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A CASE STUDY OF THE PREVALENCE AND CHARACTERISTICS OF RED LIGHT RUNNERS IN MALAYSIA

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CONTENT

1. Introduction
2. Objectives
3. Methodology
4. Results
5. Conclusion
6. Future Works

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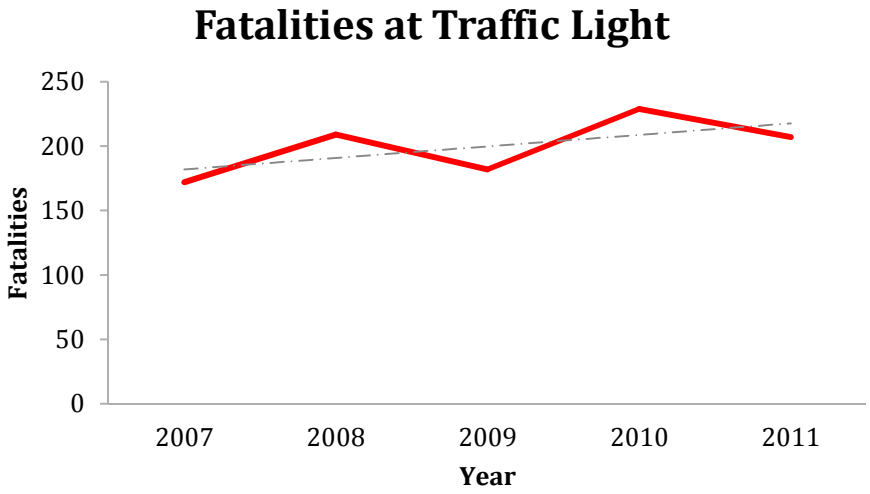
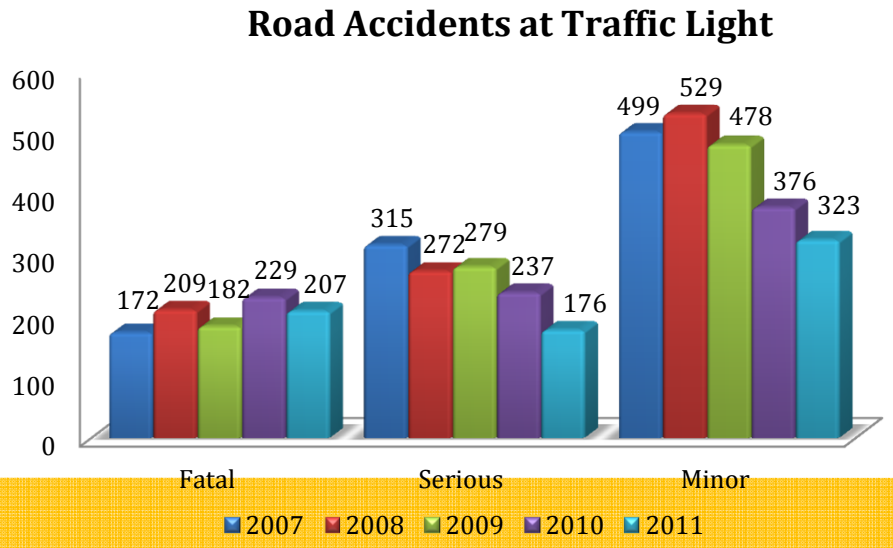
CURRENT SITUATION IN MALAYSIA



Fatalities at traffic light shows an UPWARD TREND from 2007 until 2011 despite the irregular ups and downs

Road accidents at traffic light shows an average of **22.8% for fatal**, **28.3% for serious** and **48.9% for minor injuries**



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1. INTRODUCTION

- Primary cause of crashes at traffic light occurred when vehicles entered the intersection on red signal.

- Drivers often face a problem when reaching a traffic light at the onset of amber; whether they have to stop or to proceed – Dilemma Zone / Option Zone

- Neither possible to proceed straight to clear the stop line nor possible to stop comfortably at the stop line.

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1. INTRODUCTION (Cont'd)

- Automated Enforcement System (AES) is one of the interventions that can help to curb red light running.
- AES on red light running can be an effective safety measure based on literature reviews detailing on its effectiveness.
- Very limited studies undertaken in this field in Malaysia.
- Malaysian Government was planning to implement AES for the 1st time in the country
- This study was carried out to examine the prevalence and identify the factors associated with red light running at selected intersections (proposed AES locations) in Malaysia.

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2. OBJECTIVES

- To examine the prevalence of red light running at selected intersections in Malaysia

- To identify the factors associated with red light running

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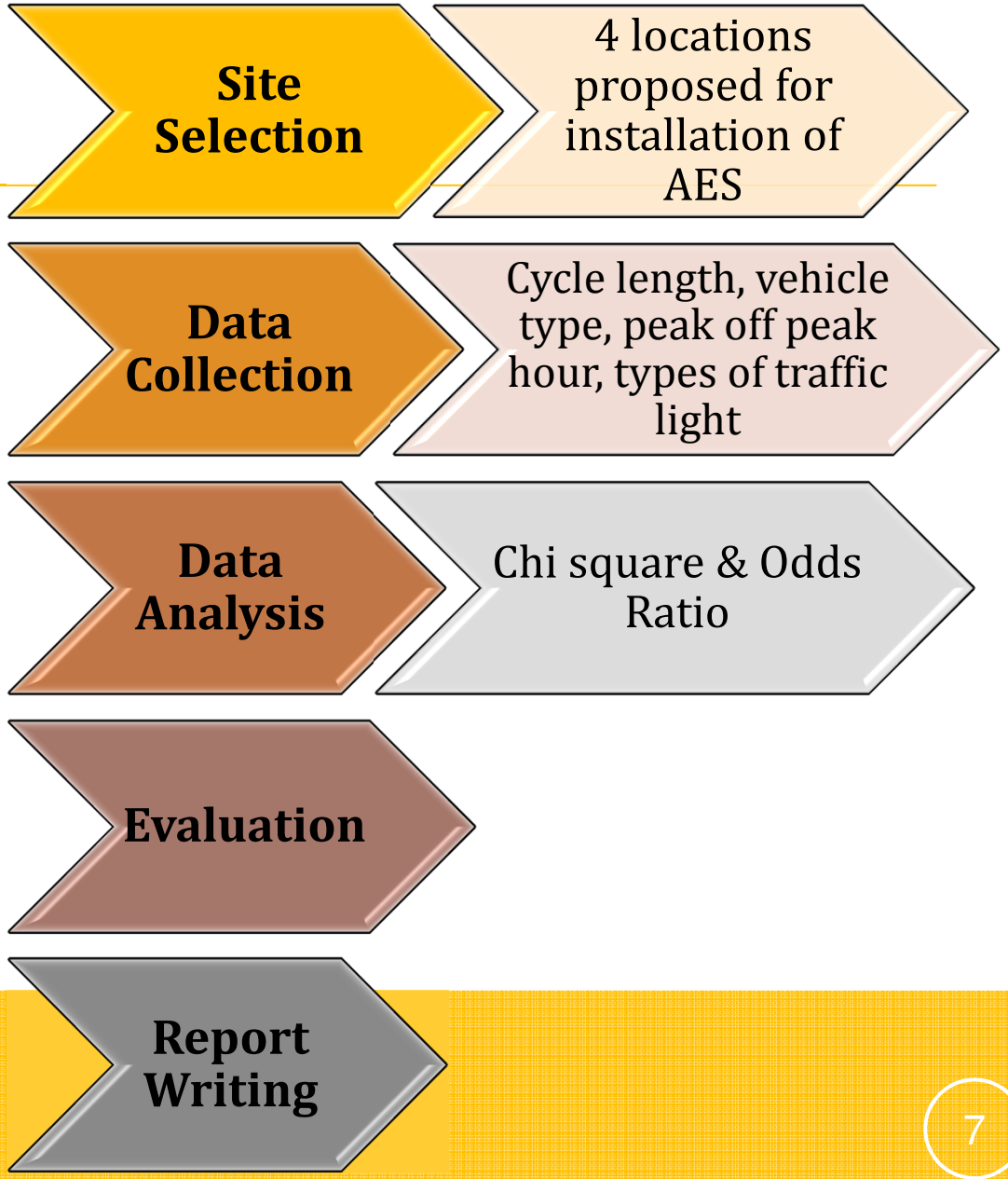
3. METHODOLOGY

Data Collected:

- **Traffic Volume** – right/left turn, through traffic
- **Violations** - right/left turn, through traffic



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4. RESULTS

N= 5090

Average Data Collection				
Vehicle Type				
	M/C	Cars	Others	Total
Volume	1502	2731	857	5090
(%)	29.5	53.7	16.8	100.0

- 29.5% motorcycle
- 53.7% cars
- 16.8% others

- Banting highest (18.8%)
- Jalan Klang Lama (11.7%)
- Taiping (10.5%)
- Sg. Siput (8.3%)

	Violate	%	Comply	%	Total
Jln Klang Lama	819	11.7	6193	88.3	7012
Taiping	555	10.5	4741	89.5	5296
Sg. Siput	348	8.3	3837	91.7	4185
Banting	729	18.8	3136	81.1	3865

	Violate	%	Comply	%
Overall	2451	12.04	17907	87.96

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Cycle length was found to be **significant** factor ($p<0.05$) in violation rates

4. RESULTS - Cycle Length

Cycle Length	Violate	(%)	Comply	(%)	Odds
Short (≤120s)	310	13.2	2039	86.8	0.15
Long (>120s)	303	11.1	2438	88.9	0.12
Total	613	12.0	4477	88.0	

Variable	Co-efficient	Standard Error	95% Significance	95% Confidence Interval	Odds Ratio
Cycle Time	0.20	0.09	0.02	1.03 - 1.45	1.22

- Short cycle length => 13.2% (310) of the vehicles violated the traffic lights, 86.8% (2039) complied.
- Long cycle length => 11.1% (303) violated and 88.9% (2438) complied.
- Violation rates during short cycle length slightly higher than during long cycle length.
- Drivers short cycle **1.22 times more likely** to beat the red light than drivers facing long cycle length.

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4. RESULTS - Peak - Off Peak Hour

Traffic light violation was found **not significant** (p = 0.88) with peak and off peak hour

Peak – Off Peak Hour	Violate	(%)	Comply	(%)	Odds
Peak	300	12.1	2177	87.9	0.14
Off Peak	313	12.0	2300	88.0	0.14
Total	613	12.0	4477	88.0	

Variable	Co- efficient	Standard Error	95% Significance	95% Confidence Interval	Odds Ratio
Time of Day	0.02	0.09	0.88	0.86 - 1.20	1.01

- Not much difference in percentage of violation can be observed between peak (12.1%) and off peak (12.0%).

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4. RESULTS - Types of Traffic Light

Chi square test done indicates the **significance** of this variable ($p<0.05$).

Types of Traffic Light	Violate	(%)	Comply	(%)	Odds
Fixed Timed	387	14.2	2332	85.8	0.17
Vehicle Actuated	226	9.5	2145	90.5	0.11
Total	613	12.0	4477	88.0	

Variable	Co-efficient	Standard Error	95% Significance	95% Confidence Interval	Odds Ratio
Types of Traffic Light	0.45	0.09	0.00	1.32 - 1.87	1.58

- From a total of 5090 samples, 14.2% violated the red light while 85.8% complied.
- Odds ratio stated that drivers at fixed- timed traffic light are **1.58 times more likely** to violate than drivers at vehicle-actuated traffic light.
- Therefore, the results show that types of traffic light is one of the factors affecting red light running.

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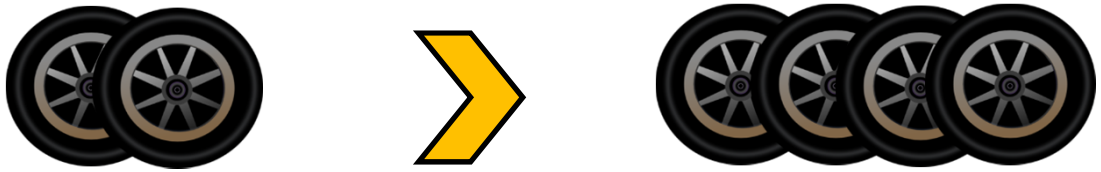
The result of chi square test proves this to be significant ($p<0.05$)

4. RESULTS - Vehicle Types

Vehicle Types	Violate	(%)	Comply	(%)	Odds
2 wheeler	365	24.3	1138	75.7	0.32
4 wheeler	248	6.9	3339	93.1	0.07
Total	613	12.0	4477	88.0	

Variable	Co-efficient	Standard Error	95% Significance	95% Confidence Interval	Odds Ratio
Vehicle Types	1.46	0.09	0.00	3.63 - 5.14	4.32

- Two wheeled vehicles recorded higher traffic light violations with 24.3% compared to four wheeled vehicle with 6.9%



4.32 times more

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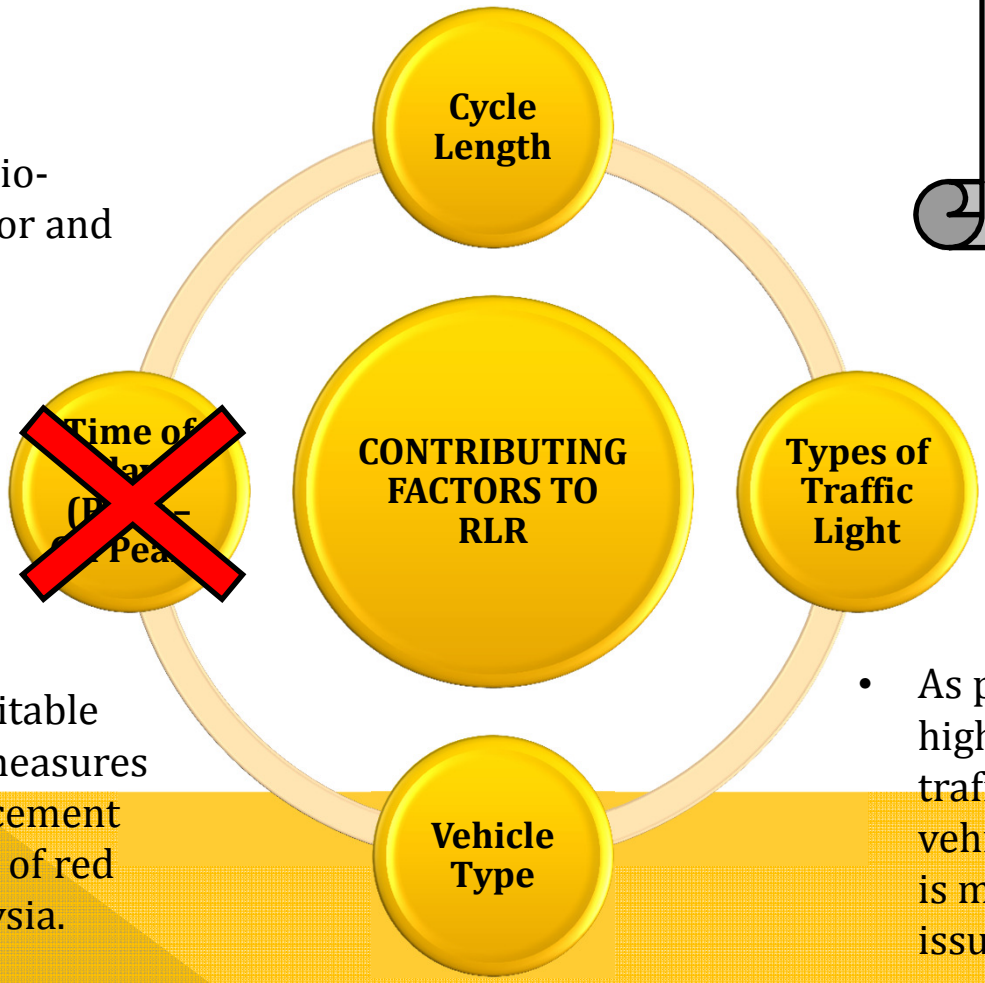
5. CONCLUSION

- Education and enforcement will definitely reduce the tendency to beat the red light especially among motorcyclists.

The results only represent the sample size. Further study needs to be conducted in order to come out with a result that can be generalized for drivers in Malaysia.

Malaysia's socio-demographic factor and lifestyle



- Implementation of suitable engineering countermeasures and automated enforcement to reduce the number of red light running in Malaysia.

- As people tend to violate higher at a fixed timed traffic light, the use of vehicle actuated traffic light is more suitable to solve the issue of red light running.

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6. FUTURE WORKS

- Study with larger sample size – increase sites throughout Malaysia
- Collect data during night time
- Study the Effectiveness of Automated Enforcement System (AES) in Reducing Red Light Running Violations in Malaysia

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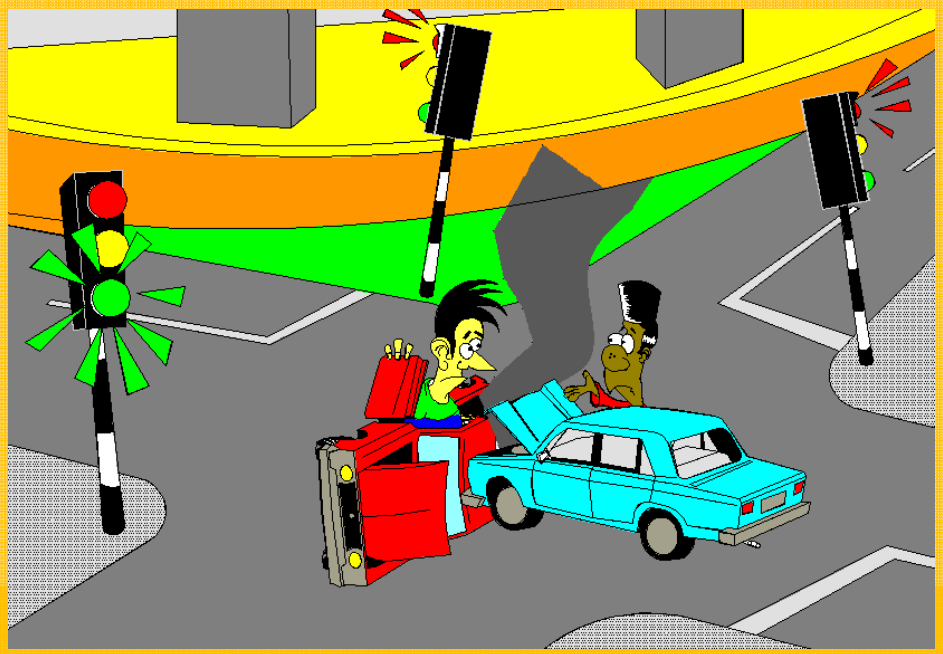
DO NOT BEAT THE RED LIGHT...

You wouldn't want this to happen



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THANK YOU