PUBLIC HEALTH RESEARCH

The Effect of Rear Seatbelt Advocacy and Law Enforcement in Reducing Injuries among Passenger Vehicle Occupants in Malaysia

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ABSTRACT

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Introduction The increase in car usage due to economic prosperity has led to increase in occupant injuries. One way to reduce the injuries encountered by road accident victims is by implementing the rear seatbelt (RSB) law. Rear seatbelt wearing has been proven to save lives. In Malaysia, the implementation of the restraint system for front occupant has started in the 70's. However, the rear seatbelt enforcement law only came in 2009, after six months of an advocacy program. Prior to the introduction of the rear seatbelt law, rear seatbelt wearing rate was rather low, started to increase gradually during the advocacy period and jumped to the highest level after two month of the enforcement. This paper attempts to assess the effectiveness of the rear seatbelt intervention in reducing injuries among passenger car occupants in Malaysia using the generalized linear model (GLM).

Methods In GLM procedure, the dependent variable is the number of people from passenger vehicles that sustained severe and slight injuries, for the study period. The study period selected covers six months before implementation, six months during advocacy program, and six months after the law is implemented. The independent variables considered are enforcement and balik kampung activities (both are dummy variables) and time effect.

Results Our results suggest that RSB intervention (p-value= 0.0001) had significantly reduced the number of people sustained serious and slight injuries by about 20%.

Conclusions The implementation of change in the RSB law has benefited not only in reducing the number of injuries but also result to great impact to the health outcomes.

Keywords Rear Seatbelt Interventions - Poisson model - Health Outcomes.

INTRODUCTION

The number of fatalities for passenger vehicle occupants (car, 4-wheel-drive vehicle, hired car and van) in Malaysia has shown an increased by 18% from 1,310 fatalities in the year 2001 to 1,545 fatalities in year 2008[1]. Between driver and passenger, the higher increase in fatality came from the driver group, with 29% increase as compared to passengers with 5% increase. In Malaysia, the legal requirement for seatbelt wearing was enforced since the 70's but only for driver and front seat passengers. Previous research has however, shows that the risk of death of drivers and front seat passengers who used seatbelts was increased about five-fold when rear seat occupants were unrestrained[2]. This finding has indeed provided the need to review the seatbelt law implementation in Malaysia.

The effect of unrestrained rear passenger is also supported by a British study where risk of front seat passenger being killed in frontal impact is increased by about three-quarters and one-half in all impact collision with the presence of unrestrained rear passengers behind them[3].In addition, the use of rear seatbelt itself is proven to reduce injuries sustained by rear passengers[4, 5, 6, 7]. Therefore, the wearing of rear seatbelt will not only reduce the severity of injury to the rear passengers when crashes occurred, but it will also reduce injury severity of front occupants who sit in front of rear seat passengers[7].

The effectiveness of the rear seatbelt law however, varies from one country to another due to several factors such as acceptability level, consistency of enforcement and advocacy programs. According to the Malaysian Institute of Road Safety Research (MIROS) strategic plan 2007–2010[8], an analysis on the impact of the road safety interventions had shown that the rear seatbelts implementation could reduce the number of fatality in Malaysia by 30% in the year 2010 should the intervention coverage reach 80% (Table 1).

Table 1 Strategic Road Safety Interventions and Potential Fatality Reduction 2007-2010[8]

Program	% Intervention Coverage				Potential reductio n (%)	No. of Death	Expected No. of Fatality			
	2007	2008	2009	2010			2007	2008	2009	2010
Automated Enforcement System (AES)										
Speed Cameras	20	60	100	100	30	1400	84	252	420	420
Red light cameras	20	60	90	90	40	150	12	16	54	54
Lane Discipline	0	20	60	80	20	450	0	18	54	72
Helmet Program	30	65	100	100	50	1500	225	488	750	750
Rear Seatbelts	20	40	60	80	30	350	21	42	63	84
Airbags	10	20	40	60	30	400	12	24	48	72
Driver Training	10	30	50	60	10	300	3	9	15	18
RSE and CBP*	10	20	50	80	20	400	8	16	40	64
Motorcycle Lanes	10	20	30	40	80	500	40	80	120	160
Black Spots	10	20	30	40	30	500	15	30	45	60
Others	10	20	30	40	20	350	7	14	21	28
						6300	427	1009	1630	1782
		Deaths/10,000 Vehicles				3.45	2.94	2.45	2.21	

*RSE is Road Safety Education, CBP stands for Community-based Program

While a substantial research has been done to examine the benefit of seatbelt wearing, little attention has been given to investigate the actual reduction in injuries burden after the intervention. As rear seatbelt law has recently been introduced in Malaysia, it provides the opportunity to examine the effectiveness of the law in reducing road injuries. Hence, this paper attempts to investigate the effectiveness of the introduction of the rear seatbelt law in reducing vehicle occupant casualties, with regards to advocacy and enforcement activity on rear seatbelt law in year 2008 and 2009.

The implementation of the rear seatbelt law

One of the importance and proven policy that has been used to curb this problem is the implementation of the mandatory rear seatbelt law. Review of previous researches concluded that the seatbelt laws are effective to motivate vehicle occupants to buckle up and having primary enforcement law will provide more effective result[9, 10, 11]. In addition, by having a seatbelt laws will lead to higher wearing rates[6, 12]. Therefore, to further reduce the number of casualties among vehicle occupants, Malaysia has approved the rear seat belt law in addition to the front seatbelt regulation. The rear seatbelt regulation took effect on 1st January 2009.

Indeed, an ambitious goal of increasing rear seatbelt wearing and the empirical expected reduction in the number of fatality were set prior to the introduction of the law. It is expected that through the rear seatbelt law implementation, the number of death due to not wearing rear seatbelt could be further reduced by 84 deaths in year 2010[8].

Rear seatbelt law was implemented using a stepwise approach to avoid it being view as 'hastily implemented' by the public. Six month prior to the law implementation (1st Jun 2008 –31st Dec 2008), a national advocacy campaign was introduced. The campaign focused heavily on raising public awareness of the benefit of wearing a rear seatbelt and the upcoming effective date of rear seatbelt law enforcement. Combinations of message delivery methods were used during the campaign such as mass media, roadside activities, and community based forum and education.

Before the law can be implemented, there were several issues that needed to be solved. Extensive research was carried out by MIROS to ensure that the law is practical and beneficial to be applied in Malaysia. Among the research conducted was the assessment of rear seatbelt availability and accessibility in Malaysia. The research was later translated into cabinet paper to be presented to the ministers. The implementation of rear seatbelt law would also require amendment to the existing law thus it was presented in the parliament for approval.

The two main issues in implementing rear seatbelt law were availability of rear seatbelt inside passenger vehicles and accessibility of the passengers to the rear seatbelt. Research from MIROS found that 81% of the passengers already have the chance to wear seatbelt[13]. Though the percentage is higher than 50%, the percentage of rear seatbelt availability does not reach the threshold of 90% as expected. Therefore, the government made an engagement with vehicle manufactures to retrofit vehicles without rear seatbelt but with anchorage points to be installed with rear seatbelt for free.

To ensure a smooth flow of the rear seatbelt law, advocacy programs on rear seatbelt usage started 6 months before the law came into effect. The objectives of this advocacy programs are to increase the awareness and knowledge of road users with the benefit of wearing rear seatbelt thus will increase the acceptability level of road users with the new law. This advocacy programs were accompanied by enforcement activities whereby warning tickets were issued to rear car occupants whom did not wear their seatbelt.

Six month prior to the seatbelt regulation took effect; the rate of rear seatbelt wearing was low. Based on the study conducted from June 2008 to Dec 2008, the overall rate was 2.9% for June and July and gradually increased until it reached 7 % in Dec 2008[14].

With the introduction of rear seatbelt law, rear seatbelt wearing is enforced on all types of private passenger's vehicles except of commercial vehicles including taxis and busses; vehicles without proper anchorage point to install the rear seatbelt; vehicles registered before 1st January 1995; goods vehicle that weight more than 3.5 tonnes; and vehicles with more than 8 seats not including the driver's seat. These exemptions were made to ensure smooth implementation of the new law. The government will later lift these exemptions gradually as the issues of practicality of installing rear seatbelt to these vehicles and its accessibility can be solved.

METHODS

The Data

The data used in this study is the road accident data from January 2008 until June 2009. It was obtained from the Royal Malaysian Police (PDRM) compiled from all police-reported accidents that involve at least one motor vehicle travelling on a traffic way and resulting in injury or death across all states in Malaysia. The data involved in this study is one year before the implementation of rear seatbelt law, which is year 2008 and 6 months after the implementation of the law, which is January until June 2009.

In order to examine the effect of rear seatbelt law in reducing injuries, working dataset of the accident data were scoped to only vehicles carrying passenger(s) in the rear, sustained injuries and vehicle types that are affected by the law. Therefore, this study only involved drivers with rear passenger, front passenger with rear passenger and all rear passengers, coming from all passenger vehicle affected by the law, namely car, 4-wheel-drive vehicle, hired car and van. In addition, only road accidents with injuries were included in the dataset. To obtain the dataset for this study, data in

M-ROADS[15] were queried to match the scope as specified earlier. In total, the resultant dataset consists of 1,312 accidents involving 2,000 vehicles and 4,495 occupants, in which 2,172 were drivers or front seat passengers and the remaining 2,323 were rear passengers. Figure1 below shows weekly number of severe and slightly injured car occupants during the study period. From the time series plot, even though the series fluctuates frequently, it can be (refers to SVSL line) seen that there is a reduction over 18 months period. The magnitude of reduction is critically analysed in Section 4 in this paper.

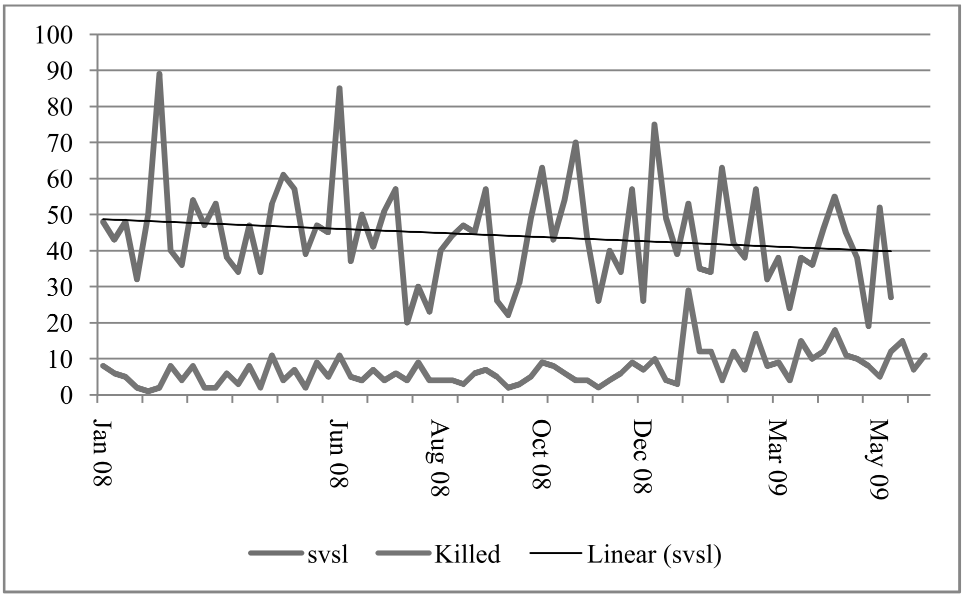

Figure 1 Weekly severe and slightly injured in car occupants before and after implementation of rear seatbelt law

The variables

The dependent variable used in this study is the number of people sustained serious and slight injuries. A weekly data that restricted to only for passenger vehicles that has at least one rear passenger was retrieved for the analysis. The severely injured is defined as when the victims sustained any of the following, permanent privation of the sight of either eye; permanent privation of the hearing of either ear; privation of any member of joint; destruction or permanent impairing of the powers of any member of joint; permanent disfiguration of the head or face; fracture or dislocation of a bone and any hurt that endangers life, or causes the sufferer to be, during the space of 20 days, in severe bodily pain or unable to follow his ordinary pursuits[1]. While slightly injured is define as any injury not covered under the definitions of death or serious injury.

The explanatory variables involved in this study are the enforcement and RSB law (Enforcement), Balik Kampung (BLKG) and Time (TIME). The first variable of Enforcement measure the effect of advocacy and RSB intervention in reducing the number of people sustained serious and slight injuries. Dummy variable was used to represent enforcement activity before advocacy period (January to June 2008) and during advocacy and enforcement program (July 2008 to June 2009) on rear seatbelt law (Table 2). Before rear seatbelt law is implemented, Malaysian government has launched her six months advocacy period. This is to enable smooth transition of road users' mindset and to equip some older vehicles with rear seat belt. Based on MIROS study[13], almost 90% of all passenger vehicles that travels on high speed road has at least one or more rear seatbelt and ready to use. Advocacy period has started on 1st June 2009 till end of December 2009. During advocacy period, media has extensively carried out promotional program to create awareness among passenger cars occupants on rear seatbelt wearing and their impact in saving lives. Towards the end of the advocacy period, rear seatbelt law was made public. Starting on 1st January 2010, all rear passengers of passenger vehicles should buckle up, or they will be given penalty if otherwise. Enforcement activity was carried out by traffic police and Road Transport Department officers.

"Balik Kampung" (BLKG) variable is used to measure sudden surge in traffic due to balik kampung activities. As Malaysia is a multicultural country, there are mainly three festivals (Hari Raya, Chinese New Year and Deepavali) that most Malaysian will celebrate according to their beliefs. Most of the time, the celebration is remarks with family gatherings, visiting close friends and some religious activity. Celebration usually is declared in

Malaysian public holidays. If the public holidays is coincide with school holidays, more days will be taken off from offices as parents take the opportunity to spend their time with their kids. With more days to spend and additional social activity were taken in place, the number of trips made during the holiday season increases and hence exposing road users to greater risk on the road. It is then essential to take into account these festive seasons in the model as a proxy to illustrate the travel patterns. This "Balik Kampung" variable has also been used by [16] in measuring the effectiveness of Running Headlight Intervention. A dummy variable is used to represent the traffic volume changes. Based on weekly data, there are several times the traffic volume increases due to festive seasons, school holidays and also public holidays that fall on the first (Monday) or second day (Tuesday) of the week, or on the last day of the working day (Friday). Assumption is made that whenever the public holidays falls on the above days, most Malaysian will take extra leave from their offices to spend with their families.

Time variable is also used as a proxy to measure the growth in traffic exposures. Radin et. al[16] used the week variable to reflect the growth and population over time to model and evaluate the effectiveness of Running Headlights intervention. This is also in line with the approach used by Broughton J[17]. Table 2 gives the description on the data and variable used in this study.

Table 2 Variables used in modeling the Effectiveness of Rear Seatbelt

Variable	Variable name	Definition	Data type
Number of people sustained serious and slight injuries	SVSL	Weekly count of people who were involved in traffic crashes and sustained either serious or slight injuries. Only for passenger vehicles that has at least one rear passenger.	Count data
Enforcement and RSB law	Enforcement	Dummy variable to represent enforcement activity on rear seatbelt law 0 to represent 'before advocacy period' (Jan-June 2008) 1 to represent 'advocacy and enforcement program' period (July 2008 – June 2009)	Categorical variable
BalikKampung	BLKG	Dummy variable to represent holiday effect on traffic movement 0 for off peak traffic/ non holiday season 1 for peak traffic/ holiday season	Categorical variable
Time	Time	Weekly time effect to cater for technological changes, growth for registered vehicles and road improvement (1, 2,3 ......,78)	Ratio

Statistical models

Poisson Model

In statistical model, the selection of model to be used is solely dependent on the nature of data collected to represent the phenomenon. For instance, the number of road accident victims that sustained serious and slight injuries is considered as count data. For this situation, linear methods such as least squares that are designed to deal with continuous variable are not appropriate for count data. Thus, the Poisson regression model is often being referred to as a benchmark model for modelling count data. This model dominates the count data modelling activities as it suits the statistical properties of count data and flexible to be reparameterised into other form of distributional functions[18, 19]. Though practically it is inadequate for its restriction assumption (equality of variance and mean), still the Poisson regression model is the simplest model and lends a good starting point to model count data. In this model, the response variable is assumed to be independent and follows a Poisson distribution. It specifies that each observed count y_i is drawn from Poisson distribution with conditional mean of μ_i, given vector X_i for case i. Thus the density function of y_i can be expressed as;

$$f(y_i|X_i) = \frac{e^{-\mu}\mu^{y_i}}{y_i!}, \text{ for } y = 0,1,2,.... \quad (1)$$

where $\mu_i = \exp(X'\beta)$. In order to develop a Poisson model, μ_i is expressed as a function of some explanatory variables through a log link function in the following form;

$$\ln \mu_i = X'\beta$$
$$\ln \mu_i = \alpha + \beta_1 x_1 + ..., + \beta_k x_k$$

(2)

or
$$\mu_i = \exp(X'\beta)$$
$$\mu_i = \exp(\alpha + \beta_1 x_1 + ..., + \beta_k x_k)$$
$$\mu_i = \exp^{\alpha}\left[(\exp)^{(\alpha+\beta_1 x_1 + ..., + \beta_k x_k)}\right]$$

Given the independent observations assumption, with density function (1), the regression parameters β can be estimated using the maximum likelihood method based on maximum likelihood function of

$$\log_e \mathrm{L}(\beta) = \sum \{Y_i X_i' \beta - \exp\left(X_i' \beta\right) - \ln(Y_i!)\}$$

(3)

Correcting for Overdispersion

Though the application of Poisson regression model works well for count data, it is constrained with the assumption of equality of variance and mean. If this assumption is not valid, the standard error estimated will be biased and model will produce incorrect test statistics[18, 20]. The implication of overdispersion has similar consequences as the failure of the assumption of homocedasticity in the linear regression model. When the variance of count data exceeds the mean, $Var(Y_i) > E(Y_i)$ a feature of "overdispersion" will occur. Otherwise, the Poisson model implies a property of so called "equidispersion". When overdispersion occurs, the Poisson maximum likelihood estimator obtained will be incorrect[19].

Due to this restriction, several alternative models have emerged to correct for overdispersion, among which is the Quasi Poisson estimation. Wedderburn[21] has developed a quasi-likelihood estimation technique to estimate parameters under GLM model. This technique corrects for overdispersion by multiplying the standard error of the model with the dispersion parameter value of ϕ. McCullagh & Nelder[22] suggested estimating the ϕ as a ratio of the deviance or the Pearson Chi-Square to its degree of freedom. This treatment will not give any changes to parameter estimates or intercept but their standard errors will be corrected giving wider confidence interval and higher p-value.

Test of Model fit

In modelling work, it is important to decide whether one model is significantly better than another when additional explanatory variables are added or excluded from the model. The quality of model that is the goodness of fit between the fitted $\hat{\mu}_i$ and the observed values y_i can be measured using various statistics. This study used the maximum likelihood ratio statistics or commonly known as Deviance and the Pearson χ^2 statistics to test for the goodness of fitted model for both Poisson and Negative Binomial model[23]. The Deviance value is defined as;

$$Deviance(D) = 2\left\{\sum_i \left[y_i ln(y_i / \hat{\mu}_i) - (y_i - \hat{\mu}_i)\right]\right\}$$

(3)

and

$$Pearson\,\chi^2 = \sum_i \frac{(y_i - \hat{\mu}_i)^2}{v(\hat{\mu}_i)}$$

(4)

where $v(\hat{\mu}_i)$ is the variance function for respective distribution in which for Poisson distribution $v(\hat{\mu}_i) = \hat{\mu}_i$ while for Negative Binomial model distribution, $v(\hat{\mu}_i) = \hat{\mu}_i(1 + \hat{\mu}_i\phi)$. Both values of Deviance and Pearson χ^2 should follow χ^2 distribution with $(N-p)$ degrees of freedom, where N is the number of observations and p is the number of parameters which have been estimated. For a well-fitting model, the expected value of scaled deviance should be approximately equal to the degree of freedom and the Pearson χ^2 value should be less than the $\chi^2_{\alpha, N-p}$.

It is noted that the compliance rate for rear seatbelt wearing was not included in the model. This was due to the availability of the data upon completing the model in this study. At the point the model was run, the compliance rate data was still under analysis and hence not available to public yet. However, there was some indication on the rear seatbelt wearing rate at the beginning of the advocacy program, and after the law has been implemented. It is reported that at the baseline (before the advocacy started), a 1.6% of rear seatbelt wearing rate was observed[14]. After two months of advocacy campaign, the rate jumps to 2.5%[14] as media played their roles in alerting road users to buckle up both at front and rear. However, the impact of advocacy did not last long as public perceive rear seatbelt as another type of government agenda of 'money making' through summons collection rather than for safety sake. The effect was seen after the law was implemented and enforcement level was still low. The rate was reported to decrease to almost the baseline value.

RESULTS

This study started with a saturated model that involves all the explanatory variables. A stepwise procedure for eliminating insignificant variables was undertaken and the most parsimonious model was chosen on the basis of Deviance value. The resulting Poisson and the corrected Poisson models are shown in Table 3. Model 1 (M1) describes the full model to explain the number of people sustained serious and slight injuries (SVSL). Based on the overall Poisson model, all terms are highly significant. Though all terms of TIME, BLKG and ENFORCEMENT are significant, inspection of the mean deviance which is the ratio of residual deviance over degrees of freedom for M1 model is 3.24, indicating that there is a problem of over dispersion. Hence, the assumed Poisson distribution of M1 is not appropriate.

Table 3 Regression Model (independent variable is SVSL)

Model	Variables	Estimates	Wald statistics	p-value	Scaled deviance	Likelihood ratio chi sq
M1	Constant	3.762	109.37	0.000	3.24	-344.85
	TIME	0.003	2.13	0.033		
	BLKG	0.355	9.32	0.000		
	ENFORCEMENT	-0.218	-3.45	0.001		
M2	Constant	3.762	60.72	0.000	1.0000	-101.1057
	TIME	0.003	1.28	0.200		
	BLKG	0.356	4.86	0.000		
	ENFORCEMENT	-0.225	-2.01	0.045		

In order to overcome the over dispersion problem, we used the Quasi Poisson model a proposed correction technique as suggested by Wedderburn[21]. Model 2 (M2) shows the corrected model for over dispersion using Quasi Poisson model. The final mean deviance is now almost close to unity with scaled deviance value of 1.0000. Based on model M2, it can be seen that all variables are significant at 5% level, except TIME.

Interpretation of coefficient

Based on final model M2, there are three important variables in used in explaining the number of accidents victims who suffers severe and slight injuries, namely TIME, BLKG and ENFORCEMENT. The number of injured victims is recorded on weekly basis, and both BLKG and ENFORCEMENT are measured using dummy variable. ENFORCEMENT represents availability of advocacy and enforcement program on rear seat belt (RSB).

The above model (M2) can be written in general GLM equation as follows:

SVSL = Exponential (3.762 + 0.003 TIME + 0.356 BLKG – 0.225 ENFORCEMENT) (5)

TIME variable is not significant in the model, as shown in Table 3. This indicates that over time, the number of people getting severe and slight injuries will continue to increase, but with presence of ENFORCEMENT, the effect is negligible.

From the equation, coefficient of BLKG is positive, indicating that when there is BLKG event, the number of people injured is increasing, whereas ENFORCEMENT has the inverse effect, in line with experts' expectation.

DISCUSSION

The application of Generalized Linear Model has been widely used in modelling road accident count data. This technique has been acknowledged as an appropriate technique to model discrete non-negative integer value of count data such as road accidents count. In examining the effectiveness of rear seatbelt law in reducing Injuries in Malaysia, Poisson and corrected Poisson model has been used.

The result suggests that traffic and enforcement are two important variables in influencing the number of accident victims who sustained severe or slight injuries. The best model to describe the effectiveness of enforcement and RSB intervention was found to be model M2. It gives the best reduction of scaled deviance over degree of freedom and all terms, except TIME variable are found significant.

Results show that BLKG variable is an important variable to reflect the change in traffic volume due to festive seasons. The change in the travelling and social religious activities during the festive week and public holiday had significantly contributed to the increase in the number of people who sustained serious and slight injuries. The number of people who sustained serious and slight injuries was found to have increased by about 44%

(exponential of 0.365) during festive seasons. This result is consistent with the study by Radin et al[16] which reported a significant increase in the number of motorcycle accidents during the fasting seasons.

ENFORCEMENT variable, which measures the presence of advocacy and enforcement program on rear seat belt, is significant at 5% significant level. Dummy variable has been used in explaining the presence of advocacy and enforcement of rear seat belt law. The effect of ENFORCEMENT variable can be calculated by taking EXPONENTIAL (-0.225), which is 0.7985 minus 1. It shows that a reduction of 20% in the number of people getting severe and slight injury can be predicted when there is enforcement of RSB and advocacy activity. However, due to the nature of dummy variable, sensitivity analysis cannot be conducted. If wearing rate data is available, a better model can be produced, together with sensitivity analysis.

On the other hand, further study could be conducted to compare the number of those who wear rear seat belt but not injured in road traffic crashes as opposed to the injured number. With this comparison, the impact of advocacy and law on rear seat belt wearing to the community can be evaluated using risk analysis tool such as odd ratio.

CONCLUSIONS

The detailed analysis on the effect of enforcement and RSB intervention implemented using GLM approach revealed that the intervention has significantly reduced the number of people who sustained serious and slight injuries by20%. Among the factors that can significantly influence the outcome of the RSB intervention is traffic and enforcement activities. However, only enforcement variable that can be manipulated while traffic will always depends on the occasion. Tougher enforcement would yield a better RSB wearing rate and based on initial result, a mere 2.5% compliance rate has already shown a positive result. Literature review has also shown that enforcement level of 80% could potentially reduce the number of injuries by 30% thus the level of RSB enforcement in Malaysia should be further increased in order to further reduce the number of injuries.

The effectiveness of rear seatbelt law implementation in reducing injury severity for both rear and front occupants is dependent on several factors. Among the biggest contributing factor is public acceptance. Public acceptance will lead to high compliance to the law. Although previous study conducted by MIROS has revealed accessibility to rear seatbelt is already at 81% prior to free retro-fitting rear seatbelt from manufacturers for qualified vehicles, the compliance level is still low at 7% prior to law enforcement. Multiple issues, such as the ability for the fourth passenger in rear the buckle-up were raised to challenge the law implementation. These issues will need to be tackled effectively and convincingly to ensure high acceptance of the public toward this new law.

Another major factor in ensuring the successfulness implementation of rear seatbelt law is the enforcement. Checking for seatbelt wearing is always a challenging task, as most would buckle-up upon reaching the checking point to avoid from being summoned. This is especially harder for rear lap belt as it could not easily be identified from the distance if the passenger is wearing it. In addition, although there were a period of 6 months advocacy before the law came into effect, many had still claims that they do not know about the law. Therefore, self-enforcement is always a preferred method as the road users should be convinced that the belt wearing law is for their own benefit.

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