

# Evolution of the transportation sector in Malaysia

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## Abstract

In this modern era, transportation system is a mechanism which plays as an efficient tool for serve economy of the country. Transportation systems is consisting four types of transport which is land, railway, water and air transport. In the year 1903, Malaysia unveiled its transportation system by land as a gateway to the development of socio economy. The primary transportation was enforced to interact with the involving larger cities in the rubber and tin mines. Now, with the evolution of transportation system, we could see transportation system in Malaysia much expand in railway system which steam train evolved to electric train (KTMB). Furthermore, now Malaysian government working with the Singapore government with East Cost Railway Link (ECRL) mega project where can connect both countries by land and the project expected to be completed in the year 2027. As we talk about Malaysia Gross Domestic Product (GDP) 2021, the main contributor is a services sector which contributed about 57.0 per cent. As we zoomed into services sector, the transportation sub-sector is the third largest contributor for Malaysia GDP. The transportation sub-sector amounted RM42.7 million (3.1%) to the services sector. Therefore, this paper aims to analyse the growth, progress, and the evolution of transportation system for the past and upcoming 10 years' time.

## Introduction

As the potter able to finds an unique usable vessels from clay, our Malaysia's transport system is capable to be evolutes as a sustainable network for use of many. In the line of statement, Malaysia's government is working hard to develop the transportation system for make it as a flexible interaction between urban areas and people for their daily moves, i.e ECRL project. Malaysia's transport system has various modes of travel – land, railway, air and water. Each mode is efficient, convenient and affordable. The road acts as a bridge to reach from one end to another end. Peninsular Malaysia has one of the best road system in Asia. A network of trunk roads links to towns, villages and to many recreation areas and also connect to our border countries like Thailand and Singapore via road systems. It clearly shown that our Malaysia's road system directly bolsters for economic activity thorough business and tourism. Today, rail transport is one of the country's most important transport mode. Rail transport in Malaysia comprises heavy rail (including commuter rail), light rapid transit (LRT), monorail, airport rail link and a funicular railway line. **The direction of travel for railway development in Malaysia is now focusing on connecting to neighbouring countries.** For example, Malaysia's government is now works to connect with Singapore through railway by ECRL and it's expected to be completed in the year 2027. Railway systems

have contributed towards helping more people use public transport. When many shifted to public transport, it's capable of moving a large number of passengers using lesser resources such as fuel, land and environmental costs.

The air transport of Malaysia plays a vital role in boosting the nation's economy by connect the nation to the business, commercial and tourism bridge globally. There are various airline which ruling the air transport of Malaysia such as Malaysia Airlines, AirAsia, Firefly and so on. In the year 1937, the Malaysia Airlines commenced initially as a national airline, AirAsia made a revolutionary in the air transport with introducing cheaper airline ticket to it's passengers and Firefly commenced in the year 2007 to fill in the gap which available in aviation industry. Malaysia consists of 6 international, 16 domestic airports and 18 STOL ports for the convenient travel by air. The air transport can be light up by new solutions of post-pandemic and sustains ever strong since it demands for air transportation has increased tremendously.

The revival of marine trade came with the establishment of the British rule in the 18<sup>th</sup> century, with the ports of Melaka, Singapore, and Penang being declared as global commercial outposts. Seaport in Malaysia are not merely places for ships to offload or pick-up cargo. They are independent entities, connecting the all modes of transport for seamless trading, equipped with all the requisite amenities for seafarers. The progression from a universal port to a niche port, catering to an exclusive dimension of sea trade, has further spurred the adoption of advanced technology to ensure that all requirements are adequately met. This has driven Malaysia's rise as a global maritime power to a great extent. We can come out with a says that transportation system have a pervasive and extensive effects on the economic and social systems that they serve.

## **Evaluation Perspective**

Transportation system should be evaluated or measured frequently for efficient, cost effective and meets the expectations of the society. Transportation system can be evaluated in various ways such as land, air, water transports that reflect different perspectives concerning users, modes, land use, transport problems and solutions, how transport activity is measured, and the type of performance indicators used. Here, we are going to measure the performance of each transportation sector by the indicators used below.

**Table 1: NO OF PASSENGERS USED AIR TRANSPORT**

<b>NO OF PASSENGERS / YEAR</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>PENINSULAR MALAYSIA</b>	<b>67,070,797</b>	<b>71,729,978</b>	<b>78,736,335</b>	<b>79,909,262</b>	<b>84,695,891</b>	<b>19,431,904</b>	<b>7,087,482</b>
<b>SABAH</b>	<b>9,399,438</b>	<b>10115081</b>	<b>10,945,496</b>	<b>11,890,985</b>	<b>13,212,187</b>	<b>3,566,393</b>	<b>1,970,499</b>
<b>SARAWAK</b>	<b>9,477,944</b>	<b>9611475</b>	<b>9,841,959</b>	<b>10,632,864</b>	<b>11,520,244</b>	<b>3,787,790</b>	<b>1,960,957</b>
<b>TOTAL</b>	<b>85,948,179</b>	<b>91456534</b>	<b>99,523,790</b>	<b>102,433,111</b>	<b>109,428,322</b>	<b>26,786,087</b>	<b>11,018,938</b>

**Table 1.1: NO OF PASSENGERS USED AIR TRANSPORT (Annual Growth%)**

<b>NO OF PASSENGERS / YEAR</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>PENINSULAR MALAYSIA</b>		6.95%	9.77%	1.49%	5.99%	-77.06%	-63.53%
<b>SABAH</b>		7.61%	8.21%	8.64%	11.11%	-73.01%	-44.75%
<b>SARAWAK</b>		1.41%	2.40%	8.04%	8.35%	-67.12%	-48.23%
<b>TOTAL</b>		6.41%	8.82%	2.92%	6.83%	-75.52%	-58.86%

Table 1 shows data series for number of passengers used air transport in Malaysia from 2015 to 2021. In year 2015, the total number of passengers used air transport is 85,948,179. From this table, we can see the the drastic increase in numbers of passengers who used air transport. But in the year 2020, there is slips in the no of passengers due to pandemic which hits the whole world. The Malaysia border was closed on 18<sup>th</sup> March 2020 and only individuals who has necessary matters can travel by international. For example, people who can travel are those doing business or has some medical reasons.

**Table 2: AIRCRAFT MOVEMENTS**

<b>AIRCRAFT MOVEMENTS / YEAR</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>PENINSULAR MALAYSIA</b>	<b>602,283</b>	<b>603,838</b>	<b>651,092</b>	<b>648,680</b>	<b>677,564</b>	<b>239,695</b>	<b>145,646</b>
<b>SABAH</b>	<b>107,867</b>	<b>106,786</b>	<b>107,270</b>	<b>116,583</b>	<b>125,295</b>	<b>49,559</b>	<b>34,524</b>
<b>SARAWAK</b>	<b>147,288</b>	<b>143,517</b>	<b>136,247</b>	<b>150,721</b>	<b>148,897</b>	<b>81,014</b>	<b>64,066</b>
<b>TOTAL</b>	<b>857,438</b>	<b>854,141</b>	<b>894,609</b>	<b>915,984</b>	<b>951,756</b>	<b>370,268</b>	<b>244,236</b>

**Table 2.0: AIRCRAFT MOVEMENTS (Annual Growth%)**

<b>AIRCRAFT MOVEMENTS / YEAR</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>PENINSULAR MALAYSIA</b>		0.26%	7.83%	-0.37%	4.45%	-64.62%	-39.24%
<b>SABAH</b>		-1.00%	0.45%	8.68%	7.47%	-60.45%	-30.34%
<b>SARAWAK</b>		-2.56%	-5.07%	10.62%	-1.21%	-45.59%	-20.92%
<b>TOTAL</b>		-0.38%	4.74%	2.39%	3.91%	-61.10%	-34.04%

As the number of passengers increased, also the aircraft movement will increase by same manner since it's work together. Today's time, many people love to travel both international and domestic for many reasons such vacation, business, international treatments etc. In line with this, many airlines signs memorandum of understanding with airbus companies for buy new airbuses for meet customers' needs. This clearly shows that air transport will blooms in near future but we cannot avoid some unforeseen circumstances which can cause the airline business to down such as global threat like pandemic covid-19. We can see the downtrend in aircraft movements in the year 2020 as the result from closure of border due to covid-19.

**Table 3: NUMBER OF PASSENGERS BY CLASSES (RAIL TRANSPORT)**

<b>NUMBER OF PASSENGERS BY CLASSES / YEAR</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>FIRST CLASS</b>	<b>134,600</b>	<b>17,800</b>	<b>0</b>	<b>3,000</b>	<b>5,700</b>	<b>2,700</b>	<b>1,700</b>
<b>SECOND CLASS</b>	<b>1,943,500</b>	<b>2,498,700</b>	<b>2,851,500</b>	<b>3,254,000</b>	<b>3,476,400</b>	<b>811,700</b>	<b>95,700</b>
<b>THIRD CLASS</b>	<b>977,900</b>	<b>275,200</b>	<b>240,800</b>	<b>270,300</b>	<b>264,300</b>	<b>125,800</b>	<b>206,600</b>
<b>TOTAL</b>	<b>3,056,000</b>	<b>2,791,700</b>	<b>3,092,300</b>	<b>3,527,200</b>	<b>3,746,401</b>	<b>1,041,000</b>	<b>303,999</b>

Table 3 shows the number of passengers by classes and the first class shows least number of passengers. It's may the cost of first class is expensive and people afford to travel in second and third classes. Rail transport too was affected due to covid-19 that's can see the slips in number of passengers in the year 2020 and 2021.

**Table 3.1: NUMBER OF PASSENGERS BY CLASSES (RAIL TRANSPORT) (Annual Growth%)**

<b>NUMBER OF PASSENGERS BY CLASSES / YEAR</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>FIRST CLASS</b>		-86.78%	-100.00%		90.00%	-52.63%	-37.04%
<b>SECOND CLASS</b>		28.57%	14.12%	14.12%	6.83%	-76.65%	-88.21%
<b>THIRD CLASS</b>		-71.86%	-12.50%	12.25%	-2.22%	-52.40%	64.23%
<b>TOTAL</b>		-8.65%	10.77%	14.06%	6.21%	-72.21%	-70.80%

The annual growth rate for number of passengers by classes shows positive signs from the year 2017 to 2019. This is because many people like to travel neighbouring countries by train. But in year 2020 it's shows least numbers since pandemic covid-19.

**Table 4: NUMBER OF PASSENGERS BY TYPE OF RAIL TRANSPORT SERVICES**

<b>TYPES OF SERVICES / YEAR</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>LRT AMPANG LINE</b>	<b>62,809,412</b>	<b>59,192,907</b>	<b>59,462,032</b>	<b>60,960,445</b>	<b>65,147,222</b>	<b>34,715,565</b>	<b>21,938,973</b>
<b>LRT KELANA JAYA LINE</b>	<b>82,144,674</b>	<b>79,002,829</b>	<b>83,585,412</b>	<b>87,216,597</b>	<b>94,657,974</b>	<b>45,307,182</b>	<b>25,123,614</b>
<b>KL MONORAIL</b>	<b>25,067,867</b>	<b>21,990,242</b>	<b>16,841,630</b>	<b>12,594,377</b>	<b>12,535,738</b>	<b>7,143,534</b>	<b>4,226,329</b>
<b>MRT SBK LINE</b>	<b>0</b>	<b>0</b>	<b>22,350,508</b>	<b>51,314,240</b>	<b>63,952,805</b>	<b>33,168,335</b>	<b>19,573,010</b>
<b>KLIA EXPRESS</b>	<b>3,470,710</b>	<b>2,419,964</b>	<b>2,275,650</b>	<b>2,212,393</b>	<b>2,156,319</b>	<b>388,949</b>	<b>53,434</b>
<b>KLIA TRANSIT</b>	<b>7,559,347</b>	<b>6,485,520</b>	<b>6,443,667</b>	<b>6,541,505</b>	<b>6,788,121</b>	<b>2,189,136</b>	<b>724,997</b>
<b>TOTAL</b>	<b>181,054,025</b>	<b>169,093,478</b>	<b>190,960,916</b>	<b>220,839,557</b>	<b>245,238,179</b>	<b>122,912,701</b>	<b>71,640,357</b>

Table 4 shows number of passengers by type of rail transport services from year 2015 to 2021. The first 5 years shows brighter in numbers since Malaysians depends on public transport like railway for their daily routines. Malaysians who stays in klang valley mostly travel by railway for their works. In the year 2020, there is slight slips in the number of passengers because of movement control order due to covid-19 but people still travel since government allows some organizations to run their businesses.

**Table 4.1: NUMBER OF PASSENGERS BY TYPE OF RAIL TRANSPORT SERVICES (Annual Growth%)**

<b>TYPES OF SERVICES / YEAR</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>LRT AMPANG LINE</b>		-5.76%	0.45%	2.52%	6.87%	-46.71%	-36.80%
<b>LRT KELANA JAYA LINE</b>		-3.82%	5.80%	4.34%	8.53%	-52.14%	-44.55%
<b>KL MONORAIL</b>		-12.28%	-23.41%	-25.22%	-0.47%	-43.01%	-40.84%
<b>MRT SBK LINE</b>				129.59%	24.63%	-48.14%	-40.99%
<b>KLIA EXPRESS</b>		-30.27%	-5.96%	-2.78%	-2.53%	-81.96%	-86.26%
<b>KLIA TRANSIT</b>		-14.21%	-0.65%	1.52%	3.77%	-67.75%	-66.88%
<b>TOTAL</b>		-6.61%	12.93%	15.65%	11.05%	-49.88%	-41.71%

The annual growth rate for number of passengers by type of rail transport services shows good signs but it's slips in the year 2020 and 2021 due to pandemic covid-19.



**Table 5: TOTAL NUMBER OF SHIPS CALLING BY PORTS**

<b>PORTS / YEAR</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>WEST MALAYSIA</b>	38,188	35,590	35,034	33,047	32,941	29,303	25,725
<b>SABAH</b>	13,769	11,242	9,914	9,224	8,686	7,239	7,323
<b>SARAWAK</b>	15,382	10,755	10,736	13,483	16,192	13,249	14,464
<b>TOTAL</b>	66,761	57,587	57,587	55,754	57,819	49,791	47,512

Table 5 shows total number of ships calling by ports by years and it's plays a vital role in exports and imports of goods. We can finds that no any greater slips rather any situations and it's continues operates whether in hot or cold. But it's a small drops in number in the year 2020 because some restrictions taken due to covid-19.

**Table 5.1: TOTAL NUMBER OF SHIPS CALLING BY PORTS (Annual Growth%)**

<b>PORTS / YEAR</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>WEST MALAYSIA</b>		-6.80%	-1.56%	-5.67%	-0.32%	-11.04%	-12.21%
<b>SABAH</b>		-18.35%	-11.81%	-6.96%	-5.83%	-16.66%	1.16%
<b>SARAWAK</b>		-30.08%	-0.18%	25.59%	20.09%	-18.18%	9.17%
<b>TOTAL</b>		-13.74%	0.00%	-3.18%	3.70%	-13.88%	-4.58%

The growth rate shows some negative signs and believes that need some improvement in this marine transport. We can't expel the reasons why there is slips from the year 2016-2019 but it's need some concentration to be better in near time.

As the indicators shown above, our Malaysia's transport system is evaluating and progressing even we faced some slips in term of number of passengers or number of aircrafts in the year 2016, 2020 and 2021. The reasons behind the drastic drops in the year 2016 is the global go through the financial crisis by the way in the year 2020, the world hits by pandemic Covid-19. Because of this two waves, Malaysia transport system was affected but it's has a capacity to flourish back for contribute to Malaysia's economy.

## Conclusion

We able to conclude this paper with the support of indicators by the transport modes of railway, air and water. It's clearly shown that Malaysia's transport system is progressing to the tremendous and deliver its benefits for usage of many. For this paper, it's easy to measure air transport because it's very systematic and manageable. The water transport sector were able to manage by numbers of ships handled by ports. At the same time, the road transport quite difficult to measure by statistics due to the number of usage is great. We believe our transport system provides mobility and accessibility according the needs of people. Furthermore, we already saw the development in transport of water of Malaysia as the Selangor government is engaging to develop the port at Pulau Carey, Banting. The development which we see in transport mode of water it's just a beginning towards a milestone. The transportation has been considered as ine of the key bolsters for economic activity in modern societies. (Rodrigue, Comtois & Slack, 2017)

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