

Q&A Session

Transport Research in Malaysia: Gaps and Paving the Future (Version after talk)

Q1

Transport sustainability today and Future Need

We need to make sure that a balance is found between the impact of transport as a reason for development and progress and transport as a source of problems and issues. We require a delicate balance to find the equilibrium. A clear motivation is that public transport must have a larger share in all urban areas of the country, as well as for inter-city travel. Our roads have limited capacity, and the roads are becoming too costly to maintain and upkeep. So to reduce that burden, public transport must play a better role.

We need to look into the seamlessness of our population's mobility with and without private transport usage. With rail links being developed in the nation, this is good time for a full network plan (last mile as well) to be done. Rail will help the progress of public transport, and with good connectivity and seamlessness, perhaps we can start seeing Malaysians all over the country (not only Klang Valley), will use public transport more. But a plan for this must be made, and I hope this will be made clear by the relevant authorities.

Q2

Yes, my question: How Active Transport will be implemented effectively considering their needs and safety aspects as well.

I presume Active Transport means non motorized transport, where you have to exert human energy to make it mobile. First, I would categorize the purpose of the use: leisure or for commuting. For both, the user must know and respect the traffic rules as the transport will be used on the roads. Local authority than has a role to play. Do you encourage them?. If so, I feel the user needs to be protected as they add to the vulnerable road user group on the road. Dedicated lanes can be provided but they can be challenging and costly.

For commuting trips, we need to respect the hierarchy. I still feel for commuting, public transport should be given priority. The active transport vehicles can be used for the last mile option. Again local authority has a part to play by providing adequate park and ride facilities

Q3

How to extend access to public transportation including e-hailing services to the rural population?

It has always been about market forces. Do we have enough passengers in rural areas or semi urban areas for e hailing services to survive.

Do we understand the demand behaviour for e hailing?. Are they different from locality to locality. Do they cater for long distance or short local trips?.

E hailing is a relatively new phenomenon, but we have not really understood their demand behaviour. We need to know more so we can guide the possibilities of having e hailing service everywhere. It can also be part of community service (partially subsidised) in area of low demand. If we want everyone to have access to mobility, we need to find a way.

Q4

Your recommendations for Malaysia

Wow this will be long. I will cover some aspects in my talk. But I would start with good governance first. An effective planning agency and authority will be critical. Answer to Q1 can partially answer this question too.

Q5

how to promote cycling as 1) #UTILITY-Cycling 2) #COMMUTING-Cycling 3) #TakAdaLesenKayuhBagus

Same answer as Q2

Q6

1. How do we encourage the Malaysian government and the Malaysian public to pay more attention to the importance of research and local public transport initiatives and less attention to megaprojects and big infrastructure which aren't always the best investments?

The importance of research will be answered in this talk (researchers need to do relevant research with impactful results first).

The importance of local public transport initiatives and less attention to megaprojects. Yes I agree. We have to look at the aspired outcomes. While we appreciate megaprojects have its benefit, we need to put priority to inclusivity. Providing access to mobility requires inclusivity. So we need to ensure every citizen and every locality has some means of mobility other than using their own private transport (which is motorcycle predominantly for semi-urban and rural areas). There are many ways to do this, mass transport or semi-mass transport. The return of investment will be almost immediate and it will definitely help us achieve many SDGs.

2. How can Malaysia be encouraged to embrace active micromobility options for local transportation?

Same answer as Q2

3. Malaysian authorities have tried many different approaches to planning, managing and organizing public transport services. Looking at different examples...government ownership like Rapid, Panorama Melaka, CityLiner and Nadi Putra, contracting like MyBas, Bas Iskandar Malaysia and Nadi Putra, or private ownership (SJ Bas, Selangor Omnibus)...which can we say works best

Localising them is much better to me. You can scale, plan and execute based on the local needs. Need to understand the local behaviour and then come up with a plan (business and operation) that will be suitable to the local market situation and demand needs. The scale will be correct. It can be centrally governed in terms of licensing and others, but locally empowered.

Q7

Will the public transportation system improve if it's decentralised from federal government back to local government?

Same answer as Q6.3

Q8

What is the future of High Speed Rail project?

This is a very topical item now. I will always go the the problem statement, and why we initiated the proposal. With that intent, we then came up with the justification. Justification to me must be based on mobility needs and opportunities first, then followed by spur off benefits like land use development and economic growth. They go hand in hand anyway usually. But the financial model is very critical. How much can we compromise on the mobility needs and specifications within the limits of the financial plan and constraints. So if the HSR project can still meet the original expectations, we can try to rescue it. But in this case, the overbearing reason (as I remembered when we debated this in SPAD many years ago), was about providing alternative to travel between KL and Singapore. The other stops are bonuses along the way. Without Singapore, the whole project will have a different perspective. I guess we can scale down the project and reintroduce a new problem statement. However, do we need a high speed rail?, or is the ETS-based service sufficient?. Don't get me wrong. I am an avid proponent of rail, but to justify HSR as its original plan can be very challenging. I will delay it and work on other rail form, especially by showing that demand for rail in the corridor will grow, which will then justify HSR in the future, and having Singapore back in the picture

Q9

How can cost optimisation measures and life-cycle cost analysis (LCCA) be incorporated and implemented in highway/transportation related projects in Malaysia?

Sorry I do not have enough knowledge to address this. However, anything that will help in justifying the project is needed. We need to strike the demand and supply equilibrium, and the financial plan for the projects will be very critical

Q10

There are a lot of recurring issues in industry even though a lot of research & reports has been made. For example, congestion to port (Port Klang), safety issues on road, different standards of bridge height in Peninsular Malaysia..etc. How did the research institutions i.e. universities managed these research outcome to be presented to the authorities, government & related parties i.e. JPJ so that they make use of the informations for standardizing regulations, problem solving, and ensure a better logistics management in the nation?

I have addressed this in my talk. It has to start for researchers doing relevant research. We need to understand the problems (real problems), and then subsequently design a research that is realistic and would come up with useful results that will be beneficial to practitioners in order to solve the problems. It has to be problem-based research. And of course, the findings have to be shared with the relevant stakeholders. We would then have a better chance to get them implemented and real problems solved.

Q11

When will Malaysia be ready to fully embrace electric vehicle?, and how UK and Japan able to set their aim to stop fuel based vehicle in just 20 years time from now?

There are many dimensions here. 1. The people: Are they ready? Malaysians are less passionate in championing causes (in this case energy consumption), we need to do more research to find ways to change this. 2. The cost? For it to work it cannot be just within the high income sector. In fact it should also be in the commercial vehicle sector. When there are enough demand, the price will be more affordable. 3. Infrastructure and service support. This is also very critical. Now we hardly see any charging station in our vicinity. Except in Klang Valley, we will not survive with an electrical car. So again, this requires proper planning, and local authorities will champion it, but the chicken and egg situation makes it more challenging as it will be a calculated risk

Q12

How do we publish our research in order to start a chain reaction of changes?

I would re-phrase the question. How can our research results create reaction of changes. Because publication alone, may not do the job for the Malaysian professional audience. Unfortunately, our professionals and people in the authority do not refer to journals as much as we academics. So as I remarked in my talk, we need to mix between publications and other knowledge sharing platforms. From my own experience, I always feel that conferences where professionals and government officers like to attend, is the best platform to get the reactions of change. You need to build your reputation from being a speaker, to a plenary speaker and ultimately to a keynote speaker. Coupled with good research results that are logical and practical, you will Insyallah be able to get changes as intended. Good luck and my best wishes.

Q13

Is there any design guideline on public transport station (e.g: roof height, bench height etc.) publish by any relevant party in Malaysia

I have seen this somewhere. Bus stops are under the local authority, so maybe they should come up with guidelines. Terminals was under SPAD before, but I don't think they have any standards produced. I am not sure if you are referring to terminals or to bus stops. Terminals have a general guideline, but not to the details of the furniture. etc

Q14

The effect transportation in pandemic

This requires more research and I hope many are doing it. Demand behaviour will definitely be different. How it affects on demand and supply interaction will be interesting. The traffic engineering side is also interesting. Whether the speed, volume and density relationships is the same or they differ. The private and commercial vehicle composition will also good to study. How about the effects on public transport? And more importantly, will this be temporary or a new norm as many have adjusted to WFH, and rely on deliveries. Need to do more research on this.

Q15

Could you please cover (passenger's Behavioral intention to use public Transport). Thank you.

Yes I have covered this in my talk

Q16

How can we model intermodal transport system in my country Ghana to provide better service to commuters

Sorry, I need to know more about the situation in Ghana. But you can take some tips from what I had shared in my talk

Q17

How to fill the research gap during pandemic in term of data collection? Thank you Prof.Dato'

Yes, this is very tricky. Unless you are doing research on pandemic, the pandemic situation is actually giving us a different behaviour, and good research work should use samples that represents normal situation. My suggestion is to delay the study or to change the scope of the research to incorporate the pandemic behaviour. It will be challenging for those who have to deliver specific unchangeable objectives and scope

Q18

Is the research valid if the data was taken during covid 19 pandemic, because as we know during pkp, low utilization of transportation

Same answer as Q17

Q19

Maintenance issues in urban and rural areas. Too many holes causing accidents. While some come and paste holes. Problems faced with quality and standards may not be followed and prolonged. How do we make sure all this can be overcome and until when?

There are many possible causes:

- 1. The prevailing road condition that has not gone under adequate maintenance procedure that are sufficient, of high quality and timely. As a result, there are more kilometers of our roads that are in poor condition, thus susceptible to be disintegrated easier.*
- 2. Overloading heavy good vehicles is too me a major cause of road damage. Studies have shown that the degree of overloading in the country is very serious. When overloaded vehicles traverse over the roads, the structure of the road surface will not be able to bear such dynamic loading and consequently will disintegrate road surfaces faster.*
- 3. With causes 1 and 2, the situation is make worse by heavy rain in Malaysia, especially when it floods*
- 4. Another human-made cause is lack of coordination with regards to road- digging. This usually happens when utility companies (and any other that needs to go underground), start to re-dig the roads to install their utilities. With poor coordination and poor workmanship, the outcome would be poor road condition and susceptible to road damage.*
- 5. Conformance to the specification and standards during road construction and road maintenance are critical.*

So we need to tackle the above to solve the problem

Q20

What is the latest 2021 onwards plan for PEVs in Malaysia.

Same answer as Q11

The following questions were asked during the session on 22 January 2021

Q21

To Prof. Farhan, what have we learned from 20 years of Prasarana and government involvement in public transport, and what are the best practices we can learn from these 20 years – *Moaz, Canada*

Our strategy was right at first, as the government needed a partner in providing the supply side for public transport. Prasarana was formed to be the asset owner of public transport systems. Whether Prasarana should have gone into operation or not, can be debated. It was perhaps a decision that was obvious, as Prasarana was regarded as a public transport company, so anything to do with public transport operation was naturally placed upon Prasarana shoulders. With MOF backing, the decision was also easy to be made by the government. However, whether it was a sensible business decision, is another debate that we can do.

An analysis on whether asset owner and operator should be together or separated should be carried out, as we are still practicing them now, since the financial model of our rail systems are based on asset development as well as using long term operational commitment. My point is perhaps more in the transport economy side, we are assuming public transport demand elasticity is the same as private vehicle demand elasticity (as in the case of tolled roads). I have not seen enough research being done on this. But Prasarana will tell us, that their subsidiaries, especially buses will not survive without government interventions and subsidy.

SPAD used to have many bus subsidization programs to help bus operators including RAPID buses. I am not sure if APAD continue to do so.

The best outcome, is at least we have buses plying through the roads of our cities and suburban and even semi rural areas, because of Prasarana. We definitely can give credit to Prasarana for the LRT systems and the MRT operation. But whether it is the best financial model, remains to to be debated and perhaps more research can be done on it. But, I can appreciate why there are not many research, as there are too many corporate confidentiality. Perhaps MOF should commission a study as part of the government effort to push for more public transport usage in the country for the future.

Q22

How can you encourage multidisciplinary engagement even within academicians ourselves?

First, every researcher must understand that in order for the transport research to go beyond research, there need to be contribution from several knowledge domains. Transport and mobility is a combination of user, vehicle and roads/the infrastructure. So by definition, transport research needs to take into accounts multiple aspects that are multidisciplinary in nature. So, motivation for completeness and best results would be the prime motivation

Second, if we design any transport research proposal, a multidisciplinary team would be more advantageous for the reasons above. However, if the grant is fundamental in nature, maybe you need to focus more on the appropriate discipline.

So that is why the suggestion I made in this talk is for clusters to be formed based on a multidisciplinary team. From discussion within the cluster, and when the team has dissected enough the theme of the cluster, the team will decide, which project can be mono-discipline, and which will be multidisciplinary ones.

Q23

For post research, it will be good for us to also share our findings to the community and industry (wherever relevant). In this case we can make a real change at population level. We can explore the social and traditional media platforms. Do you agree prof? - *Kulanthayan KC Man*

Agree. We need to be selective to the intention of sharing. There are various possible reasons for sharing with the community:

- 1. We need their involvement as without them our work cannot be verified at working level. So the engagement is part of the research long term methodology.*
- 2. It is part of advocacy, because the ultimate impact of our research requires community and society to change (like road safety)*
- 3. It is part of educating and social awareness*

Q24

Any studies on energy efficiency in transport sector? Or on how energy efficiency can be improved in transport sector? – *Datin Aizah*

Yes, I am sure there are studies being done, especially amongst researchers looking for alternative energy source for vehicles. I believe, much can be done to help the country achieve our energy efficiency target. But banking on people to change to EV alone will not be easy to achieve. It will be a costly affair too, as the government will need to have extensive infrastructure support (charging stations). What is the hotspots for charging station throughout the country presently? Its a case of chicken and egg. We will not have enough charging stations, if there are not enough cars on the road for them (another question, how is the sales of hybrid and electric cars?). More problem statements here.

However, if we talk about energy efficiency of the transport sector, I have the following suggestions:

- 1. Do studies to prove that when more people use public transport, we will get the net energy reduction for the country (maybe there are already available reports)*
- 2. Work with APAD and JPJ to push for all commercial vehicles to run as an EV. We will get double progress.*
- 3. Continue to provide incentives for EV. But government need to weigh out on the impact of reduction to country's revenue due to lower petrol consumption. So need a holistic strategy*
- 4. With more demand, the support infrastructure will hopefully grow, and we may see a change*

Q25

2.Prof, one of problem is getting data from relevant agencies. Some of them claimed confidential, we need to sign NDA but the quality of data is not as expected and helpful..-Nik Ibtishamiah

Yes, this has to change, but there must be a concerted effort for this. We need to find a champion to push for this agenda. One way is to establish common baseline data that everyone will use. Maybe we can do an effort towards proposing methods to liberalize data sharing in Malaysia. I don't think we have done this.

But meanwhile, we can create a common database amongst researchers. Maybe this could be one cluster from this platform.

Q26

Prof, how we combat the increased number of vehicles on the road to reduce traffic congestion especially in peak season and what is the effective measure that can be done to align with SDG especially for Smart Cities and Sustainability? - MD YUSHALIFY MISRO

I have answered this in the talk. We need to balance between traffic restraining measures and traffic management measures. Malaysia has never adopted seriously traffic restraining measures. As I have said, primarily because we need to make sure that public transport is sufficient and can play that alternative role.

Q27

Were certain travel characteristics valued for certain activities, such as managed lanes offering reliability and transit providing lifeline transportation to those who needed it? – Stephen Poon

We need to understand the typical travel behaviour of certain activities (based on continuous monitoring). With more understanding of the behaviour, we can then introduce appropriate interventions. Such interventions must also be versatile enough for adaptation and adjustment to be made. This is where we should use simulation or other forms of modelling to evaluate the probable outcomes.

Q28

Prof, do u agreed by changing the mode of transportation it will reduced the Vehicle KM Travel (VKT) and possibly we can achieved high reduction in accident rates (this reflect as when MCO is enforced and limiting the no of vehicles on roads). I've believed by providing a good road will only attract new vehicles as the no of registered vehicles keep rising - Ir.
MOHD KHAIRUUL KHAIR SHA

VKT is a measure of exposure. Probability of crashes may increase with higher VKT but the severity of crashes may be the results of other factors. There is one irony between density vs speed vs crashes. Unfortunately, when road users attitude is poor and coupled by ineffective enforcement, lower density may result in higher speed and may lead to more serious and severe crashes. We have witnessed this since the pandemic started. The numbers maybe lower, but the intensity of crashes may be higher.

Our mixed traffic situation is a more serious concern, especially with significant numbers of motorcycles. This is more dangerous, and more research need to be carried out to establish more relationships.

Q29

Since Dato develop the capacity manual for 15 years, in your opinion, how long our expressway/road can still operate below carrying capacity?

The PLUS expressways are already fast reaching capacity more frequently. This is despite adding additional capacity to some segments. Some roads leading to city centers have also reached capacity but only during peak hours.

At the moment, our solution has always been to add additional capacity by adding more lanes. But this is not sustainable. We need to manage the demand and to manage traffic better. The operational capacity needs better attention and management with enforcement. For example, on many expressways and intercity roads, operational capacity is being reached because of overloading heavy goods vehicles that are slowing the traffic seriously.

Q30

Why can't we adopt the gold standard "household travel diary" approach for transport modelling instead of screenline surveys. Our modelling to inform decision making is faulty, trust me, I was in SPAD planning. Garbage in, garbage out.- Zulkarnain

Yes, I agree that the household survey is most desired. But this can only be done if it is done at a national and regular intervals like the census. This is one of the basic data Malaysia is sorely missing. We need to establish a national travel survey that is done every ten years. The last time that I know we did such a study independent of any project, was the Klang Valley Transportation Studies, which did an extensive household survey back in 1984, which I

had used extensively for my PhD work. I agree, together with my answer to Q25, we can dedicate one cluster to address the data issue.

Q31

Prof, what is your expectation for railway engineering in Malaysia? - Syahirah

I feel that rail is the future for Malaysia. I have always believed in the hierarchy of public transport as means to get the best out of public transport for it to function as it should. And Rail, for both inter-city and within city/regions is the highest hierarchy. We need to establish a RAIL NETWORK DEVELOPMENT PLAN, like what we have for the HIGHWAY NETWORK DEVELOPMENT PLAN, and we were gearing towards that at SPAD before it was closed. This effort is very critical, because rail systems require dedicated right of way, as much as highways, and if we do not pre-plan their alignment, we will fast lose land availabilities, which will make rail developments very expensive, because of land purchase cost. The present Railway Assets Corporation (RAC) land and alignment can be the backbone of the planning, but a very comprehensive plan for both intercity and within city systems must be established. This will then allow planning to be done properly as we go through the 5 year Malaysia Plan.

If you are talking about rail technology, we had a good head start with many local companies before (like SCOMI). But for this companies to survive, we need more systems in the country. It is a very competitive industry. I have shown that we have a dedicated National Rail centre of Excellence under MOT that should spearhead this. We can develop our ability to develop our own capabilities that can be useful not only for Malaysian rail, but also for them to be exported.

But the culture of using rail, and ensuring that rail is part of a seamless transport system is also important for Malaysia. This is the best time to further nurture this culture as population is now using the ETS to the north and is very popular. We need the link to the south and the ECRL to complete a nation-wide norm for intercity rail usage. We now need more inner city rail systems, other than just in Klang Valley. The problem is the planning, and many cities have to plan for their own, with minimal backing from the federal. Which can be challenging.

Q32

4. There is a philosophical fault line in how we plan cities. Too much focus on movement of cars instead of people. - Zulkarnai

Yes, the approach has to change. We are definitely car-centric. I have yet to see any developer bold enough to really do a Transit Oriented Development. Again, it is chicken and egg. Our public transport is still very poor, and reliability and seamlessness have not been achieved. We need to achieve that first, before we can see more change in planning mind-set. Maybe planners amongst us can provide their views on this.

Disclaimer: The answers given are the views of Prof. Dato' Dr. Ahmad Farhan bin Mohd Sadullah, and can of course be challenged and debated. Thank you to all who have given the questions