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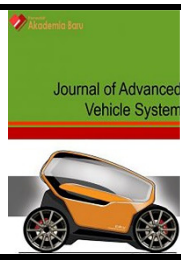

Probing the effectiveness of 'OP Selamat' in creating the perception of being caught among road users in Malaysia

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ABSTRACT

This article mainly discusses the effectiveness 'OP Selamat' in increasing the Perception of Being Caught (POBC) for committing traffic offences among road users in Malaysia. The analysis was based on the data from previous POBC studies from year 2008 until 2013. It can be seen that the 'OP Selamat' program was found to be effective in increasing the overall road users' POBC for committing traffic offences. The analyses have confirmed that there was statistically significant difference in mean scores of road users' overall POBC. It is hoped that the discussion with regard to POBC would help the concerned parties in constructing a concrete strategy in road traffic enforcement.

1. Introduction

The increasing number of casualties due to road traffic crashes in Malaysia is worrying. Based on the recent statistics, the number of fatalities alone in 2014 were 6,674, while the severe and minor injuries were 4,432 and 8,598, respectively [1]. In response to the scenario of road traffic crashes in Malaysia, the government has taken several initiatives to reduce the number of crashes and one of them is to create the perception of being caught (POBC) among the road users under the umbrella of road traffic enforcement.

Launching of special enforcement program during festive seasons is one the efforts to ensure high POBC among road users. Many countries have performed special advisory and enforcement effort during festive seasons such as during Christmas, Easter day and New Year celebrations. In

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Queensland, Australia, an Easter Road Safety Campaign was executed during Easter holiday break in year 2013 [2]. The objective was to ensure safe road behaviours over Easter. They were focusing on the so called 'fatal fives' i.e. speeding, drink or drug driving, not wearing seatbelt, fatigue, inattention and distraction. Furthermore, an ad campaign called '*Better Slow Down*' was launched by targeting young male drivers aged 17 to 24 years' old who are over-represented in fatal speeding crashes in Queensland.

During Christmas holiday, the police was focusing on the 'fatal five' offences including road user behaviour that could affect driver's focus such as use of mobile phones, eating or drinking, adjusting vehicle equipment and controls, or any other actions that distract drivers from maintaining control of their vehicles [3]. High visibility patrols and traffic enforcement operation over the holiday period were also conducted in support of the '*Anywhere – Anytime*' strategy. Over this period, police will be deployed across the state and will use covert and marked mobile speed cameras, marked and unmarked police patrols, fixed speed cameras, hand-held speed detection devices and the automatic number plate recognition system.

Easter Crossroad year 2012 in New Zealand more concentrated on maintaining the safety of people who travel away over the break season and at the same time monitoring the common offences such as speeding, not wearing seatbelts and drunk driving [4]. Furthermore, awareness campaign themed '*Road Safety is Everyone's Responsibility*' could be considered as successful since out of more than 500 crashes occurred, none of them involved fatal cases. This was a considerable reduction as compared to previous Easter when there were almost 600 crashes occurred.

As reported by South Africa's Department of Transport (2012), a pre-December holiday traffic law enforcement operations was conducted to prepare for Christmas holiday [5]. The traffic enforcers had been practising 'stop-and-check' approach to vehicles in South Africa. Other than 'no compromise' on the traffic punishment, the sentences imposed by the courts include hefty fines, imprisonment without the option of a fine, as well as suspension/cancellation of driving licences. The effort led to reduced fatalities by 75% during the 2011/12 festive season on the N3 highway between Gauteng and KwaZulu-Natal. National preliminary figures for the past festive season (2011/12) road death toll also reflect a decrease in road fatalities as compared to the previous festive season (2010/11) report.

Relying on POBC to increase compliance to road traffic laws is vital. Many studies across the globe have proven that POBC is effective in reducing the number of traffic crashes especially with regard to speeding [6,7,8,9,10,11]. In a study done by Summala in 1985, POBC is proved as an effective measure in increasing traffic law compliance [11]. It is also generally accepted that the 'risk of detection' rather than the 'severity of punishment' is the most important factor behind compliance to road traffic laws. A study done by Mannering in 2008 on the POBC for speeding found that the drivers believed that they will only be fined for speeding if they drive 10.88 km/h over the speed limit [7]. He also found out that drivers associated safety measurements with the likelihood to be fined. They believe that they will only be fined by the police if safety is threatened. De Waard (1994) on the other hand found that the perception of being caught plays an important role in speed choice which reduces the driver's tendency to speed [10]. In addition, Glendon (2003) in his study has concluded that drivers who witnessed other drivers being stopped by the police are more likely to reduce their speed accordingly [9].

Furthermore, another study by Adams-Guppy and Guppy in 1995 have looked onto the role of the perceived probability of adverse events (perceived risk) together with the utility measures (e.g. the importance of getting to a destination on time) in predicting self-reported behaviours [12]. In their study, respondents were asked to indicate on their frequency of speeding on motorways at 10 mph and 20 mph above the speed limit. Analysis performed has confirmed that while perceptions of

the risk of injury were not good predictors, things are going the other way around for time pressure. Such results indicate that more frequently occurring positive factors are better predictors of behaviour than rare, but negative, events. Moreover, Brown and Cotton in 2003 have looked onto drivers' perceptions of risk in relation to speeding, and risk-mitigating beliefs (the common-sense notions that a driver might employ to justify their speeding, e.g. it is acceptable to speed when there are no cars around or when driving on a straight road) [13]. They managed to conclude that those who adopt risk-mitigating beliefs possess higher levels of speeding. In addition, as estimates of risk partially mediated this effect, the implication is that these risk-mitigating beliefs may serve to reduce perceptions of the risk of speeding.

In Malaysia, the special enforcement program is known as 'OP Selamat' (Operation Safe), or previously known as 'Ops Sikap' (Operation Attitude) and 'Ops Statik'. It is focused on behavioural changes through more visible traffic enforcement activities [14]. This had now been the country's practice or tradition in preventing road traffic crashes and fatalities via enforcement method, yet the main goal is more towards fatal crashes. 'OP Selamat' is a strategy that is regarded as a feasible approach in changing the behaviour of road users in Malaysia during the hectic festive seasons. 'OP Selamat' has now been practiced for many years, yet its effectiveness in creating POBC among road users in the long run is still unclear. Thus, the analysis aims to identify the effectiveness of 'OP Selamat' in increasing POBC based on the common phases of the special enforcement program – before, during and after 'OP Selamat'.

2. Methodology

This study utilized secondary data collected from previous POBC studies conducted during 'OP Selamat' of Chinese New Year (OPS CNY) in Malaysia by the authors. The details on the 'OP Selamat' were gained from the related agencies i.e. Royal Malaysian Police (PDRM), Road Transport Department (JPJ) and Land Public Transport Commission (SPAD). In this particular analyses, only data from 2008 until 2015 were analysed. The previous studies involved a total of 25,891 respondents, and those studies had been conducted at several locations along the federal roads and expressways (tolled highways). Each studies includes information on the users' POBC and their demographic information such as gender, age, race, level of education, monthly income, vehicle information and experience of being ticketed. The descriptive analysis was performed to describe the overall POBC. The inferential analyses, i.e. independent-samples t-test and ANOVA, were performed to address the two main focus of the study: (i) to measure the success of 'OP Selamat' in creating POBC among the road users by measuring the difference based on the common phases of 'OP Selamat' (before, during and after); and (ii) to measure the difference of POBC by the year of 'OP Selamat', in which the data covered were from 2008 until 2015.

Though the entire analysis involved different set of respondents, it can be assumed that the entire series of POBC study is consistent since the same set of POBC questionnaire were used. An independent-samples t-test were performed to compare the mean scores of road users' overall POBC for 'OP Selamat' (OPS CNY year 2013 until 2015). A one-way between-group analysis of variance (ANOVA) were performed to investigate whether there is a difference in mean scores of road users' overall POBC for three main periods (OPS CNY year 2008 until 2012). Meanwhile, post-hoc comparisons using the Tukey HSD test were performed to explore whether there is a difference occurs among mean scores from year 2008 until 2015.

3. Results and discussion

In order to observe the pattern of POBC, the collected data was categorised into three common phases of 'OP Selamat' (before, during and after) for the year 2008 until 2012. In the case of 2013 until 2015, the observations on POBC can only be seen before and during 'OP Selamat' only. The mean scores of road users' POBC was determined for each 'OP Selamat' program during the festive seasons.

Table 1 illustrates the summary of the mean scores of road users' POBC according to 'OP Selamat' Chinese New Year (OPS CNY) for the year 2008 until 2015. For the 'Before OP', the mean scores of road users' POBC were rather low for the year 2008, 2014 and 2015 as compared to the other phases (during and after), as well as across the years. There were significant increments in road users' POBC in 2008, 2012 and 2013, i.e. 5.24, 5.56 and 5.02 for 'During OP', respectively. This perhaps due to road users' actual increase in awareness and/or the expectation of increased enforcement. With regard to 'After OP', except for the year 2010 and 2012, there were a considerable growth in mean scores of road users' POBC if compared with 'Before OP'. Furthermore, it can be seen that the road users' POBC weakened after the OPS CNY ended during the year 2008, 2010 and 2012, but slightly increased in 2009 and 2011 even after the OPS CNY ended.

Table 1
Analysis in road users' overall POBC for 2008 until 2015 'OP Selamat' Chinese New Year (OPS CNY) festive periods

Phases	OPS CNY (Mean Scores)							
	2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
'Before OP'	4.08	4.91	4.93	4.45	4.25	4.34	4.20	4.18
'During OP'	5.24	4.98	5.33	4.30	5.56	5.02	4.67	4.78
'After OP'	4.57	5.09	4.93	5.45	5.01	-	-	-

The mean scores collected was from 0 to 10, whereby 0 indicates perception of not being caught at all while a 10 would indicate a sure POBC. The percentages of road users' perception level of being caught were compared before, during and after the launch of the OPS.

An independent sample test and a one-way between-group analysis of variance test were performed to investigate whether there is a difference in mean scores of road users' overall POBC for each OPS CNY. An independent ANOVA test in Table 2 reveal that there were statistically significant differences in the mean scores of the overall POBC for traffic offences for three common phases each year (OPS CNY year 2008 until 2012). Road users' overall POBC scores 'During OP' were higher than before and after the implementation of OPS CNY for the year 2008, 2010 and 2012. Meanwhile, for OPS CNY year 2009 and 2011, road users' overall 'After OP' POBC scores were higher than before and during the OPS CNY. Thus, the road users' overall POBC for traffic offences were hypothetically influenced by the implementation of OPS CNY.

Meanwhile, independent sample t-test in Table 3 reveal that there were statistically significant differences in the mean scores of the overall POBC for traffic offences for two common phases each year (OPS CNY year 2013 until 2015). Road users' overall POBC scores 'During OP' were higher than before the implementation of OPS CNY for the year 2013, 2014 and 2015.

Though the findings from the inferential statistics of the POBC study shows a significant difference, the percentage rate during the eight years of the studied OPS CNY (2008 to 2015) was still

at a moderate level. This also means that the road users' compliance to road traffic laws is still low. This doesn't bode well because road users assume that there's nothing to hold them from committing road traffic offences and there will be no enforcement seen to monitor them (overt approach).

Table 2
Comparison of road users' overall POBC according to phases for CNY 2008 until 2012

	Mean	SD	ANOVA Test
CNY 2012			
'Before OP'	4.25	2.69	*F* (2,1197)=28.568****
'During OP'	5.55	2.11	
'After OP'	5.06	2.53	
CNY 2011			
'Before OP'	4.46	2.79	*F*(2,1197)=19.780****
'During OP'	4.27	2.71	
'After OP'	5.44	2.95	
CNY 2010			
'Before OP'	4.96	2.81	*F*(2,1794)=4.103*
'During OP'	5.36	2.67	
'After OP'	4.95	3.03	
CNY 2009			
'Before OP'	4.91	2.38	*F*(2,8097)=3.513*
'During OP'	4.98	2.40	
'After OP'	5.09	2.48	
CNY 2008			
'Before OP'	4.08	2.46	*F*(2,10797)=180.679****
'During OP'	5.24	2.53	
'After OP'	4.57	2.79	

*Significant at the level 0.05
**Significant at the level 0.01
***Significant at the level 0.001
**** Significant at the level 0.0001

Table 4 presents the data that were used to explore the effect of 'OP Selamat' based on the mean scores of road users' overall POBC from the year 2008 until 2015. There was a statistically significant difference at the p<0.01 level in mean scores for the eight years of 'OP Selamat' during CNY, i.e. $F(7,9293)= 14.824$, $p=0.0001$.

Post-hoc comparisons using the Tukey HSD test indicated that the significant difference occurs between year 2011 and the other years of 'OP Selamat' implementation. The mean scores for year 2009 (M=4.98, SD=2.39) were significantly different from year 2011 (M=4.26, SD=2.71) and year 2012 (M=5.55, SD=2.107). Year 2012 did not differ significantly for year 2008 and year 2010. Meanwhile, for year 2013 (M=5.02, SD=3.08), the mean score was only having significant different with year 2012

and 2011, while the rest of years were not significantly different. As indicated by 2014, the mean differences were only existing between year 2008 (*M*=5.24, *SD*=2.53), 2009 (*M*=4.98, *SD*=2.40) 2010 (*M*=5.36, *SD*=2.67) and for year 2012 (*M*=5.55, *SD*=2.107). Furthermore, for year 2015, the mean differences were only significant between year 2008 (*M*=5.24, *SD*=2.53), 2010 (*M*=5.36, *SD*=2.67) and 2012 (*M*=5.55, *SD*=2.107).

Table 3
Test of road users' overall POBC for 'Before OP' and 'During OP' for CNY 2013 until 2015

	Mean	SD	Independent sample t-test
CNY 2015			
'Before OP'	4.33	2.99	*t*(798)= -3.059**
'During OP'	5.02	3.08	
CNY 2014			
'Before OP'	4.20	2.55	*t*(1197)= -3.459***
'During OP'	4.67	2.16	
CNY 2013			
'Before OP'	4.34	2.19	*t*(1198)= -3.864****
'During OP'	5.02	3.08	

*Significant at the level 0.05
**Significant at the level 0.01
***Significant at the level 0.001
**** Significant at the level 0.0001

Based on the finding, the trends show an increment during the 'OP Selamat' implementation as compared to 'Before OP'. These results corroborate the report of TRB in 1998 [15], which stated that compliance with any traffic regulation such as the speed limit requires a reasonable constraint on behaviour such as 'OP Selamat' implementation in Malaysia. Though the effect of this enforcement program have yet to produce a considerable reduction in road traffic casualties, the operation ('OP Selamat') is still valid to conduct in order to at least creating the POBC among road users.

Table 4
Mean scores of overall POBC during OPS CNY from 2008 until 2015 and fatalities recorded

Year	POBC Study		Total Fatalities (and daily fatalities)
	Mean	SD	
2015	5.02	3.08	199 (13.3)
2014	4.67	2.16	162 (10.8)
2013	5.02	3.08	194 (12.9)
2012	5.55	2.11	168 (11.2)
2011	4.27	2.71	199 (13.3)
2010	5.36	2.67	201 (13.4)
2009	4.98	2.40	212 (14.1)
2008	5.24	2.53	190 (13.0)

4. Conclusion

The 'OP Selamat' program conducted in 2008 until 2015 was found to be effective in increasing the overall road users' POBC for committing traffic offences, and this is in line with other international studies' findings. However, the perception levels for traffic offences for eight years of 'OP Selamat' recorded were categorized as mediocre, which is in the range of 4.08 to 5.56. Road users are of the opinion that despite committing traffic offences, their probability of being ticketed by the authorities can be considered as low. In sum, it is hoped that the analyses on POBC would help the concerned parties in managing the road traffic enforcement in the future.

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