Hough, 1995). In essence, this may constitute a dysfunctional fear of crime (Gray, Jackson and

Farrall, 2009); restricted transport access (Lucas, 2012) reduces opportunities to an array of social activities, thereby reducing quality of life. One barrier to policing USB is a lack of data about these offences due to the underreporting of incidents. To address this, transit authorities may seek to implement publicity campaigns in order to increase the reporting of USBs (Gekoski, Gray, Horvath, Edwards, Emirali, and Adler, 2015). This paper seeks to evaluate a specific intervention implemented in London, UK, the the Report It to Stop It media campaign (RITSI). The aim of RITSI was to encourage reporting of experiences of sexual offences on the transport network. The campaign consisted of 4 waves, which took place in April, July, and October of 2015 and February 2016. These waves comprised a video message circulated online, social media messages, and z-cards (folded leaflets frequently used in publicity communications campaigns).

While randomised control trials (RCTs) are considered a key methodology for evaluation research in crime and justice (Weisburd, 2010), there are still cases where experiments are neither ethical nor feasible (Berk et al., 1988; Heckman & Smith, 1995; Pawson & Tilley, 1997). Media campaigns such as RITSI are an example of such, as even with careful targeting it is difficult to manage who and who does not receive campaign messages; in RCT language to clearly identify experimental and control groups. One alternative method for evaluating the effectiveness of an intervention is the use of a realist evaluation (Pawson and Tilley, 1997). There are currently no evaluations of publicity campaigns to increase reporting of USB in transport settings. This paper adopts a realist evaluation framework to detail the

construction, implementation, and outcomes of RITSI. In doing so we aim to determine what works, for whom, in what contexts, and provide a reference to guide future iterations of such interventions. This paper contributes to the evidence base by serving as a presentation of good practice to other transit authorities around the world seeking to implement similar initiatives. Furthermore it offers a framework for those considering such interventions in the future.

We consider the success of RITSI in achieving its aim is to encourage those most frequently victimised to report experiences of sexual offences on the transport network. Further, we want to evaluate potential unintended consequences on passengers' fear of crime. Accordingly, we will test the following hypotheses:

- Impact on perceptions: RITSI publicity waves result in increased recognition of campaign material in target audience, and those who have seen the campaign material are encouraged to report USB on transport
- Unintended outcomes: RITSI publicity waves are not followed by increased fear of crime in the target population
- Changes to police-recorded levels: Reported instances of USB increase after RITSI interventions
- Changes to self-reported levels: Prevalence of USB identified using self-report measures do not increase after RITSI interventions

The remainder of this paper will provide a background to the issue, discuss the methods for this realist evaluation, present findings to answer these hypotheses, and discuss implications for future iterations of such initiatives.

Unwanted Sexual Behaviour (USB) and Public Transport

The World Health Organisation provides a broad definition of sexual violence as: “Any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic, or otherwise directed, against a person’s sexuality using coercion, by any person regardless of their relationship to the victim, in any setting, including but not limited to home and work” (MOPAC & NHS England, 2016: p 19 - 20). It can take place anywhere, including the workplace, schools, streets, public transport and social situations. It includes flashing, obscene and threatening calls, and online harassment. In particular here we focus on sexual harassment as the unwanted verbal or physical conduct of a sexual nature, which occur in transport settings.

As discussed in the introduction, USB on transport has wide-reaching consequences on victims and non-victims through reducing their quality of life and willingness to travel. This issue can lead to systematic disadvantage in populations; research has found that, in some cities, a large percentage of women are “[public] transit captive” (Smith, 2008). This means they have little or no access to other forms of transportation. According to the National Travel Survey 2014, 48% of those in the lowest income quintile households in the UK are without access to a car (Department for Transport, 2014). This compares to only 24% of the UK population as a whole. Access to public transport, therefore, may be vitally important to provide access to employment, educational, shopping, and leisure opportunities (Smith 2008). Indeed, often workers rely on public transport for shifts in the early hours of the morning or late at night, when travellers are generally known to be more fearful. In these

cases, fear for personal safety can contribute to the social exclusion of lower income women in particular, if it precludes their use of public spaces and/or transport services (Lucas, 2012).

USB on transport encompasses a wide range of sexual offences, from serious sexual assaults to staring and lude comments (British Transport Police 2017). For example, “eve teasing”, the name given in India to such acts, encompasses the sexual harassment of women to their murder by men (Natarajan, 2016; Smith 2008). Eve teasing appears anecdotally to be a widespread concern among women when they venture out into a variety of public places including transport (Smith 2008; Natarajan, 2016; Frederick, 2002). The types of sexual crimes that are most commonly reported on public transport involve touching or rubbing of victims, sometimes referred to as frotteurism (Lim 2002), and exposure by offenders (Smith & Clarke 2000). Harassment transcends age, race, and income for both harassers and victims. It is consistently experienced by women in transit or walking around the city (Loukaitou-Sideris, 2014).

USB generally goes unreported to the police. Based on aggregated data from the UK national victimisation survey, the Home Office found that only 15 per cent of victims of sexual offences reported it to the police. Frequently cited reasons for not reporting were that it was ‘embarrassing’ and victims ‘didn’t think the police could do much to help’ (Home Office, 2013). Estimates for England and Wales show that between 75-95% of victims never report USB incidents to the police (e.g. HMCPSI & HMIC, 2007; Ministry of Justice, Home Office and Office for National Statistics, 2013).

These findings are mirrored in public transport settings; harassment crimes often go unreported to police or to transit officials (Smith 2008). A survey of New York City subway users revealed that 63 per cent of respondents had been sexually harassed on the New York City subway, but only 4 per cent of those harassed contacted the authorities to file a report (Stringer, 2007). In Baku, Azerbaijan, none of the 162 out of 200 women surveyed, who reported having been sexually harassed on the metro, reported it to the appropriate authority (Jafarova et al., 2014); in Egypt, of 1010 women surveyed, only 2.4% of the 83% of Egyptian women and 7.5% of the 98% of foreign women living or travelling in Egypt, who had experienced sexual harassment in a public place reported it (Shoukry et al., 2008). Evidently, USB incidents are frequent yet vastly underreported by passengers on public transport. Because of this, their spatial and temporal patterns are largely unknown to practitioners and researchers who would use these to consider problem solving approaches to reduce the prevalence of USB.

This global trend is also evident on public transport in the United Kingdom (TfL, 2015). TfL conducts quarterly Safety and Security surveys, which include questions about unwanted sexual behaviour, harassment, and assault on public transport. These surveys repeatedly show that the proportion of interviewees reporting incidents of unwanted sexual behaviour fluctuates between 3-8 per cent (TfL, 2015). Of these, 47% experienced USB on bus, 45% on tube, 16% on trains, and 5% on ‘other’ modes of transport (people could choose more than one mode).

Publicity campaigns to reduce crime have been utilised for example in the case of burglary (Bowers & Johnson, 2005; Johnson & Bowers, 2003) and bicycle theft (Sidebottom, Thorpe & Johnson, 2009). For USB in transport in particular, in the United States, in 2008 the Massachusetts Bay Transportation Authority (MBTA) Police co-produced an anti-harassment advertising campaign with a Rape Crisis charity, and in 2013, the campaign was revived and featured the launch of an application for reporting USB incidents (Gekoski et al., 2015). MBTA then released figures indicating that the number of sexual offences reported on the MBTA increased (Gekoski et al., 2015). However, similar initiatives carried out in Iran (Megginson, 2013), Singapore (Huffington, 2012), and Vancouver, Canada (Metro Vancouver Transit Police, 2015) did not show such results. This paints an uncertain picture for other transit authorities hoping to implement such campaigns.

Background to the RITSI Campaign

It is important to consider the context in which the intervention took place, to be able to understand the backdrop and present a realistic evaluation. In this case, RITSI was implemented against an ongoing partnership working under Project Guardian. In the United Kingdom, London's transport authority, Transport for London (TfL), the British Transport Police (BTP), and the Metropolitan Police Service (MPS) launched an initiative called Project Guardian, in response to findings from the TfL Safety and Security

This multi-pronged operation was aimed at tackling USB on London transport, and involved the deployment of specially trained police officers and police community support officers (Bates, 2013; Gekoski et al., 2015). Project

Guardian used findings from police-based research and surveys to develop a series of interventions to tackle USB and raise awareness. These included working alongside the Everyday Sexism Project to launch a twitter hashtag and setting up the 61016 text number for reporting sexual offences to BTP. The project also used ‘days of action’ where officers would go to transport hubs in London and engage with the public to raise awareness of USB and also hand out the initial media material related to the campaign. Officers and call centre staff were also trained to handle reports and support victims reporting sexual offences (BTP 2013). Project Guardian, in many ways, provided the infrastructure to support the RITSI media campaign, and it is important to note that this supportive backdrop was the context in which RITSI was launched. The RITSI campaign launched in April 2015, and initially consisted of 4 waves of information campaigns during which material was disseminated through video and leaflets. The aim of RITSI was to encourage women aged 17-34, who were identified by police recorded crime data as the most victimised demographic for USB, to report experiences of sexual offences on the transport network.

Data

A realist evaluation approach allows us to make use of data which was not collected for the purpose of the evaluation, but can be used to answer our questions around context and mechanism outcomes. Data used in this paper were collected using two questionnaires, and police-recorded crime data. Table 1 below lists the data used to test each hypothesis detailed earlier, before we describe them below.

[Insert Table 1: Data used for realist evaluation here]

RITSI questionnaire: A cross-sectional questionnaire dedicated to assessing the impact of each RITSI wave was distributed in four waves to an overall sample of 450 women aged 17-34 who have used public transport in the last 12 months. Each wave was administered after a RITSI marketing campaign wave had ended. The questionnaire collected data to answer questions of retention, change in attitudes, and self-reported victimisation. This questionnaire was conducted and analysed by a marketing research company called TNS, contracted by TfL, however all data reported in the paper were confirmed by the authors.

Attitudes survey: The Attitudes to Safety and Security Survey, (hereon referred to as Attitudes) is a telephone-assisted interview survey, administered quarterly on an ongoing basis, sampling 1000 adult Londoners each quarter. Interviews are conducted with householders aged 16+ celebrating their birthday next, by trained interviewers. It has been collected by TfL since 2012, to monitor the impact of concerns about crime and anti-social behaviour from London's public transport users.

Police-recorded crime data on transport comes from two different forces, the MPS (who cover bus-related crime) and BTP (who cover rail-related crimes). Between April 2011 and September 2016 there were a total of 3,683 bus related reports of USB, 3,078 reports on the London Underground (LU) and Docklands Light Railway (DLR), and 70,780 reports made to the MPS off-transport (included for reference). These are compared against one another to

attempt to conceptually associate them with the campaign waves. The time range of April 2011 to September 2016 allows us to capture other related events that may have had an impact (such as Project Guardian and associated media coverage (Bates 2013)) and also allows us to compares the trend for transport related USB against the overall picture for the MPS.

Methods

To evaluate how RITSI may bring about change in reporting of USB we employ the framework first set down in Pawson and Tilley's *Realistic Evaluation* (1997). "Realist evaluation stresses four key linked concepts for explaining and understanding programmes: 'mechanism', 'context', 'outcome pattern', and 'context-mechanism-outcome pattern configuration'" (Pawson & Tilley, 2009).

Mechanism refers to the processes implemented in order to bring about change; these are the mechanisms by which the measure may work (Pawson & Tilley, 1997). It is important to consider *why* we expect the measure (RITSI) to result in an outcome (increase in reporting). To establish these mechanisms, we must lay out how the campaign could affect passengers. The campaign message and mode of implementation was developed with three mechanisms in mind. First, it should reach the intended target audience. Second, it should deliver to them a message aimed to address barriers to reporting USB. Third, it should not increase fear of crime in the same message. Through these mechanisms, we expect the measure to increase reporting of USB on transport.

Context serves to identify the crucial mechanisms required for the intervention to work. We therefore aim to describe the campaign in a way that details ‘for whom’ and ‘in what circumstances’ such a programme might work. In the context of RITSI, we already discussed the importance of resources available from the legacy of Project Guardian. We will also return to the importance of context when discussing the results from the increase in reporting in certain modes of transport compared with others.

Finally outcome-patterns comprise the intended and unintended consequences of programmes. Realism does not rely on a single outcome measure to deliver a pass/fail verdict on a programme, and instead considers the various outcomes in the various contexts in which the programme was implemented. In the case of RITSI, we consider three possible consequences. First we assess the extent to which the media campaign was successful in delivering the key messages to the target audiences. We then assess any unintended consequences on passengers’ fear of crime. Finally, we attempt to discern any positive effect on reporting by looking at rates of reported USB on various transport modes over time, while accounting for any increase in self-reported victimisation measures, to ensure any increase is due to increased reporting rather than increased prevalence in USB.

We then integrate these findings to provide a set of ‘lessons learned’ which aim to “pinpoint the configuration of features needed to sustain a programme” (Pawson & Tilley, 2009). We describe the complex sets of elements which came together to facilitate the implementation of RITSI, and the methods for assessing its impact, as well as their findings. We hope to thereby set up a

blueprint for future iterations of this implementation, and a guide for applying such methods to increase USB reporting elsewhere.

Mechanism of the message

We want to briefly discuss the development of the message for RITSI, to highlight the mechanisms by which it was intended to tackle barriers to underreporting. To develop an appropriate intervention for increasing USB reporting, a three-stage approach was employed. First the barriers to reporting were identified using focus groups, second a framework was developed from these to guide the message development, and finally the message was tested against success criteria using another focus group.

The first stage of message development consisted of in depth interviews with seven groups in order to identify the main barriers to the reporting of USB. These groups were selected to represent those stakeholders who are most likely to experience USB, based on police-recorded victimisation data. Interviews were conducted by an external surveying company, who identified four main barriers that prevent reporting USB. These were *normalisation* - where USB is viewed as a social nuisance and as part of a wider spectrum of antisocial behaviours but not a crime, *internalisation* - where respondents preferred to internalise the situation, escape and forget, often as a result of thinking that they were in any way at fault for the incident, a *lack of awareness* around reporting - being unclear about which behaviours warrant action, who to tell, and what the process entails, and finally *credibility* - very few people believed that reporting an unwanted sexual behaviour will result in any form of justice.

Based on these outputs, in the second stage of message development, a framework called *'Name, Blame, Claim'* was introduced as a tool to map a way forward. The *'Name it'* part of the framework aimed to target *normalisation* and *lack of awareness* by naming clear examples of the incidents which can be reported, raising awareness around incidents that would be perceived as threatening, and tackling people's lack of clarity around what can be reported. The *'Blame it'* section was to target the *lack of awareness* and *internalisation* by emphasizing that the victim was not responsible for the offence, and highlighting information about who to report to and how process will work. Finally, *'Claim it'* was to address '*credibility*' and *'internalisation'* barriers, by letting people know what effect the reporting will have in terms of justice, and making people feel they are helping to stop other women becoming victims. By making reporting as easy as possible, without the need for follow-up, and allowing anonymous reporting, it was hoped to address the internalisation issues which emerged from the interviews.

The "Name, Blame, Claim" framework was then used by the media company to guide the creative development of the publicity messages, which, were put through a final scrutiny to assess their effectiveness against a pre-determined 'success criteria' of comprehension, engagement, and motivation in the third stage, using focus groups made up of the target demographic. Overall there were 6 focus groups, lasting 90 minutes each, with women aged from 17-34 years.

Comprehension was assessed by the extent to which focus group discussions suggested that the campaign material conveyed the sentiment that "*Any form*

of unwanted sexual behaviour is a crime and not tolerated on London's transport". While all participants agreed with the statement 'USB is a crime (no matter how big or small) and not to be tolerated on the public transport system', some problems with message comprehension were identified. The main issue, which we return to in the discussion, was the scenario not containing enough transport-related cues, resulting in participants' confusion about what to report. One participant commented: "So does this mean I should be reporting if stuff happens on the street as well?". To address this, the content of the material was changed, moving the setting for the message delivery to a tube train (from a studio).

Engagement was assessed by the extent to which the focus group discussions suggested that the campaign material conveyed the sentiment that "*TfL cares about the safety of its customers*". Focus group participants agreed that the campaigns cover an important message, and none reported increase in fear of crime. Interestingly, regarding engagement, focus group participants identified the police as the driving force behind the campaign with TfL as a relevant 'partner'. However both organisations were appreciated for raising awareness of and supporting women to report USB. No negative impact on passengers' fear of crime or on perception of the reputation of the organisation was identified based on the focus group results.

Finally, motivation was assessed by the extent to which the focus group discussions suggested that the campaign material made customers feel empowered to report any form of unwanted sexual behaviour, and use the 61016 number for text message reporting. Participants agreed that this

approach provided reassurances on what reporting will entail, how easy it will be, and that it will be taken seriously at point of reporting. Positive comments appreciated the presentation of a varied spectrum of USB incidents, working together to overcome ‘normalisation’ barrier, and that the message highlights consequences for offenders which participants found motivating. They also commented that the message of having a dedicated specialists team of police officers was reassuring, and should be emphasized.

These results were fed back to the media company, and the advertising materials were amended based on them. Final communications material was produced with all these outcomes in mind, and disseminated throughout four campaign waves through a combination of paid for video on demand advertising, YouTube advertising (it came up as an advert when trying to watch other content), organic YouTube pushes (such as social media shares), sponsored social media posts, and online banners. Digital was the prefered method of dissemination as opposed to advert being placed directly in vehicles or train cars. This was due to the internal pre-campaign research indicating that audience would prefer to engage with the material in their own ‘safe space’ and that this method was more likely to reach the target audience.

We now more on to evaluate the effectiveness of these mechanisms in addressing barriers to reporting, and of not increasing fear of crime.

Results

As discussed, we want to look at three main outcomes: the impact on perceptions of the target audience, the impact on fear of crime in the target audience, and finally the impact on volume of reported USB incidents. These outcomes will be addressed independently, and findings brought together in the discussion.

Impact on perceptions

Results from the RITSI questionnaire are used to determine the extent to which target audiences were exposed to the media campaign, to identify differences in willingness to report between those who have seen the campaign and those who have not. Table 2 shows the percentage of the sample who answered 'Yes' to questions about having seen the campaign material after each wave of campaigns. Results show a significant increase wave on wave in recognition of the campaign across all modes, except the last wave, where there is no significant increase observed at $\alpha = 0.05$, using a column proportions test (IBM, 2012).

[Insert Table 2: Recognition of RITSI campaign by wave here]

There were three channels of communication utilised for RITSI material dissemination. All modes show an increase from first wave to second wave in number of people who have seen the material, and again from the second to the third wave (Table 2). Neither mode shows a significant increase from the third wave to the fourth. This might imply a plateauing of the saturation of the campaign after the third wave.

Looking at differences between the modes, video is the mode which seems to have reached the most people. However we have to keep in mind that video shared in social media will be counted as both social media and video here. What is important to note though, is that the number of people reached through the use of z-cards is much smaller than other modes. The reach of online/ video campaigns is far greater than the reach of the in-person distributed material.

The second aim of this section is to identify any differences in reporting between recognisers of the campaign and non-recognisers. To assess these, respondents were divided into two groups based on whether or not they reported recognising the campaign (answering "Yes" to *"Have you seen this advertisement before?"* in the post-wave surveys), resulting in a group of recognisers (n=262) and non-recognisers (n=188). The differences between these subgroups on the question: *"If you experienced unwanted sexual behaviour whilst waiting for or travelling on public transport, how likely would you be to consider reporting it?"* was assessed. Overall, there was no significant difference between the percentage of each group who said they would be "Very Likely" or "Somewhat Likely" to report USB observed from this sample at $\alpha = 0.05$, using a column proportions test (IBM, 2012). Based on these results alone we cannot say that those who recognised the RITSI campaign had different attitudes towards the barriers identified and addressed with the "*Name it Blame it Claim it*" approach to those who had not seen it. These findings will be explored further in the discussion.

The above results suggest the campaign recognition increased with each wave of publicity material, with the exception of the last wave. Further waves might reveal whether this was a one-time slump, or the campaign has reached a plateau for saturation. The video and social media campaigns reached far more people than the z-cards, with 10% of the sample having seen z-cards, compared to 54% having seen the video. There was no significant difference in attitudes towards reporting identified between those who recognised or did not recognise the campaign. However to explore in full the outcome patterns, we will also consider the effect of RITSI on passengers' fear of crime, and on the reporting of USB to police.

Unintended outcomes: fear of crime

Before moving on to examine increase in reporting, it is also important to consider the potential impact of these messages on passengers' fear of crime. To do this, we consider results from TfL's Attitudes survey. For every quarter, we considered the proportion of respondents who answered 'Yes' to the question '*In the last three months, have you ever felt worried about your personal security when using public transport in London?*'. We then use a proportions test, used for testing the null hypothesis that the proportions (probabilities of success) in several groups are the same (Wilson, 1927). We consider the percentage of respondents who answered 'Yes' in each quarter, and find that there appears to be no increase after the implementation of RITSI in April 2015 (11-sample test for equality of proportions without continuity correction: X-squared = 15.199, df = 10, p-value = 0.125). Figure 1

shows the percentage of the sample who answered ‘Yes’ with 95% confidence intervals.

[Insert *Figure 1: Percent of respondents who expressed worry about crime quarterly over the RITSI campaign period* here]

Based on these data we conclude there was no measurable increases in fear of crime in people travelling on public transport in London following RITSI campaigns.

Changes to police-recorded levels of USB

Finally we consider whether actual reporting of USB has increased following RITSI campaign waves. For this, a time series analysis was conducted to see if any change could be detected through the launch of the RITSI campaigns on reported crime. Figures 2 and 3 show reports of USB indexed to April 2011 as a baseline to compare the trend. We note both a 12 month moving average and a visual audit appear to illustrate an increase after the initial launch of Project Guardian and spikes following each media campaign wave of RITSI. Reporting of bus related offences seems to mirror the pattern of MPS-wide reports of sexual assault (Figure 2). BTP data for offences recorded on the LU and the DLR show a similar overall trend to those recorded by the MPS, on and off bus (Figure 3).

[Insert *Figure 2: Volume of USB reports over time, comparing all MPS reports and those on buses or at bus stops only* here]

[Insert *Figure 3: Volume of USB reports over time, comparing LU and DLR reports and those on buses or at bus stops* here]

Comparatively, following the month when each campaign wave ran, we see an uplift in the number of reported incidents, with two exceptions. Following the first campaign wave, in April 2015, reporting remains flat on the LU and DLR in contrast to the MPS; and following the third wave, in July 2015, we conversely see a fall in the number of offences recorded by the MPS both on and off bus.

Inspecting this data visually however makes it difficult to separate signal from the noise, and therefore gain an accurate understanding of whether significant changes took place following campaign waves. Changepoint analysis on the data presents more statistically robust results by looking at whether changes in the mean are detected in the time series (Killick and Eckley 2014). In particular, the Pruned Exact Linear Time (PELT) method (Killick et al 2012, Killick and Eckley 2014) can be used in order to determine whether multiple changes are detectable in the time series following RITSI media campaign waves. To prevent potential overfitting in the method a manual penalty value is generated based on ‘elbow plots’ of the data. This shows where the number of changepoints stabilise as the number of penalty points increase (pen.value = 340 for the MPS bus related offences and pen.value = 373 for offences reported to the BTP; see Appendix 1). This method decreases the likelihood of detecting false positives in the data by looking at where the number of changepoints detected becomes stable as the number of penalty points

increases but not overly stable as to not detect ‘real’ changepoints (Haynes et al 2014).

[Insert *Figure 4: Change points detected in volume of reported sex offences on buses* here]

[Insert *Figure 5: Change points detected in volume of reported sex offences on LU and DLR* here]

The results can be seen in Figures 4 and 5 visually, and are discussed here. The red lines indicate segments of the data where a significant change in the mean has been detected based on the test statistic derived from its maximum log likelihood at that point in time (Killick and Eckley 2014) taking into account the penalty introduced. We note for both bus-related offences and those on the LU and DLR there is an increase in reports and a change is detected following the launch of Project Guardian in April 2013. A further changepoint is detected for both sets of data in the summer of 2014. It is difficult to offer firm explanations for the latter change. Two possible reasons include anecdotal evidence of another policing engagement during that period, and the release of *Everyday Sexism* (a book which mentions Project Guardian) (Bates 2013, 2014).

Following the launch of RITSI, a clear change is detected for LU and DLR which corresponds with campaign waves. However, this is not recorded for bus related data. This difference is an interesting point, potentially indicating that the impact of RITSI differed by mode of transport. We will return to this finding in the discussion, when considering the importance of context in the

campaign material (we note that the setting for the media video was on the London Underground).

To summarise, our analysis shows an increase in the number of reported offences with each wave. There is a more pronounced effect on LU- and DLR- than on bus-related offences. Therefore, while we find no differences in attitudes towards reporting in the RITSI questionnaire, there does appear to be a genuine increase in reported offences. The final point to address is whether this is due to an increase in reporting, or an increase of prevalence of USB on transport. The next section explores this question.

Changes to self-reported levels of USB

One argument that cannot be assessed by using data of reported USB alone is whether or not the increased reporting is due to an increased prevalence of USB. It is possible that if prevalence increased during the RITSI campaign, but reporting as a proportion did not, we could still see an increase in numbers of reported USB incidents. To address this, we looked at three different sources of self-reported victimisation, to see if we find any change in these data.

First, we use again the RISTI questionnaire. We use a proportion test to look at differences in the proportion of respondents answering 'Yes' to the question *'Have you ever experienced any incidents of unwanted sexual behaviour while waiting for or travelling on public transport in London?* '. 50% of the sample interviewed in May, 49% interviewed in August, 46% interviewed in November, and 50% of those interviewed in March 2016 reported

experiencing USB. A proportions test did not find significant differences between these waves at α= 0.05. These results indicate that there have been no changes in self-reported experiences of USB on London transport throughout the time period while RITSI was run. Unfortunately, the question did not specify a time period for the respondents to frame their answer within, so it is possible that the reports in each wave are about historic events.

Second we consider data from TfL's Attitudes survey. The proportion of people who answered 'Yes' to the question '*In the last 12 months have you experienced any unwelcome sexual behaviour including sexual harassment or sexual assault while travelling on, waiting for or heading to or from public transport in London?*' showed no significant difference between waves (11-sample test for equality of proportions without continuity correction: X-squared = 6.9837, df = 10, p-value = 0.727, n = mean of 42 across all quarters). Figure 6 shows the percentage of the sample who answered "Yes" with 95% confidence intervals, from the second quarter of 2014 (starting April) up to 4th quarter of 2016 (ending in December 2016). These data show no change in the number of people who experienced unwanted sexual behaviour while travelling on public transport in London during the RITSI campaign.

[Insert Figure 6: Self-reported levels of USB collected using TfL's Attitudes survey with 95% confidence intervals here]

This result further disputes the possibility of an increase in prevalence as a candidate explanation for the increase in police recorded USB incidents.

Finally, for a comparison with the national picture, the Crime Survey for England and Wales (CSEW) found no changes in self-reported sexual

offences measured for the year ending March 2016. “Most recent estimates from the self-completion questionnaire module in the CSEW on intimate violence showed that the proportion of adults aged 16 to 59 who had been victims of sexual assaults in the last year (including attempted offences) had not significantly changed between the latest survey year (2.0%, equivalent to 645,000 victims) and the previous survey year (1.7%)” (CSEW, 2016). The CSEW report mentions that this no change in self-reported victimisation is against the backdrop of an increase in police-recorded crimes on a national level. While obviously at a very aggregate level, this finding further supports the argument that prevalence of USB, measured with self-report of victimisation is not increasing.

In sum, these surveys show no change in self-reported experience of USB, and thereby do not indicate an increased prevalence of USB incidents. Therefore, the increase in police-recorded crime numbers are likely to be attributable to increased reporting, rather than increased prevalence. However all three surveys have limitations. The RITSI questionnaire did not ask respondents about a time-frame around victimisation, and therefore their experience cannot be tied explicitly to the duration of RITSI campaign. The Attitudes survey shows a very low proportion of the sample experiencing USB. And finally the CSEW includes experiences with victimisation in all spheres of life, not just transport, and provides a national picture. However, that all three sources indicate no change in prevalence of self-reported experience USB while police records show an increase reaffirms the point that the increase can be attributed to increased reporting during this time, rather than an increase in prevalence. Future implementations of RITSI-type

initiatives should consider making changes to some of these measures in order to be better able to assess the impact of the campaigns.

Discussion

Results indicate that the publicity campaign waves resulted in increased retention of the RITSI campaign within the target population, wave on wave, with the exception of the last wave. While we observed no difference in attitudes towards reporting UBS incidents to the police between those who have seen the campaign and those who have not from the follow-up surveys, the findings from the time series analysis of reported USB incidents suggest the RITSI media campaign waves are followed by an increase in crime reporting which is not explained by an increase in the prevalence of sexual assaults. Therefore we suggest that there is some mechanism whereby reporting increases following the media intervention, but perhaps that we do not accurately capture this mechanism by surveying difference in reported willingness to report USB between those who have and haven't seen the campaign.

One of the main tenants of a realist evaluation is to consider the mechanisms around 'where' an intervention works and 'for whom'. One of the contextual findings to emerge in this paper was that reporting increased in some modes (LU and DLR) while not in others (buses). This ties back to the initial message development findings, where focus group participants commented on confusion about the jurisdiction of TfL, BTP, and MPS partnership; when the original message took place in a studio, participants asked if they should

report something that happens on the street. It is possible, that since the context for the final video was a woman on a tube train, this could have guided people in terms of what is to be reported as part of this initiative. Indeed we also note that the engagement of the lead force, BTP, was generally very high during the RITSI campaign and this may also have played a role in the changes in reporting. While the 61016 text message reporting mode advertised for RITSI was set up to accept reports from all transport modes, it is possible that this was not clearly communicated by the campaign. We propose that this finding is paramount to incorporate into future iterations of such campaigns: practitioners should take care to consider the environmental cues presented in these campaigns. It should form a key part of creating new hypotheses and new mechanisms by which such interventions can be imagined to take effect.

We also hoped to assess both intended and unintended consequences of the RITSI initiative. The possible unintended outcome considered here was an increase in passengers' fear of crime, which was not observed from the data available.

Future work should focus on an on-going assessment, to ascertain whether the increase in reporting is sustained over time. Further, qualitative inquiry could look into the mechanisms behind what drives the increase in reporting, as this was not captured by the way change in attitudes were measured here. It would also be of interest to understand in which age groups the biggest increase in reporting was identified, i.e. did RITSI hit its target age group only, or achieve an even spread? Future iterations of the RITSI campaign material

should showcase other types of transport environments, such as buses, and evaluations should then consider whether reporting across these modes also increases.

Finally we note that while this paper indicates the that first part of the RITSI slogan, ‘Report it to Stop it’ has achieved its aim of increased reporting, future work could shift focus to the second part of the slogan to ask: did they stop it? A longer-term examination of the process might reveal the extent to which the increased reporting does indeed facilitate increase in detection, prosecution, or better targeting of preventative measures for the overall reduction in USB.

Adopting a realist evaluation framework allowed for the investigation of the embedded nature of a programme in its context, and the mechanisms by which it brings about change (Pawson & Tilley, 1997). Other evaluation methodologies, such as RCTs provide evidence when the evaluation is designed into the implementation process, and when clear experimental and control groups can be defined, but the intention of random allocation for example in RCTs is to remove the human intentionality from the investigation. In contrast, the realist framework allows for "an understanding of the interpretations of programme participants, [which] is integral to evaluating its outcomes" (Pawson & Tilley, 1997).

Conclusion

This paper has described in great detail the implementation of a publicity campaign designed to increase reporting of USB incidents on public transport.

We consider the mechanisms behind multiple stages of the development and deployment of this campaign, from message creation to the evaluation of its impact on people's perceptions and on reporting activity by victims of USB, as well as possible unintended effects on passengers' fear of crime. We note that overall the RITSI campaign increased reporting, and had a more visible effect on the reporting of offences occurring on the London Underground and DLR as opposed to buses. We believe the findings have implications for best practice in designing media campaigns to target specific problems and that these can be effective in raising awareness of a problem and even altering behaviour to encourage the reporting of previously lesser-reported crime incidents. We hope that it can serve as a template for future iterations of such programmes, and contributes to the evidence-base for interventions of this kind.

References

Bates, L. (2013). Project Guardian: making public transport safer for women. The Guardian, 01 October 2013, available: https://www.theguardian.com/lifeandstyle/the-womens-blog-with-jane-martinson/2013/oct/01/project-guardian-public-transport-safer-women

Bates, L. (2014) , *Everyday Sexism*, Simon & Schuster UK

Berk, R. A., Smyth, G. K., & Sherman, L. W. (1988). When random assignment fails: Some lessons from the Minneapolis spouse abuse experiment. *Journal of Quantitative Criminology*, *4*(3), 209-223.

Bowers, K., & Johnson, S. (2005). Using publicity for preventive purposes. Handbook of crime prevention and community safety, 329-354.

British Transport Police. (2013). Project Guardian Week of Action.BTP. As viewed 08/03/2017, available: http://www.btp.police.uk/latest_news/project_guardian_week.aspx

British Transport Police . (2017). Sexual Offences. As of: 2017-03-07. Available: http://www.btp.police.uk/advice_and_info/how_we_tackle_crime/sexual_offences.aspx

CSEW (2016) Crime in England and Wales: year ending Mar 2016. ONS Statistical Bulletin. Available: https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/bulletins/crimeinenglandandwales/yearendingmar2016 Accessed 22 September 2016

Department for Transport (2015) 'National Travel Survey: 2014' Available: https://www.gov.uk/government/statistics/national-travel-survey-2014 Accessed 22 August 2017

Flatley, J. (2016). Crime in England and Wales - Office for National Statistics. Retrieved from https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/bulletins/crimeinenglandandwales/yearendingsept2016#csew-sexual-offences-unchanged-and-rise-in-police-recorded-offences-slowing

Frederick, P. (2002) Hassled, but Helpless. The Hindu. 10 September. Available: http://www.hinduonnet.com/mp/2002/09/10/stories/2002091000070100.htm.

Gekoski, A., Gray, J. M., Horvath, M. A., Edwards, S., Emirali, A., & Adler, J. R. (2015). 'What works' in reducing sexual harassment and sexual offences on public

transport nationally and internationally: a rapid evidence assessment'. Project Report. Middlesex University; British Transport Police; Department for Transport, London. Retrieved from Middlesex University's Research Repository at http://eprints.mdx.ac.uk/15219/

Gray, E., Jackson, J. and Farrall, S. (2011). Feelings and functions in the fear of crime: Applying a new approach to victimisation insecurity. British journal of criminology, 51(1), pp.75-94.

Haynes, K., Eckley, I. A., & Fearnhead, P. (2014). Efficient penalty search for multiple changepoint problems. arXiv preprint arXiv:1412.3617.

Heckman, J. J., & Smith, J. A. (1995). Assessing the case for social experiments. *The Journal of Economic Perspectives*, *9*(2), 85-110.

Herbel, S., & Gaines, D. (2010). Women's Issues in Transportation: Summary of the 4th International Conference. Conference overview and plenary papers (Vol. 46). Transportation Research Board.

HMCPSI & HMIC (2007). Without Consent: A report on the joint review of the investigation and prosecution of rape offences. London: HMIC. Retrieved from http://www.justiceinspectorates.gov.uk/hmic/media/without-consent-20061231.pdf

Home Office. (2013). Official Statistics: An Overview of Sexual Offending in England and Wales. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/214970/sexual-offending-overview-jan-2013.pdf

IBM Corporation. (2012). IBM Knowledge Centre: Comparing Column Proportions. SPSS Statistics 21.0.0. Accessed: 6 June

2016. https://www.ibm.com/support/knowledgecenter/en/SSLVMB_21.0.0/com.ibm.spss.statistics.help/sig_tests_colprop_ex.htm

Jafarova, T., Campbell, S., & Rojas, W. S. (2014). AZE: Rapid assessment on sexual harassment in the Baku metro rail - final report. Philippines: Asian Development Bank.

Johnson, S. D., & Bowers, K. J. (2003). Opportunity is in the eye of the beholder: The role of publicity in crime prevention. Criminology & public policy, 2(3), 497-524.

Killick, R., Fearnhead, P., and Eckley, I. A. (2012). Optimal detection of changepoints with a

linear computational cost. JASA, 107(500):1590 - 1598.

Killick, R., & Eckley, I. (2014). changepoint: An R package for changepoint analysis. *Journal of Statistical Software*, *58*(3), 1-19.

Lim, L. (2002). Sexual assaults in Singapore: a comparative study of rapists and molesters. Medicine, science and the law, 42(4), 344-350.

Loukaitou-Sideris, A. (2014). Fear and safety in transit environments from the women's perspective. Security Journal, 27(2), 242-256.

Loukaitou-Sideris, A., & Fink, C. (2008). Addressing women's fear of victimization in transportation settings: A survey of US transit agencies. Urban Affairs Review.

Loukaitou-Sideris, A., Liggett, R., & Iseki, H. (2002). The geography of transit crime documentation and evaluation of crime incidence on and around the green line stations in los angeles. Journal of Planning Education and Research, 22(2), 135-151.

Lucas, Karen. (2012) Transport and social exclusion: Where are we now?. Transport policy 20, 105-113.

Ministry of Justice, Home Office and Office for National Statistics (2013). An overview of sexual offending in England and Wales. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/214970/sexual-offending-overview-jan-2013.pdf

Natarajan, M. (2016). Rapid assessment of “eve teasing”(sexual harassment) of young women during the commute to college In India. *Crime Science*, *5*(1), 6.

Pawson, R. & Tilley, N. (1997). Realistic evaluation. Sage.

Pawson, R., & Tilley, N. (2009). Realist evaluation. Changes.

Shoukry, A., Hassan, M. & Komsan, N.A. (2008). "Clouds in Egypt's sky". sexual harassment: From verbal harassment to rape. Cairo: The Egyptian Center for Women's Rights.

Sidebottom, A., Thorpe, A., & Johnson, S. D. (2009). Using targeted publicity to reduce opportunities for bicycle theft: A demonstration and replication. European Journal of Criminology, 6(3), 267-286.

Smith, M. J. (2008). Addressing the security needs of women passengers on public transport. Security Journal, 21(1-2), 117-133.

Smith, M. J., & Clarke, R. V. (2000). Crime and public transport. Crime and Justice, 169-233.

Stringer, Scott M. (2007) Hidden in plain sight: Sexual harassment and assault in the New York City subway system. Office of the Manhattan Borough President, 2007.

TfL (2015) “Safety and security annual report 2014” Available: http://content.tfl.gov.uk/safety-and-security-annual-report-2014-15.pdf Accessed: 10/10/2016

Wilson, E.B. (1927) Probable inference, the law of succession, and statistical inference. Journal of the American Statistical Association, **22**, 209–212.

Appendix A

The figures below show the penalty value applied versus the number of changepoints observed as part of the changepoint package. We selected a penalty value where we the distribution starts to flatten out (Haynes et al 2014) for both bus related sex offences (343 penalty points) and those occurring on the LU and DLR (373 penalty points).

[Insert figure 7 here]

[Insert figure 8 here]

Tables and Figures

Table 1: Data used for realist evaluation

Hypothesis	Data used
Impact on perceptions	RITSI questionnaire
Fear of crime	Attitudes survey
Changes in USB reporting to police	Police recorded crime data
Changes in self-reporting of USB	RITSI questionnaire, Attitudes survey

Table 2: Recognition of RITSI campaign by wave

Wave	% Yes to *"Have you seen this [video] advertisement before?"*	% Yes to *"Have you seen this advertisement before on social media?"*	% Yes to *"Have you seen any of these credit card sized foldable leaflets before?"*	% Yes to *"Have you seen this advertisement before?"*
First wave	18	NA	3	19
Second wave	26*	12	4*	29*
Third wave	51*	27*	8*	55*
Fourth wave	54	30	10	59
* Significant difference from previous wave at $p < 0.05$ alpha level using column proportions test				

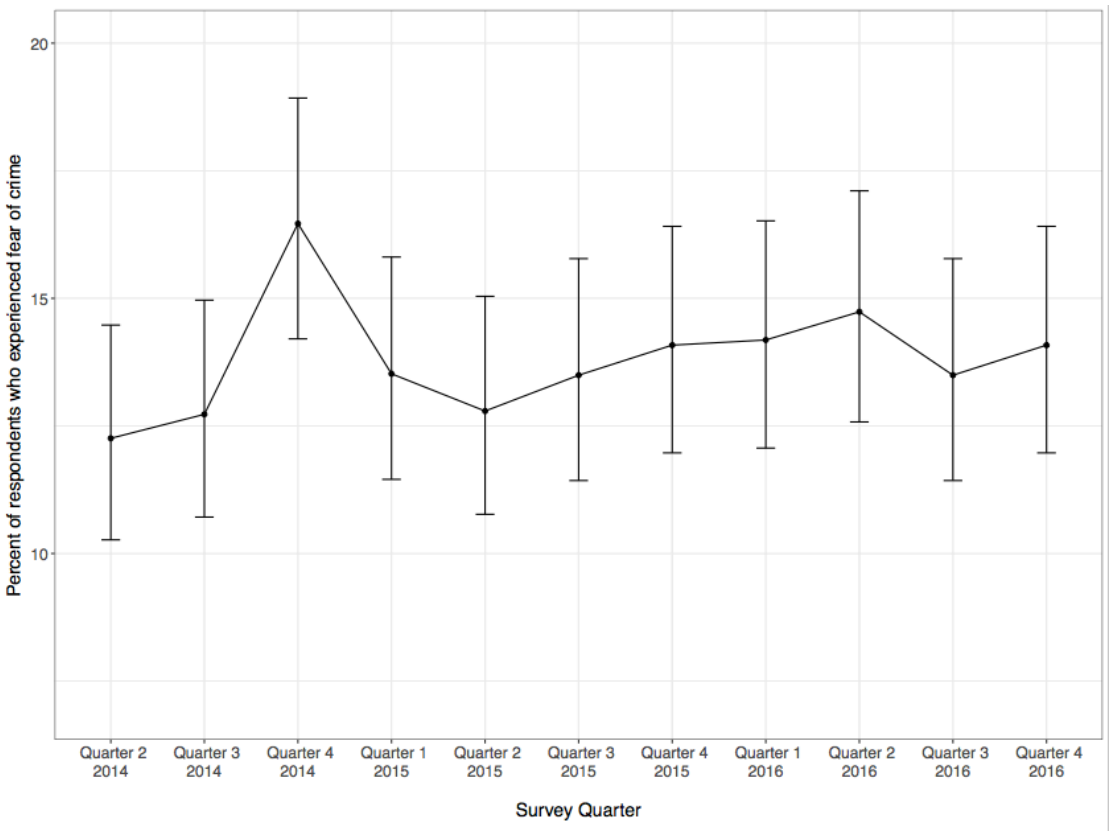

Figure 1: Percent of respondents who expressed worry about crime quarterly over the RITSI campaign period

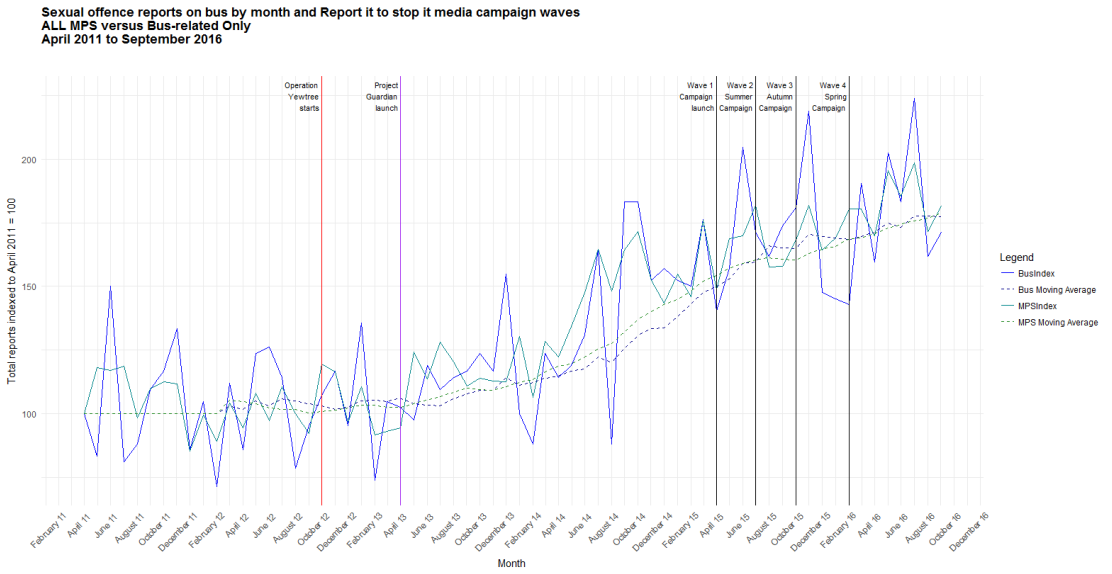

Figure 2: Volume of USB reports over time, comparing all MPS reports and those on buses or at bus stops only

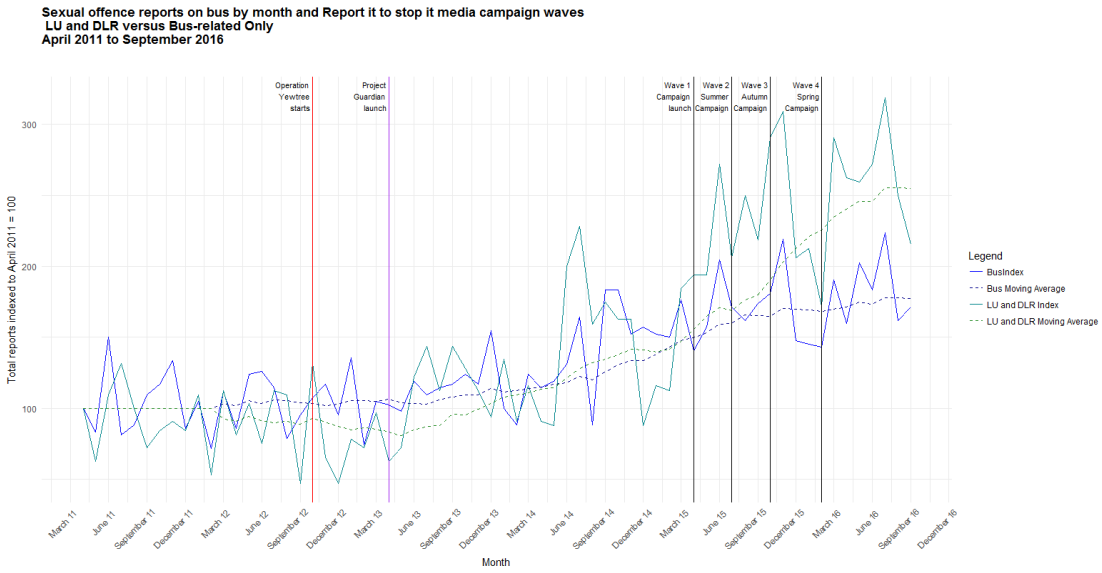

Figure 3: Volume of USB reports over time, comparing London Underground and Docklands Light Rail (LU and DLR) reports and those on buses or at bus stops

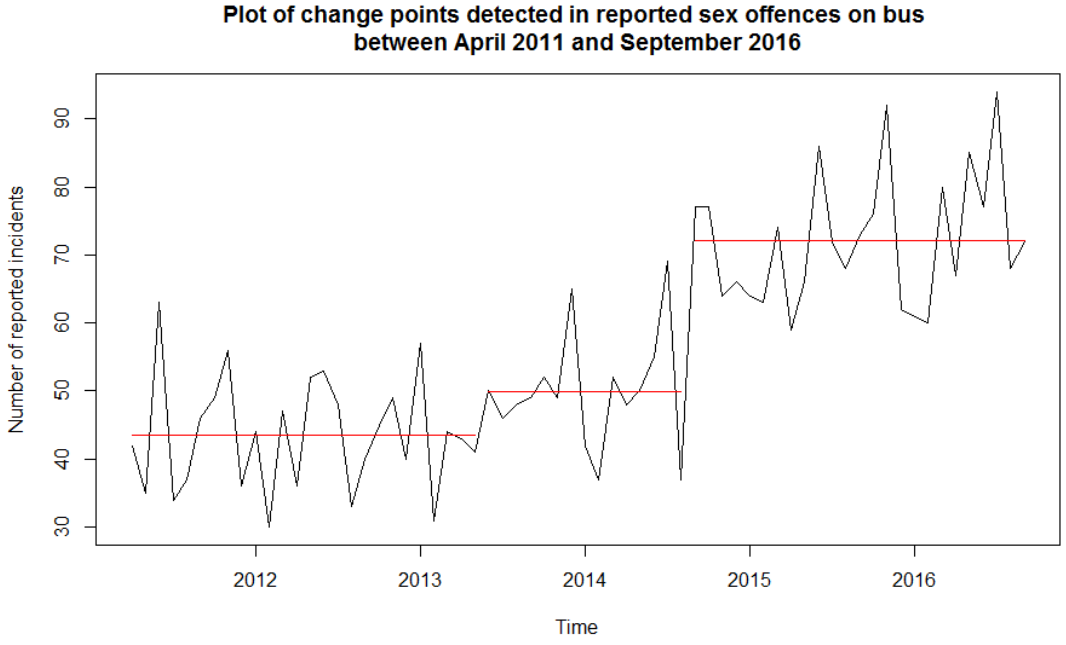

Figure 4: Change points detected in volume of reported sex offences on buses

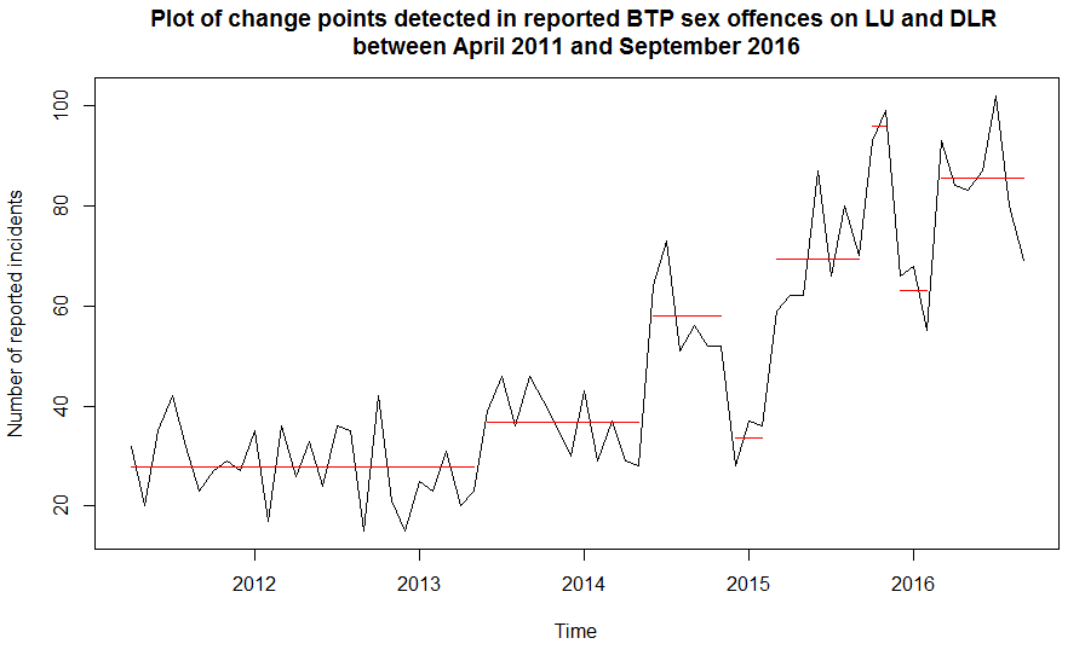

Figure 5: Change points detected in volume of reported sex offences on LU and DLR

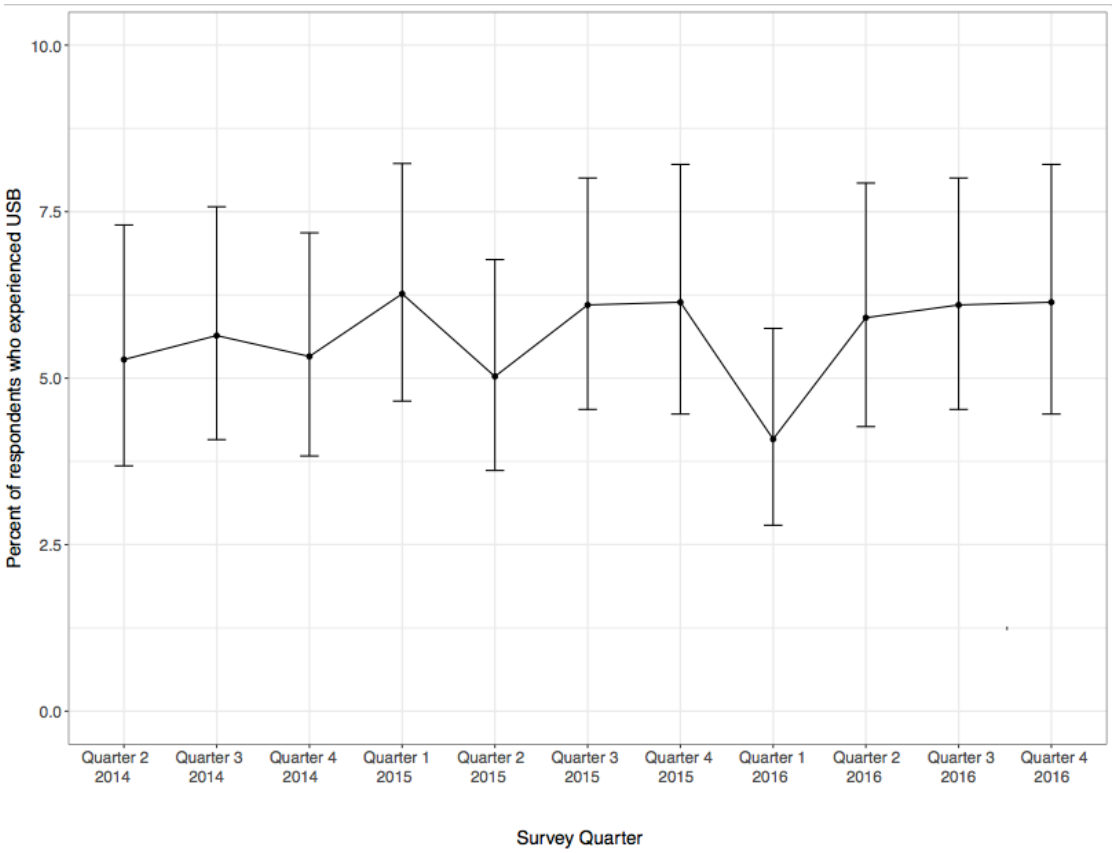

Figure 6: Self-reported levels of USB collected using TfL's Attitudes survey with 95% confidence intervals

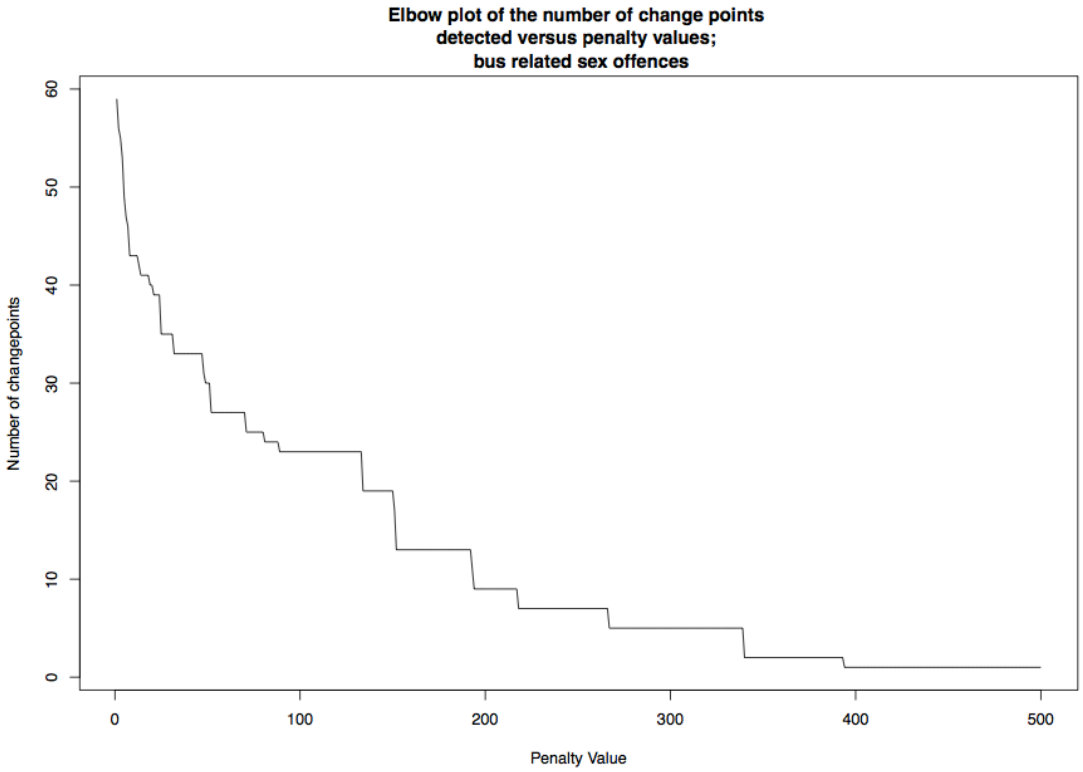

Figure 7: Elbow plot of the number of change points against penalty point values for bus related USB

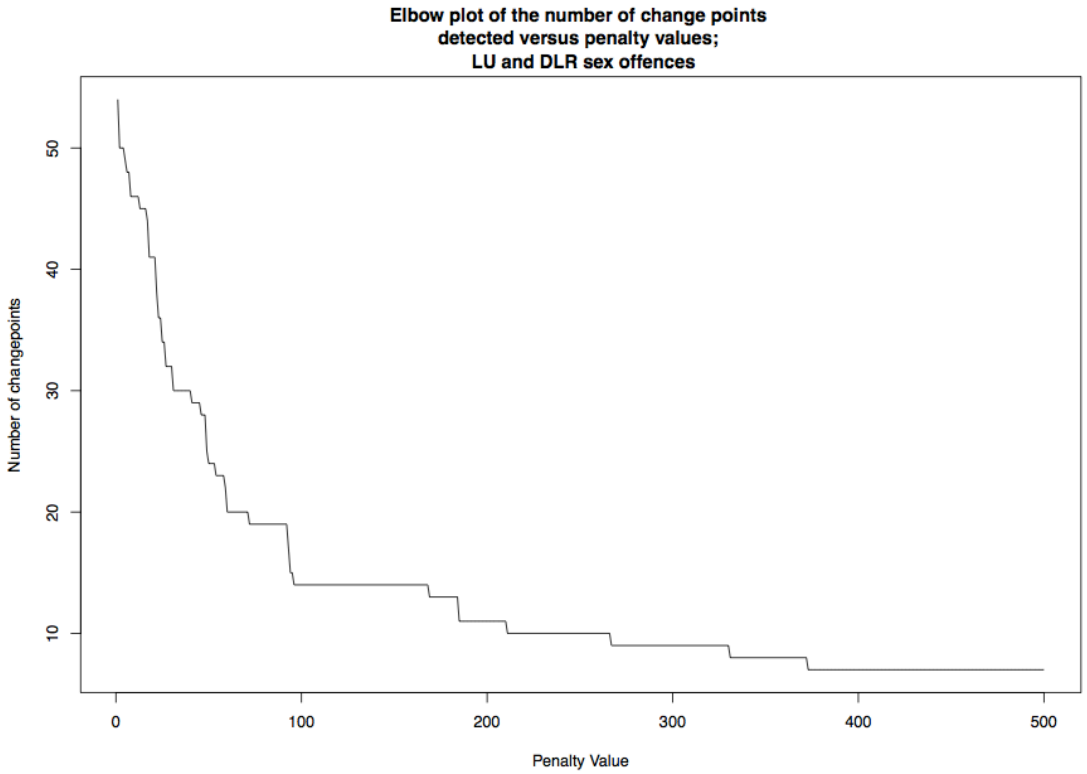

Figure 8: Elbow plot of the number of change points against penalty point values for LU and DLR related USB