

Tolled Highways: Review of Public Opinion Surveys

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Abstract

New highways are built so as to reduce traffic congestions especially in Kuala Lumpur and other big cities as well as to shorten the traveling time. The privatization of the construction of highways is implemented based on the “user pay” concept, where motor vehicles are charged a certain toll rate for using the related highway infrastructure and facilities. However, government also ensures that road users who choose not to pay toll can use alternative roads to commute from one place to another. The government has stipulated that seeking the views of the public is a must to the building of new highways. Information collected from the surveys will be used by the government to evaluate the need for the highways. The Department of Statistics, Malaysia has been entrusted to conduct the Public Opinion Surveys on tolled highways.

The main finding of the surveys shows that there are high levels of acceptability among the respondents (70.5 to 97.3 per cent of the respondents) on the construction of the highways. However, majority of them disagreed with the toll charges proposed by the concessionaire. As for the concept of toll payment, more than 88 per cent of the respondents preferred the current practice of paying toll.

Introduction

In Malaysia, road is very important to connect inter city or state especially in Peninsular Malaysia. Now, motor vehicles have become one of the basic facilities for the Malaysian society. Every year more than 700,000 new motor vehicles are registered in this country. According to the Road Transport Department Malaysia, in 2000 about 10.6 million motor vehicles were registered in the whole country and this number has increased to 13.8 million in 2004. On average, motor

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vehicles registered a growth of 6.8 per cent a year from 2000 to 2004. (Department of Statistics, Malaysia 2005). The current road cannot accommodate growth of motor vehicles. The width of the current road must be broaden or new road must be built to reduce congestions. The government invited private companies to participate in the construction of roads through privatization concept.

The construction, standards, management and usages of highways in Malaysia are subjected to Federal Roads Act (Private Management) 1984. In Malaysia, highways are defined as high-speed routes with at least four lanes (two in each direction) and may either be limited access or partial access. Hence, all highways have at least 4 lanes (2 in each direction) separated by a median divider with an emergency lane on both sides. Meanwhile, most highways in Malaysia are limited access highways. The default speed limit for Malaysian highways is 110 km/hour, but in certain areas lower speed limits are applied especially in large urban areas and in dangerous mountain routes. (Malaysian Expressway System, 2006)

There are some advantages of private investment participation in road construction, as follows:

- a. to support the nation's economic growth and to help the government in overcoming infrastructure bottlenecks, especially roads. This is due to the rapid economic growth experienced by Malaysia in the 90s;
- b. to be a catalyst to the development along the corridor that the highway passes through;
- c. to enable the public to enjoy relatively earlier better road facilities compared to if the government are to build these facilities itself through the allocation under the Malaysia Five Year Development Plans; and

- d. for the Klang Valley, privatized highways are aimed at reducing traffic congestion and to smoothen the journey from one city to another.

Background of the surveys

The Department of Statistics, Malaysia (DOSM) has conducted Public Opinion Surveys (POS) of tolled highways since 1999. Prior to 1999, many tolled highways were built but public opinion was not solicited. Regarding the need to seek public opinion, the Cabinet reached upon the decision that DOSM should conduct the surveys prior to the building of highways. One of the prerequisites to the operation of these new highways is that the views of the public have to be sought.

The concessionaire engaged a private research company to conduct the opinion survey whilst the government has entrusted the responsibility of conducting the survey to the DOSM.

The field works of the surveys were carried out by the State Offices of DOSM. Normally, the surveys were conducted within three months. Table 1 shows the POS of tolled highways conducted by the Department since 1999.

Table 1 : POS of tolled highways 1999 - 2003

Tolled Highways	Year
1. Pantai Timur Highway	1999
2. Ipoh Lumut Highway ²	1999
3. Kajang Seremban Highway	2000
4. Sistem Lingkaran Lebuhraya Kajang (SILK)	2000
5. Guthrie Corridor Expressway (GCE)	2000
6. Sistem Penyuraian Trafik KL Barat (SPRINT)	2000
7. Senai-Johor Perdana-Desaru (Senai-Desaru) Highway	2001
8. Kuala Lumpur North East Expressway (KLNEE)	2002
9. Penang Outer Ring Road (PORR)	2002
10. West Coast Expressway	2003
11. Lebuhraya Assam Jawa-Taman Rimba Templer (LATAR)	2003

Source: Department of Statistics, Malaysia, Report on POS of Tolled Highways, various issues.

Objectives

The objectives of the POS of tolled highways were as follows:

- a. to obtain the views and opinions of the public in relation to the construction of the highways as an alternative route for the people who live or work in the vicinity; and

² Ipoh Lumut Highway is still under study.

- b. to study the reaction of the general public on the imposed toll rates.

Information collected from the surveys will be used by the Government to evaluate the needs of the highway so as to ensure a smoother execution in the planning and implementation of the country's development.

Methodology

Scope and coverage

As agreed by the Economic Planning Unit, DOSM had identified the relevant questions for the purpose of the survey. The basic questions had to be incorporated by both DOSM and the consultant of the concessionaire so as to be comparable.

The areas around the highway alignment formed the sampling frame for sample selection. The areas involved were divided into several catchments area depending on the proposed highway route.

The study involved five (5) target groups of respondents, which include the following:

- a. motorists residing in the vicinity of the highways (house-to-house);
- b. commercial users;
- c. motorists from outside the vicinity but uses the highways (central location testing);
- d. land owners (If the list of land owners are provided); and
- e. associations.

Sampling frame

The sampling frame used for the motorists group living in the vicinity of the proposed highway was based on the

Enumeration Blocks (EB) maintained by DOSM. The EBs created geographical areas comprising of 80-120 living quarters. Each of these EBs was clearly defined with identifiable boundaries. The sampling frame for the areas involved was divided into several housing estates where living quarters were selected for interviews. All of the housing estates in the district within the proposed highway were covered.

For the commercial users, the establishment frame in six (6) economic sectors namely; manufacturing, construction, wholesale and retail, transportation (bus, taxi and lorry), travel agent and hotel were used.

The coverage depends on the industries within the area. The sample selections for the other target groups were purposive in nature and thus, did not use a sampling frame. As for the Central Location Testing (CLT) target groups, samples were selected in the shopping complexes, bus or train stations, airport and resorts/hotels in the vicinity of the proposed highways.

Sampling design

Two approaches were considered for the sample selection for the different target groups namely probability sampling and quota sampling. The probability sampling was used for the motorists (house-to-house) and commercial users while for the other target groups, the quota sampling approach was used.

For the motorists who live in the vicinity of the housing estates selected, the design used was a “two-stage stratified sampling approach” whereby a sample of EBs was selected in the housing estate identified at the first stage. In the second stage, a sample of living quarters was selected using the systematic random sampling approach. The head of the household or the respondent who is more than 18 years old in the selected living quarters was interviewed.

Respondents selected for the commercial areas were the managers or officers in charge. Respondents from the CLT were those who do not live in the vicinity of the highway but came to the area for the purpose of shopping and the like. These people were interviewed at the shopping complexes. On the other hand, the presidents of the respective associations were selected as the respondents. The respective associations included the Resident Associations, Federation of Malaysian Manufactures (FMM), Transport Associations and other associations in that particular area. Respondents in the land owners' category were those who have land or property between a radius of two kilometers from the proposed highways.

Sample size

The sample size and response rates for the surveys are as shown in Table 2. Sample size for tolled highway surveys depend on the population of the area, commercial areas, road length and the respective landowners.

Table 2 : Total sample size and response rates for toll survey

	Tolled Highways	Sample ³ size	No. of respondent	Response rate (%)
1.	Pantai Timur Highway	1682	1652	98.2
2.	Ipoh Lumut Highway	1675	1351	80.7
3.	Kajang Seremban Highway	2358	2058	87.3
4.	Sistem Lingkaran Lebuhraya Kajang (SILK)	358	343	95.8
5.	Guthrie Corridor Expressway (GCE)	327	327	100.0
6.	Sistem Penyuraian Trafik KL Barat (SPRINT)	675	674	99.9
7.	Senai-Johor Perdana-Desaru (Senai-Desaru) Highway	1530	1527	99.8
8.	Kuala Lumpur North East Expressway (KLNEE)	1806	1765	97.7
9.	Penang Outer Ring Road (PORR)	1634	1634	100.0
10.	West Coast Expressway	1811	1811	100.0
11.	Lebuhraya Assam Jawa-Taman Rimba Templer (LATAR)	1111	1111	100.0

Source: Department of Statistics, Malaysia, Report on POS of Tolled Highways, various issues.

³ There are five target groups included in these studies: Motorist (house to house), Motorist (CLT), Commercial Users, Resident Associations and Land Owners.

Features of tolled highways

Tolled Highways link states and cities, such as Pantai Timur Highway which crosses two states, namely Pahang and Terengganu and West Coast Expressway which crosses Perak and Selangor. Ipoh Lumut Highway and SILK Highway for example link intra cities in Perak and Selangor respectively.

The longest highway is Pantai Timur Highway which is 338 km and the shortest is KLNEE which is 18.4 km. The number of toll plazas depends on the length of the roads and interchanges. Pantai Timur Highways has the highest number of toll plazas. Nevertheless, the West Coast Expressway has the highest number of interchange.

The following table shows the link, road length, number of toll plazas and interchanges of each highway:

Table 3 : Features of the tolled highways

	Tolled Highways	Link	Road Length (km)	Number of toll plaza	Number of Interchange
1.	Pantai Timur Highway	Karak–Kuantan-Kuala Terengganu	338.0	16	16
2.	Ipoh Lumut Highway	Ipoh-Lumut	70.0	5	9
3.	Kajang Seremban Highway	Kajang-Seremban	50.0	6	8
4.	Sistem Lingkaran Lebuhraya Kajang (SILK)	Balakong-Sg. Long-Semenyih-Bangi-Serdang	37.0	4	12
5.	Guthrie Corridor Expressway (GCE)	Shah Alam-Kuang	25.0	3	9

	Tolled Highways	Link	Road Length (km)	Number of toll plaza	Number of Interchange
6.	Sistem Penyuraian Trafik KL Barat (SPRINT)	Kerinci- Damansara- Penchala	26.0	3	3
7.	Senai-Johor Perdana- Desaru (Senai- Desaru) Highway	Senai-Skudai- Bandar Penawar	83.4	7	7
8.	Kuala Lumpur North East Expressway (KLNEE)	Jalan Duta-Jalan Ulu Kelang-Karak	18.4	5	6
9.	Penang Outer Ring Road (PORR)	Bandar Bayan Baru-Bandar Tanjung Bungah- Georgetown	19.0	4	9
10.	West Coast Expressway	Taiping-Banting- Sabak Bernam- Tanjung Karang	197.7	15	17
11.	Lebuhraya Assam Jawa- Taman Rimba Templer (LATAR)	Assam Jawa- Kuang-Taman Rimba Templer	32.0	3	5

Source: Department of Statistics, Malaysia, Report on POS of Tolled Highways, various issues.

Most of the highways as listed above have two lanes (in each direction) with the exception of SILK, GCE and SPRINT highways that have three lanes. SPRINT highway has one 700-metre long tunnel whilst Senai-Desaru highway has one four (4) km bridge 'cable stayed'.

Findings

Respondents' profile

The ethnic composition of the respondents is shown in Table 4 and it is reflective of the ethnic composition of the proposed highways. Most of the proposed highway routes were largely Malay areas compared to only two which comprise of Chinese ethnic group.

Table 4: Percentage distribution of ethnic group by highways

Tolled Highways		Ethnic group (%)			
		Malay	Chinese	Indian	Others
1.	Pantai Timur Highway	81.1	15.9	2.6	0.45
2.	Ipoh Lumut Highway	57.9	30.9	10.8	0.42
3.	Kajang Seremban Highway	53.4	33.7	11.7	1.2
4.	Sistem Lingkaran Lebuhraya Kajang (SILK)	31.5	57.6	10.9	0.1
5.	Guthrie Corridor Expressway (GCE)	51.4	25.7	20.8	2.1
6.	Sistem Penyuraian Trafik KL Barat (SPRINT)	45.4	38.8	13.0	2.8
7.	Senai-Johor Perdana-Desaru (Senai-Desaru) Highway	48.5	40.0	11.0	0.5
8.	Kuala Lumpur North East Expressway (KLNEE)	52.4	34.8	11.8	1.0
9.	Penang Outer Ring Road (PORR)	26.7	62.2	10.0	1.1
10.	West Coast Expressway	69.7	12.9	15.9	1.5
11.	Lebuhraya Assam Jawa-Taman Rimba Templer (LATAR)	50.5	26.9	21.8	0.8

Source: Department of Statistics, Malaysia, Report on POS of Tolled Highways, various issues.

Awareness of the tolled highway

The level of awareness of the respondents about the highway can be measured from the exposure to publicity pertaining to the construction of the proposed highway, its features as well as the sources of information. Table 5 shows awareness of the respondents on the construction of the highways.

More than 50 per cent of the respondents were aware of the construction of SPRINT, Pantai Timur, Senai Desaru and Ipoh Lumut highways. As for the remaining highways, most of the respondents were not aware of the projects.

Table 5: Percentage distribution of respondents' awareness

	Tolled Highways	Awareness of respondents (%)	
		Yes	No
1.	Pantai Timur Highway	70.0	30.0
2.	Ipoh Lumut Highway	55.0	45.0
3.	Kajang Seremban Highway	49.0	51.0
4.	Sistem Lingkaran Lebuhraya Kajang (SILK)	44.9	55.1
5.	Guthrie Corridor Expressway (GCE)	34.2	65.8
6.	Sistem Penyuraian Trafik KL Barat (SPRINT)	73.6	26.4
7.	Senai-Johor Perdana-Desaru (Senai-Desaru) Highway	55.6	44.4
8.	Kuala Lumpur North East Expressway (KLNEE)	21.5	78.5
9.	Penang Outer Ring Road (PORR)	44.1	55.9
10.	West Coast Expressway	45.5	54.5
11.	Lebuhraya Assam Jawa-Taman Rimba Templer (LATAR)	37.0	63.0

Source: Department of Statistics, Malaysia, Report on POS of Tolled Highways, various issues.

Table 6 details the source of the information on the construction of the highways. Most of the respondents got the information from friends/family/relatives (28.9 to 67.5 per cent) with the exception of SILK Highway and PORR Highways where most of the respondents obtained the information from the newspapers.

Table 6 : Source of information on the construction of highways

Tolled Highways		Source of information (%)				
		News paper	Radio/ TV	Magazine/ flyer	Friend/ family/ relatives	Others
1.	Pantai Timur Highway	29.1	25.2	6.0	34.0	7.0
2.	Ipoh Lumut Highway	23.6	22.4	4.5	44.9	4.5
3.	Kajang Seremban Highway	24.1	7.6	3.5	49.5	15.3
4.	Sistem Lingkaran Lebuhraya Kajang (SILK)	39.2	13.8	17.1	21.4	9.5
5.	Guthrie Corridor Expressway (GCE)	9.6	14.5	1.4	57.7	16.9
6.	Sistem Penyuraian Trafik KL Barat (SPRINT)	28.0	21.7	13.4	28.9	8.0
7.	Senai-Johor Perdana-Desaru (Senai-Desaru) Highway	10.5	1.9	16.2	66.9	4.5
8.	Kuala Lumpur North East Expressway (KLNEE)	33.9	16.3	12.1	34.4	3.3
9.	Penang Outer Ring Road (PORR)	52.1	5.7	4.2	36.5	1.5
10.	West Coast Expressway	11.4	10.6	6.5	67.5	4.0
11.	Lebuhraya Assam Jawa-Taman Rimba Templer (LATAR)	6.9	4.8	16.7	62.7	8.9

Source: Department of Statistics, Malaysia, Report on POS of Tolled Highways, various issues.

Views on the construction of the highway

The viewpoints on the construction of the highways with respect to the agreement on the construction are highlighted in this section. It can be seen from Table 7 that most of the respondents agreed on the construction of the eight highways. The Senai-Johor Perdana-Desaru (Senai-Desaru) Highway has the highest acceptance of 97.3 per cent. For KLNEE, at least 70.5 per cent of respondents agreed to the building of the highway.

The information on the agreement for the construction of the highways for three earlier POS of tolled highways was not collected (Table 7).

Table 7 : Agreement to the construction of highways

Tolled Highways		Agree to the construction of highway (%)		
		Yes	No	Neutral
1.	Pantai Timur Highway	Information not collected		
2.	Ipoh Lumut Highway	Information not collected		
3.	Kajang Seremban Highway	Information not collected		
4.	Sistem Lingkaran Lebuhraya Kajang (SILK)	93.0	7.0	-
5.	Guthrie Corridor Expressway (GCE)	76.7	23.3	-
6.	Sistem Penyuraian Trafik KL Barat (SPRINT)	84.0	16.0	-
7.	Senai-Johor Perdana-Desaru (Senai-Desaru) Highway	97.3	2.7	-
8.	Kuala Lumpur North East Expressway (KLNEE)	70.5	13.8	15.6
9.	Penang Outer Ring Road (PORR)	78.8	13.3	7.8
10.	West Coast Expressway	85.4	7.2	7.4
11.	Lebuhraya Assam Jawa-Taman Rimba Templer (LATAR)	87.5	3.7	8.8

Source: Department of Statistics, Malaysia, Report on POS of Tolled Highways, various issues.

Views on toll rates

This section analyses the findings on the views of the respondents on the proposed toll rates. Respondents were also asked on their views regarding the mode of paying toll and the reasonable rate to charge. Several options were presented to the respondents on the mode of toll payment. They were as follows:-

- a. toll charges to be included in road tax;
- b. toll charges to be included in petrol prices;
- c. toll charges to be included in road tax and petrol prices; and
- d. toll charges as currently practiced.

In this aspect, most respondents (88.5 to 98.8 per cent) preferred that the current practice be maintained, that is, 'pay when you use' instead of absorbing the costs into other taxes (see Table 8). However, 7.8 per cent respondents of the SPRINT Highway preferred toll charges to be included in the road tax.

Table 8 : Mode of toll payment

					(%)
	Tolled Highway	Toll charges in road tax	Toll charges included in petrol prices	Toll charge included in road tax and petrol prices	Toll charges as currently practiced
1.	Sistem Penyuraian Trafik KL Barat (SPRINT)	7.8	1.9	1.8	88.5
2.	Senai-Johor Perdana-Desaru (Senai-Desaru) Highway	2.4	1.3	0.8	95.5

					(%)
	Tolled Highway	Toll charges in road tax	Toll charges included in petrol prices	Toll charge included in road tax and petrol prices	Toll charges as currently practiced
3.	Kuala Lumpur North East Expressway (KLNEE)	4.0	1.1	1.0	93.9
4.	Penang Outer Ring Road (PORR)	1.0	0.1	0.1	98.8
5.	West Coast Expressway	1.8	1.1	0.5	96.6
6.	Lebuhraya Assam Jawa-Taman Rimba Templer (LATAR)	0.6	0.2	1.1	98.1

Source: Department of Statistics, Malaysia, Report on POS of Tolled Highways, various issues.

For the SILK and GCE Highways, the respondents were asked on their preference on the mode of payment (Table 9).

Table 9 : Mode of toll payment

		(%)						
	Tolled Highways	Same as tax, toll rate is fix	Highest all the time	Lower for the first year and increase every 5 year	Lowest but increase road tax	Lowest but increase petrol prices	No toll but increase road tax	No toll but increase petrol prices
1.	Sistem Lingkaran Lebuhraya Kajang (SILK)	47.0	2.3	30.8	8.7	2.1	8.2	0.9
2.	Guthrie Corridor Expressway (GCE)	49.6	8.6	23.4	12.4	0.6	3.8	1.6

Source: Department of Statistics, Malaysia, Report on POS of Tolled Highways, various issues.

Most of the respondents for SILK (47.0%) and GCE (49.6%) opted for fixed toll rates.

On what they thought as an appropriate price to pay, the response of those who agreed and disagreed with the proposed rates differ for each highway.

Finally, when the respondents were shown the proposed toll rates, more than 54 per cent did not agree with the rates proposed by the concessionaires except for Kajang-Seremban and LATAR Highway. For Kajang-Seremban Highway, most of the respondents (58.0 per cent) agreed with the toll rates. However, 92.7 per cent of the respondents of SILK Highways disagreed with the toll rates. Table 10 presents the findings on agreement of toll rates.

Table 10 : Agreement on proposed toll rates

	Tolled Highways	Percentage of agreement for each highway		
		Agree	Disagree	Don't know/ Neutral
1.	Pantai Timur Highway	29.0	54.0	17.0
2.	Ipoh Lumut Highway	34.0	38.0	28.0
3.	Kajang Seremban Highway	58.0	25.3	16.7
4.	Sistem Lingkaran Lebuhraya Kajang (SILK)	5.7	92.7	1.6
5.	Guthrie Corridor Expressway (GCE)	16.4	67.6	16.0
6.	Sistem Penyuraian Trafik KL Barat (SPRINT)	10.0	86.9	3.1
7.	Senai-Johor Perdana-Desaru (Senai-Desaru) Highway	27.0	66.8	6.2
8.	Kuala Lumpur North East Expressway (KLNEE)	15.7	74.8	9.5
9.	Penang Outer Ring Road (PORR)	19.5	78.0	2.4
10.	West Coast Expressway	27.2	60.9	11.9
11.	Lebuhraya Assam Jawa-Taman Rimba Templer (LATAR)	51.8	37.8	10.4

Source: Department of Statistics, Malaysia, Report on POS of Tolled Highways, various issues.

Conclusion

The findings of POS of tolled highways showed that most of the respondents were not aware of the construction of the highways. Hence, there is a need for the government to inform the public of the rationale for the construction of the highways.

Most of the respondents also did not agree with the toll rate proposed by the concessionaires except for Kajang-Seremban and LATAR Highway. From the findings, the Economic Planning Unit evaluated the suitability of constructing the highways and recalculated the toll rates based on the opinions and suggestions from the respondents.

On the other hand, the methodology of the surveys could be enhanced if each target group has its own sampling frame. However, it is difficult since the target groups such as motorists and landowners are not covered in any specific frame. Although there are some limitations, the Department believes that the information from the surveys could be used and is sufficient to facilitate the government.

Generally, the findings indicates most respondents agreed to the construction of the highways. The government realized that the public emphasizes on the convenience of using highways compared to the toll rate.

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