

THE POTENTIAL AND CHALLENGES OF AMPANG JAYA MUNICIPAL COUNCIL (MPAJ) TOWARDS ACHIEVING LOW CARBON CITY (LCC): COMMUNITY PERSPECTIVES

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ABSTRACT

The goal of reducing carbon emissions by 30% by 2030 in Ampang Jaya requires participation from local authorities and the community itself. Thus, this study has been done to evaluate the potential Ampang Jaya Municipal Council (MPAJ) to achieve low carbon city (LCC). The Ampang Jaya area was selected as the area of observation because of its high population density and its high potential to achieve LCC. The study was conducted qualitatively using an in-depth semi-structured interview method and the data obtained were analysed using thematic analysis. Seven themes emerged from the in-depth interviews which can be incorporated into three dimensions namely themes execution and planning, enforcement of policies and, ongoing works by MPAJ under the dimension of readiness of local authorities; themes cleaner and healthier environment and, LCC in Ampang Jaya under the dimension of achievable milestones; and the themes of community's daily lifestyle changes and roles by local authorities under the dimension of responsibilities. In principle, this research concludes that MPAJ has a high potential to achieve LCC while being able to overcome the challenges they face to achieve this feat.

Keywords: Low carbon city; Readiness; Responsibility; Local authorities; Community

INTRODUCTION

Generally, low carbon city (LCC) is a maintainable urbanization approach that focuses on reducing the carbon footprint of urban areas left behind by human activities that lead to environmental pollution. One way of reducing carbon footprint is by limiting or putting an end to the use of energy sourced from fossil fuels. LCC is a sustainable urbanisation method that focuses on reducing cities' anthropogenic carbon footprint by decreasing or eliminating the use of fossil fuel derived energy. LCC combines the characteristics of a low carbon society and a low-carbon economy while fostering collaboration between governments, businesses, and civil society. Despite the temporary restriction due to the Covid-19 outbreak in Malaysia in 2020, the country still saw an increase in concentrations of all three major greenhouse gases (GHGs) namely carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) (New Straits Times 2021). The emission of these greenhouse gases into the atmosphere is a significant reason for global warming and climate change. If concentrations of these GHGs continue to increase, climate change may continue to worsen and citizens all over Malaysia including the ones staying in urban areas such as Ampang Jaya, might find themselves in a turmoil. Expected challenges to be faced include but are not limited to, loss of biodiversity, greater occurrences of floods and increase in occurrences of diseases (Haliza 2018), to avoid these consequences, the carbon footprint of citizens in Ampang Jaya must be reduced.

Since its independence, Malaysia's principal priority has been to strengthen its industrial sector, which has resulted in a quick and fundamental shift in the country's economy. However, following the achievement of the 1985 Industrialization Plan, which resulted in a rapid structural transformation, primary energy consumption has increased; rising from 11 million tonnes of oil equivalent (Mtoe) in 1980 to 70 million tonnes of oil equivalent (Mtoe) in 2007. The increased use of fossil fuels has resulted in a direct increase in carbon emissions since then.

In order for the planet to remain healthy, nature's sustainability and well-being must be protected. This is the reason why achieving low carbon cities is crucial. In Malaysia, there have been a few policies and plans that have been implemented by the local authorities (LAs) to achieve LCC. However, efforts made by the LAs will not be enough if residents in urban areas such as Ampang Jaya Municipal Council (MPAJ) do not play their part in making sure that the proposed policies and plans are implemented. Thus, this research has been conducted to analyse the readiness of MPAJ in achieving LCC, to determine the achievable milestones that MPAJ has achieved and will achieve in the future and the responsibilities the community and the local authorities need to take on to make LCC a reality. It is hoped that the findings of this research will help the local authorities to produce a greener and healthier Ampang Jaya. Other than that, the findings of this research are also hoped to be useful to train local authorities to present information more effectively to the community about LCC so that more awareness about the efforts and policies that have been developed can be shared with the residents of MPAJ to curb the issue of high carbon emissions in the area.

METHODOLOGY

Research Conceptual Framework, Research Area, Data Collection and Analysis

Purposive sampling was used to choose the sample or the informants from a population that information or knowledge can be extracted from for research purposes. The study conducted will be a qualitative study that uses an in-depth, semi-structured interview approach. Interviews will be conducted with selected informants consisting of community leaders and community members from Ampang Jaya. These informants are selected to represent the Ampang Jaya area. The criteria required during the selection of informants for both categories namely community leaders and community members, is to have lived in Ampang Jaya for more than ten years. Additional selection criteria for community leaders are to be involved in the business or industrial sectors as well. This additional criterion was set up to secure the informants those are familiar with the LCC agenda. Besides that, for the strata of community members, there are no specific requirements needed. There are 6 people that fit into the criteria mentioned above and were chosen to be the informants for this study. The informants list that was chosen to be interviewed are shown in the Table 1.

Table 1: Informants characteristics involved in the interview session

Informants	Characteristics
CL1	Ex-public relations manager at a water technology company
CL2	Experienced textile wholesaler and businessman who works closely with Giant, Mydin and Lotus
CL3	A retired businessman who produced and sold educational equipment to Montessori schools
CM1	A banker who works and resides in Ampang Jaya
CM2	A security guard working and residing in Ampang Jaya

A semi structured interview method was used to gain in-depth knowledge on the research problems and issues. The questions that were asked in this interview are categorised

into three categories which are, the main questions, the following questions and the investigating questions in which these questions will be focusing on the depth, the details and the knowledge of the information.

The semi structure interview method was more flexible and the questions asked can be expanded more based on the necessities that were found by the informant (Zurina & Hukil 2012; Hukil et al. 2020; Nurizatul et al. 2021) The constructed questions for the interviews were the same for all informants. If the informant does not understand the context of the question, the informant can verify the questions directly with the interviewer. During the interviews, voice recordings were taken. Field notes and observations are also done to help with understanding the information that has been recorded.

The information provided by the informants from the interview session was analysed using thematic analysis to explore their perspectives on the research questions. Results from the interviews in the form of audio recordings were converted to text form. Then, the text was examined before thematic analysis is done. The similarities and differences between each theme were evaluated, compared and interpreted to produce several subthemes under each theme. The research flowchart was illustrated in Figure 1.

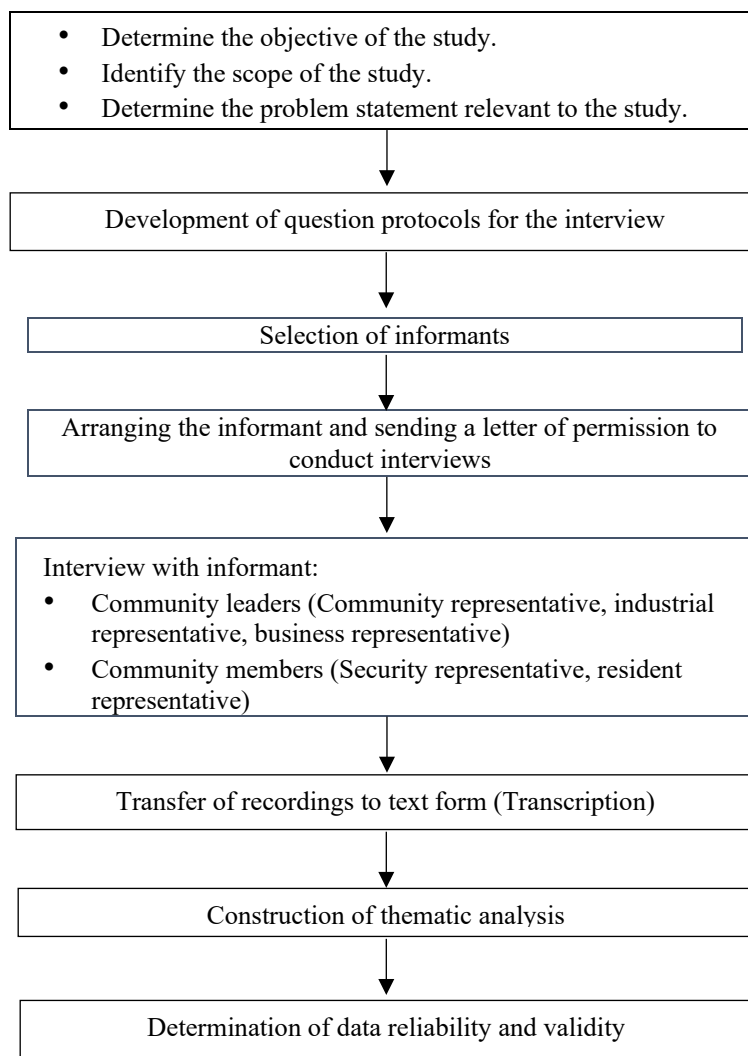


Figure 1: Flow chart of the research

RESULTS AND DISCUSSION

By using the thematic analysis that was used to analyse the views from all the informants, there were 7 themes and several subthemes were constructed under the dimensions namely readiness of local authorities, achievable milestones and responsibility.

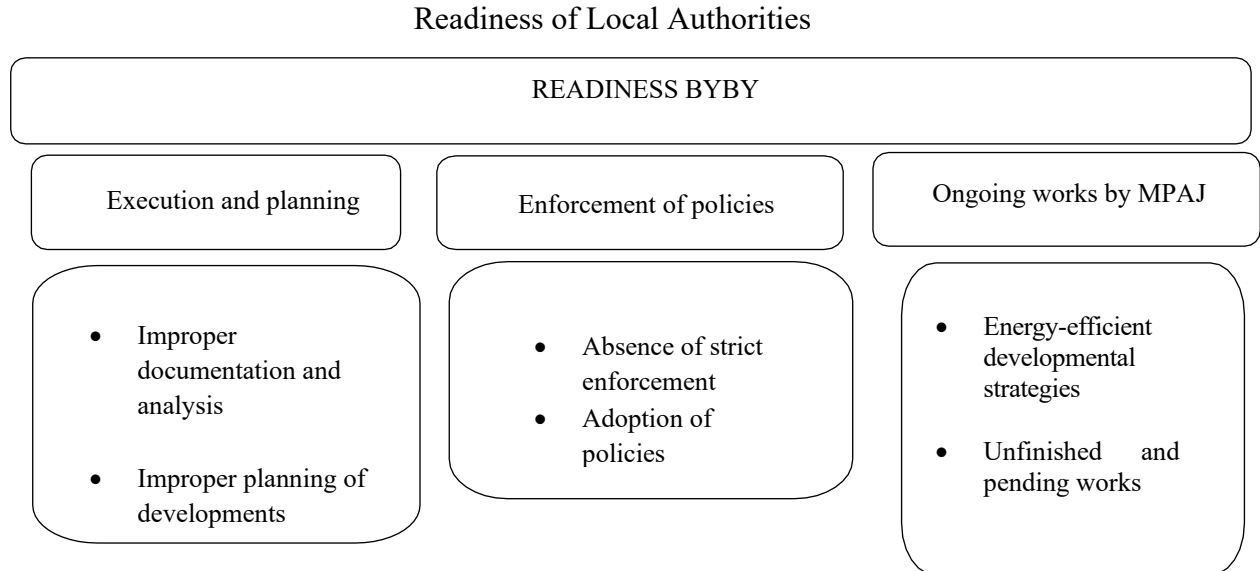


Figure 2: Summary of themes and subthemes under the dimension of ‘readiness by local authorities’”

Execution and Planning

To answer the research question which is about the potential and challenges of local authorities to achieve low carbon city in Ampang Jaya, 3 themes have emerged namely execution and planning, enforcement of policies and ongoing works by MOAJ. Two subthemes were found under the theme of execution and planning which are improper documentation and analysis, and improper planning of developments.

According to the informants, the most important thing when implementing strategies are proper documentation and thorough analysis to see if the strategies are working or not. The informants’ views towards execution and planning are highlighted below.

“...so, one is implementation, and then next is, you know, documenting your implementation. Has it worked? Has it not worked? If it has not worked, why has it not worked...” [CL1]

“...you have a proposal, you have a planning stage, you have an implementation stage, and then you have a stage where everybody is like, using it now, are you doing enough research to see if these things are working or not, it is not merely just planning and implementing...” [CL1]

“...but I have to say for MPAJ, it is difficult because if you go backwards, our National Automotive policy hasn't even been finalized and announced although they have been talking about it for many years...” [CL3]

“...The only problem now is there was this talk about trying to segregate the ways, you know, into paper, and whatnot. So that one was talked about, but it was never carried out...” [CL3]

According to Pradhan et al. (2016), the effectiveness of policies is measured by short-term, immediate, and tangible benefits rather than long-term adaptation strategies. Hence, it is necessary to urgently implement appropriate measures for long-term adaptation to achieve LCC by 2030.

The second subtheme is improper planning of developments. The informants believe that development plans by private or government developers have to be revamped to ensure they are aligned with the policies and implementations that go in hand with the policies built around LCC (Hameed 2019).

"...just keep building them, you know, like at the drop of a dime, like in the same area about literally five minutes apart, there are two malls in you know, where I stay..." [CL1]

"...the buildings here are built very near to each other making it congested and it does not have a systematic planning as compared to newer cities that are being built now..." [CM1]

"...the forest at Bukit Belacan is no more. Since a highway was built there, the forest is no more and it has been destroyed. They are supposed to take care of it and not let it be destroyed. Just so they could build roads, they were willing to destroy the forest..." [CM2]

The opinions of CL1, CM1 and CM2 informants are consistent with the information in the book 'Low Carbon Cities: Transforming Urban Systems, which indicates that low carbon cities must be properly designed, planned, and developed in order to build a city that is both sustainable and comfortable to live in.

Enforcement of Policies

Under the theme enforcement of policies, it was noted that strict enforcement by local authorities were missing.

"...and just sort of hard implementation like, "Hey, this is what we're going to do and you have to oblige in order to run your business, you know, in a more efficient manner..." [CL1]

"...I wouldn't say it's insufficient, it's a good start. But we have been at this "good start" for years now..." [CL1]

"...enforcement regulations are correct and it's there but whether you enforce, that's another big question..." [CL3]

Furthermore, the informants also recommended the local authorities to adopt policies implemented by governmental bodies from other countries. These policies can be fitted into existing policies that suit our requirement (Hudson et al. 2019; Lee 2014).

"...in LA, they have a lane where it's considered a fast lane. Fast Lane not because you can speed but because those people who have more than 2 people in the car, gets to drive on that lane..." [CL3]

"...when I travelled to Beijing, there are certain odd days that if you have a car and it's a normal combustion car, you are allowed to drive around Beijing city only on alternate days..." [CL 3]

"...they follow the numbers behind your cars; odd number, then you get certain days, even number then even days. But, if you drive a hybrid or electric car, you can go into the city any time of the day, every day..." [CL3]

The polysemic notion of LCC was pushed in China as a strategic response to climate change and urban sustainability, according to Hunter et al. (2019). This method has the

potential to challenge conventional thinking and enable cities to investigate and scale up GHG reduction operations. In other words, if local authorities work on revamping existing policies by collaborating or forming partnerships with other countries or cities that work towards achieving LCC, it would help in effort to reduce the carbon footprint in Ampang Jaya much faster (Mohammed Rum & Akasah 2012; Zakaria et al. 2020).

Ongoing Works by MPAJ

The final theme under the dimension of readiness of local authorities is ongoing works by MPAJ and under this theme, there are two subthemes. The first is energy-efficient developmental strategies that have already been implemented by local authorities.

“...the buildings also that were put up in Ampang, the Ampang Jaya area right, where MPAJ is authoritative, you know, having more solar panels, having LED lights, having more cooling system upgrades was done...” [CL1]

“...most of these new development in Ampang, you're actually selling the house with the solar panels. This is something new...” [CL2]

According to Arvind Chel and G. Kaushik (2018), the building sector is rapidly expanding. Investing 30–40% of total world basic resources, this sector has now surpassed the industry and agriculture sectors as the third largest user of fossil energy. This shows that local authorities in MPAJ are on the right track to achieve a sustainable and energy efficient Ampang Jaya by implementing development strategies that focuses on cutting down the consumption of fossil energy (Abdul Rahman 2020; Ho et al. 2013). However, some of the informants believe that local authorities leave works hanging and unfinished.

“...billions of ringgits were allocated for this 'River of Life' project but now you go the river is still dirty and it is still flooding sometimes, overflowing into the houses, you know? So, what happened to that? That's a big question mark for 20 over years...” [CL3]

“...there was this talk about trying to segregate the ways, you know, into paper, and whatnot. So that one was talked about, but it was never carried out...” [CL3]

“...have been plantings of big trees and flowers by the roadsides. However, that is not enough as it doesn't cover large areas in Ampang...” [CM1]

The findings under this dimension shows that local authorities are indeed ready to work towards achieving LCC and they have the potential to achieve it. However, more work needs to be in done in terms of analysing the efficiency of implemented policies and bringing about strict enforcement Other than that, local authorities should also make sure that projects are seen through till the end and not left hanging or incomplete.

ACHIEVABLE MILESTONES

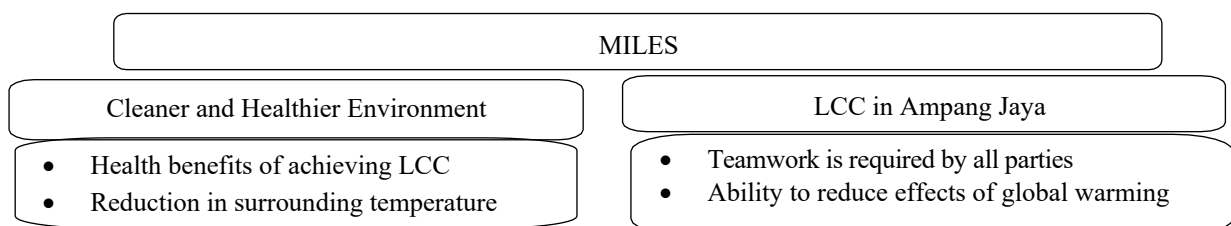


Figure 3 Summary of themes and subthemes under the dimension of ‘milestones’

Cleaner and Healthier Environment

The second dimension is achievable milestones which incorporated 2 themes namely cleaner and healthier environment and, LCC in Ampang Jaya. The first subtheme found under the theme of cleaner and healthier environment is the health benefits of achieving LCC.

“...because obviously, you know, carbon footprint, lessening your carbon footprint is for good health and livelihood, essentially, right, because pollution does affect your health...” [CL1]

“...environment here will be taken care of and we can live healthier lives because the air will be fresher due to lower amount of pollution...” [CM1]

“...benefits include clean air which will be beneficial to our health...” [CM2]

Informants agreed that better air quality will ensure residents of Ampang Jaya live safer and healthier lives. However, if the air quality in Ampang Jaya does not improve, many people will suffer from diseases that could lead to death. This is in accordance with the research done by Larry E. Erickson (2017) who mentioned that asthma, cardiovascular illness, chronic obstructive pulmonary disease, lung cancer, and dementia are all linked to poor air quality due to combustion emissions in many urban areas, resulting in many premature deaths (Mei et al. 2017; Chin et al. 2019).

Moving forward, informants also believe that achieving a cleaner and healthier environment will improve the weather and reduce the surrounding temperature.

“...this Malaysian heat that we are so famous for, might just become a bit cooler...” [CL1]

“...Although we are a tropical country in some capacity, the climate will, will become cooler in nature...” [CL1]

“...weather will be cooler than how it is now...” [CM1]

It is fair to say that informant understand that obtaining a cleaner and healthier environment will not only be benefit them but also improve the environment quality and reduce the temperature of their surroundings. Other than that, informants also acknowledge that premature deaths and diseases can be avoided if air quality in Ampang Jaya improves.

LCC in Ampang Jaya

The next theme is LCC in Ampang Jaya which again, has two subthemes under it which are teamwork of all parties and ability to reduce effects of global warming The informants highlighted the importance of teamwork among all parties to achieve LCC.

“...if we were to just do our part, and everybody does their part, at least we are moving towards the goal and not away from the goal...” [CL3]

“...if the Local authorities do their job properly from now, then the target will be achievable...” [CM1]

“...it is possible to achieve LCC by 2030 if they take serious actions and preserve remaining forests...” [CM2]

“...if we take action, there will be a change...” [CM2]

Evidently, informants realise that achieving LCC requires a team effort, and all parties including residents, community members and local authorities should lend a helping hand in hitting this milestone (Sullivan et al. 2012).

However, the informants also aware that by achieving LCC in Ampang Jaya alone will not reduce the effects of global warming.

“...let's say a lot of cities in the world become, you know, if they achieve their implementation of becoming a low carbon city, yes, that will largely eliminate global warming...” [CL1]

“...no global warming has gone too far in terms of overcoming, but in that sense over the world, there has to be more policies applied...” [CL2]

“...I doubt we can because the world is not an island, the world is not interconnected...” [CL3]

“...even though it is a global problem, it is possible...” [CM2]

This is why international awareness about global warming is so crucial to get everyone to participate and work together to achieve environmental sustainability worldwide which is what’s currently being done. According to the United Nations Environment Programme (UNEP) promotes global environmental awareness and political action by highlighting resources and programmes that support low-carbon economies and lifestyles on World Environment Day (United Nations 2020; Shaheen & Lipman 2007).

Hence, it can be concluded that informants do have a good understanding of what achieving LCC in Ampang Jaya can mean for them and the environment. Additionally, they also realise that achieving LCC in Ampang Jaya is not the key to tackle the impacts caused by global warming as it is a global issue.

RESPONSIBILITIES

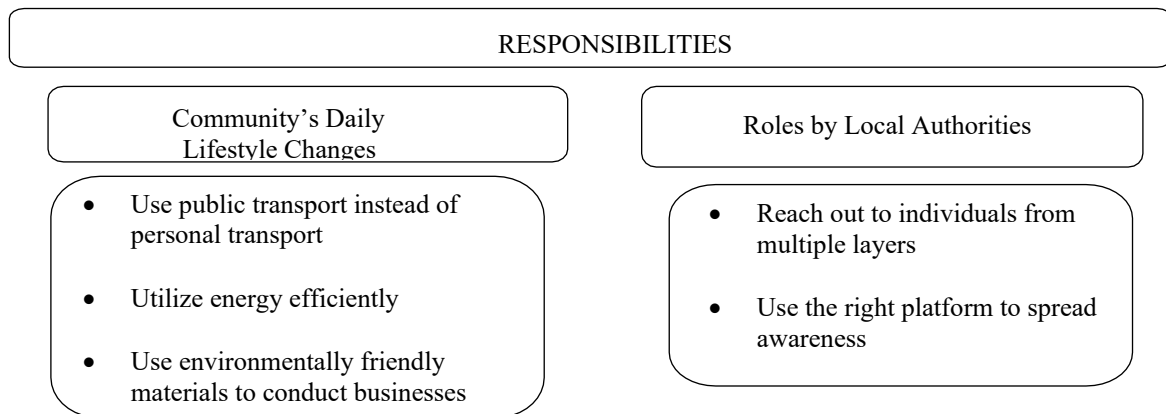


Figure 4: Summary of themes and subthemes under the dimension of ‘responsibility’

Community Daily Lifestyle Changes

There are two themes successfully found under the dimension of responsibility, namely the theme of community’s daily lifestyle changes and roles by local authorities. Among the subthemes under the theme of community’s daily lifestyle changes, **first** is regarding the usage of public transport instead of personal transport.

“...use the public transportation...” [CL1]

“...so how do you cut down on the on the on the private sector having their own cars?” [CL3]

“...reduce the usage of personal transportations and use public transportation instead...” [CM1]

“...many LRTs, MRTs and buses have been provided in Ampang Jaya and the community can make use of these...” [CM1]

Referred to global warming concerns, a greater knowledge of the impact of more ecologically friendly modes of transportation, such as public transportation, which emits fewer pollutants than private vehicles, is critical. This means that the community need to pay heed and make use of the public transports provided by the local authorities to help reduce the emission of carbon in Ampang Jaya (Abdul Rahman 2020; Jing et al. 2022).

Secondly, the community needs to be mindful of how they use energy in their daily lives too.

“...how they utilize their electricity at homes, that's also a thing you do right? How you demolish your own energies that you use, utilize at home, that's also a very, very crucial...” [CL1]

“... another thing that I feel like is a super important way is this entire concept of zero hour. You know, shut down your electronic devices, your homes, everything for just even an hour a day that makes a huge amount of difference...” [CL1]

“...in many houses, even in Ampang now, people are becoming very much alert that you find they're actually using solar panels, LED lights...” [CL2]

“...at home, perhaps they can use electrical appliances for cooking and use less gas and fuels that bring damage to the environment like charcoal...” [CM2]

These findings are consistent with those of Hanifah Mahat et al. (2019), who discovered that some communities are already willing to invest in energy-saving techniques such as using solar energy as an alternative source. This situation suggests that the community is concerned about greenhouse gas emissions and is aware of its harmful effects.

Thirdly, the informants also encourage the business owners to use environmentally friendly products or materials to run their businesses (Diffenbaugh & Burke 2019; Wade 2016).

“...companies have to you know, take an initiative to have different ways of saving electricity, lights, and to be more supportive towards free packaging...” [CL2]

“...instead of using plastic, they should use a nonwoven package...” [CL2]

“...the managers of the factories need to find solutions or new technology. For example, they can start using materials that emit less carbon dioxide...” [CM2]

However, most of the respondents in a particular study conducted by Josef Krause 2015 were unwilling to pay more than 20% more for ecologically friendly products than for conventional products. Only 38% of respondents said they buy environmentally friendly products on a regular basis. This shows that local authorities need to step in and ensure business owners strictly follow the plans and policies implemented by MPAJ to create a more environmentally sustainable Ampang Jaya.

Roles by Local Authorities

The second theme under the dimension of responsibilities is the roles by local authorities. It is believed that the local authorities need to speak to individuals from various layers of community to ensure that everyone has the same understanding of what LCC is and what is being done by MPAJ to achieve LCC in Ampang Jaya.

“...these business owners, obviously, are going to do what is most easy, what is cheapest, what is most convenient. So you need to speak to them, and you need to explain to them how crucial it is to have them on board...” [CL1]

“...speaking to individuals on the ground...” [CL1]

“...Promotion for it is lacking. Therefore, it is also difficult for the community to follow...” [CM2]

Something else that local authorities should do is to use the right media platform to convey information and spread awareness about LCC to the public which they failed to do previously. Hence, the public is uninformed of the government's present attempts to achieve low carbon city in Ampang Jaya (Wu et al. 2022; Abdul Aziz et al. 2015).

“...it is obviously targeting, you know, very, very specific ways to reach these people. So if it means by, you know, hosting townhall sessions, which by right, these communities should be having these townhall sessions...” [CL1]

“...speaking about these things, doesn't mean like, "Hi, we're just going to have a press conference, and we're going to assume now that everybody is going to listen to us on television, or, you know, everybody has access to social media, and this is going to go viral"...” [CL1]

“...having seminars, educating them through WhatsApp, or probably now to make it more interesting, many others of us are talking about TikTok...” [CL2]

“...to create some awareness among the youth, or probably as for the adults, we can always talk about, you know, pamphlets, something for them to read on or, you know, to educate them that why we are getting into this is because in the long run, it's definitely going to benefit everyone...” [CL2]

“...spreading awareness is difficult if it is only done through press conferences, newspapers or sharing it on the news on TV...” [CM1]

“...the older generation will watch the news on TV but the younger generation do not have the time for that because not everyone has the time to watch the TV or read newspapers...” [CM1]

“...channel information in more ways like for example, through Selangor's website called SelangorKini or through other social media platforms...” [CM1]

These findings are also in line with a study done by Zamhari and Perumal (2016) which found that the mass media plays an important role in increasing environmental awareness because internet usage is quite high in the society, making it simpler to disseminate information. Effective information dissemination is thought to be able to help the community develop their passion for the environment, hence increasing community participation in efforts to achieve LCC indirectly.

CONCLUSION

In principle, this research concludes that in terms of readiness, MPAJ has the potential to achieve LCC because good developmental strategies are being carried out on the backend of

things. However, all the strategies and policies implemented by MPAJ needs to be properly documented and evaluated to see whether they are effective or not. Additionally, in terms of achievable milestones, the community realises that achieving LCC in Ampang Jaya will be beneficial to their health and the environment. Nonetheless, they also understand that achieving LCC in Ampang Jaya and reducing the effects of global warming requires teamwork by various parties. Finally, the responsibilities of achieving LCC need to be shouldered by both the community and the local authorities including lifestyle changes that need to be adopted and roles to be played respectively. In short, the potential for MPAJ to achieve LCC is high and with appropriate effort, they can overcome the challenges to achieve LCC.

ACKNOWLEDGEMENT

The authors thank Universiti Kebangsaan Malaysia for the financial support through a research grant (Grant no.: PTS 2011- 060) and Dr. Zurina Mahadi, Pusat Pengajian Citra Universiti, for her guidance in conducting the thematic analysis in this work. And also thank you to all the informants who took the time to offer their thoughts and opinions in order to make this research project a success.

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Received: 5 September 2022 / Accepted: 19 September 2022 / Published: 9 December 2022