

Determining Spatial Typology Through Visitor Perception for Apitourism Facility in Malaysia

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The Malaysian beekeeping industry is an important and integral component of the agricultural sector, providing additional income to farmers and indirectly producing food for the population through pollination services. To enhance more experience of bee life towards public community, apitourism emerges as a tourism that offers visitors adventure on way of life in beekeeping industry. But the perception of visitors on apitourism facility in Malaysia have been skeptical with the issues of convenience and safety of the facility and also the low quality of space that cannot give deeper interaction between visitor and bee environment. A successful apitourism facility can be executed by aiming to understand the visitor need based on their perception toward apitourism facility in Malaysia which to initiate better spatial typology required to enhance visitor experience in future. This paper intends to analyse visitor perception on apitourism facility in Malaysia to initiate better spatial typology, to enhanced visitor experience. The objectives from this dissertation are to study the purpose of apitourism facility, to analyse visitor survey within set of variables based on their perception toward apitourism facility and to initiate and determine spatial typology required for better visitor experience. Qualitative questionnaire was developed to collect primary data, assessing the perception of visitors which led to the determination of spatial typology needed by future visitor on apitourism facility.

Keywords: *Beekeeping Industry, Apitourism, Visitor Perception, Spatial Typology*

1. INTRODUCTION

Malaysia is the world's biodiversity hotspot for bees. Thousands of bee species, including honeybees, carpenter bees, sweat bees, alkali bees, orchid bees, and stingless bees thrive in the rainforest ecology, and serve as pollination vectors in our environment. Modern beekeeping began in Malaysia in the 1970s, when a beekeeper set up an apiary in Johor using imported commercial bees (*Apis mellifera*) from Taiwan (Ismail et al. 2016). From 2010 to the present, the development of the modern beekeeping sector in Malaysia has been remarkable especially on

stingless bee industry and they start to integrate with tourism sector in order to give insight and offer experience with the bee's environment and Malaysia's beekeeping culture to the visitors.

Simple understanding of the study is through the following aspects:

- Apitourism is a type of alternative tourism that is intrinsically related to beekeeping and the bee's environment. This type of tourism provides guests with wonderful experiences that are directly tied to nature which produces an authentic tourism offering. As an

approach to sustainability, api-tourism represents a new dimension in travel in which beekeeping, as a way of life, is intertwined with a desire to discover the natural and unique in the exchange of knowledge and experience (Arih, I. K. ,2015).

- The trend of apitourism in Malaysia still in early stage which have a long way to establish themselves as one of integral part in Agro-tourism field. The problem here are that 1) In Malaysia, little information is recorded about bee's by-products and related issues within beekeeping tourism trend (Ismail et al. 2016). These issues led to minor interest and understanding about apitourism facility among local tourist in Malaysia. 2) none study was conducted to understand deeper about visitor perception and level of experience satisfaction during and after their trip at current apitourism facility in Malaysia.
- The aim of the research is to understand the visitor need based on their perception toward current apitourism facility in Malaysia which to initiate better spatial typology required to serve better space quality and enhanced visitor experience with bee in future.
- The objectives of this study are 1) To understand the history, purpose and existing apitourism facilities in Malaysia. 2) To investigate visitor's perception of apitourism centre facilities in Malaysia within the pre-set criteria. 3) To determine and initiate the best spatial typology of apitourism centre in Malaysia in order to improve visitor's overall experiences and satisfaction.
- Impact of the study are 1) Guideline and Policy Making: The spatial typology from this analysis can be used and implemented as a guideline to design future apitourism centre facility for visitors. Moreover, it also can be assessment tool to determine or identify current apitourism facility that have potential to improve and converted into more proper place that meet the need of visitors in Malaysia. 2) Interactive Apitourism Model: this study also identifies the programmes should be implemented as basic requirement to improving the experience and knowledge of bee for the users and

visitor of the apitourism facility in Malaysia.

LITERATURE

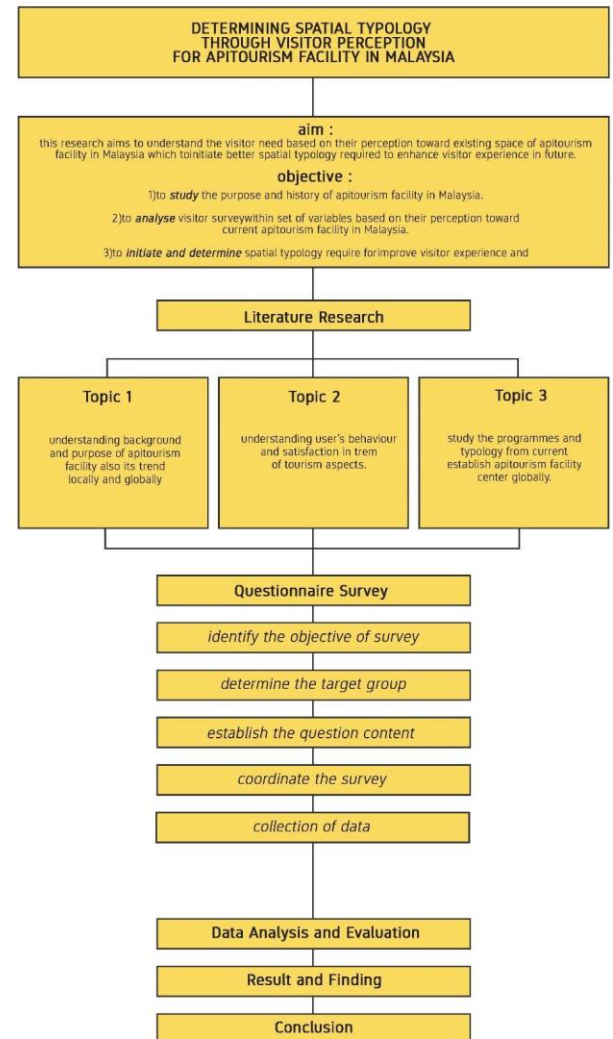


Figure 1: Research Framework (source: author)

The introduction begins with the information about beekeeping culture in Malaysia such as history and potential of the industry. Then, understanding the apitourism facility definition, purpose and its trend around globe including Malaysia. Then, literature continues with followed by understanding about spatial typology and programme from establish apitourism facility around the globe, followed by the understanding user behavior and satisfaction in term of tourism aspects.

- **Beekeeping Culture in Malaysia**

According to ScienceDaily, beekeeping is the practice of intentional maintenance of honeybee hives by humans which a beekeeper also known as apiarist that keep the bee's colony in order to collect honey and order by-product of bees or for the purpose of pollinating crops, or to produce bees for sale to other beekeepers.

Traditional beekeeping in Malaysia has been documented since the Malacca Sultanate (Hassan, 2003). However, it is believed that beekeeping was practiced for a very long time ago. In 1981, the Malaysian Beekeeping Research and Development Team (MBRDT). In October 1988, a national apiary centre was established at Parit Botak intended to plan, develop and organise training in modern beekeeping. However, the centre is less exposed to the public (Ismail, 2012; Mian, 2009).

The beekeeping industry in Malaysia has great potential. It could be explored and gain profits could be made from many angles.

- **Understanding Apitourism Facility**
Barbara, W. (2014) stated that apitourism is a form of tourism connected with beekeeping as a traditional profession and with bee products in ecological, food and medicinal aspects. According to Cambridge dictionary, facility is a place especially building where a particular activity happens or provide particular services or purpose. Hence, apitourism facility is place that serve as tourism activities related to the bee and beekeeping culture toward users who indicated as tourist or visitor.
- **Apitourism Trend**
Slovenia has already developed apitourism since 2007 and it is a model for our city. A country with long beekeeping tradition, which legally protects its local breed (*Apis mellifera carnica*), has achieved admirable synergies between beekeepers, tour operators and local businesses (Arih, I. K., 2015).

Indonesia one of the most dominant countries for promoting apitourism in Southeast Asia region compare to another Asean country. Their apitourism more focusing on educate and raise awareness among citizen about life of bee. Taman Wisata Lebah Madu Pramuka Cibubur which located at Jakarta is one of the famous apitourism center in Indonesia which most of their programmes target educational group such as kindergarten, primary and secondary school student that aim for establishing tourist spot that offer natural bee environment which help them understand and fell love with bee colony life and it's surrounding as shown in Figure 2 below.



Figure 2: Educational Activity at Taman Wisata Lebah Madu Pramuka Cibubur (source : wisatasekolah.com)

Malaysia has long history of beekeeping culture that can be strong point to develop our own establish apitourism standard. National apiary centre at Parit Botak, Johor was one of the early government initiatives to develop apitourism in Malaysia by having training and organize modern beekeeping culture which intention to further collaboration with tourism industry. However, the centre is less exposed to the public which must be rebranded with more staff and financial assistance to provide beekeeping related functions more effectively (Ismail, W. I. W., 2016).

- **Apitourism Spatial Typology**
In Slovenia, most of their beekeeping museums still preserve exceptional collection of traditional equipment and bee-related art for educational purpose which highlighted to the young

generation for always appreciate and continue their beekeeping culture. Besides that, there always variety of activities within their bee house such as learning about the secret life of bees and observing the process of honey production, to harvesting honey, cooking wax, comb wiring, as well as obtaining propolis and royal jelly according to Arih, I. K. (2015). Moreover, some of the apiaries offer the workshop specialized in designing the beehive for the public also young apiarist which provide them with latest beehive design and suitable build material for the specific hive and bee species as shown in figure 3.



Figure 3: Beehive Design Course (source: iaac.net)

The hive scent inhaled by beekeepers while working or relaxing in the bee house is both pleasurable and beneficial. Arih I. K. (2015) stated that the free circulation of aromatic air from the hives, engenders an extremely favourable microclimate within the bee house, which exerts a beneficent effect on the human respiratory system and well-being in general. As a result, some apiarist place mattresses within the bee house, converting it into an apitherapeutic chamber as shown in Figure 4.



Figure 4: Apitherapy in Slovenian Bee House (source: : Arih I.K.)

- User Experience and Perception**
 United Nations World Tourism Organization, in 2008, the number of tourists was up to 800 million person/times, and by 2020, there will be 1.6 billion person/times (Nunes and Spelman, 2008). Thus, tourism studies, which sociologists neglect, have attracted attention in recent years (Cohen, 2008; Larsen, 2007). Tourist perceptions are often accurate or realistic, and will seldom evolve and change once the customer utilises the service. Measuring perceptions within the measure of satisfaction is regarded as the important part which often influence on satisfaction. complete tourist experiences should include expectations, perceptions, and memories, which is consistent with the multi-phasic nature of experience (Larsen, 2007). According to Schmitt (1999), there are five dimension of the experience that will affect visitor perception which is senses, feelings, actions, thoughts and related aspect. Joseph and Gilmore (1998) suggest that an educational experience is a kind of active participation, while an entertaining experience is relatively passive. If tourists could experience both active and passive experiences, it would be the best experience.

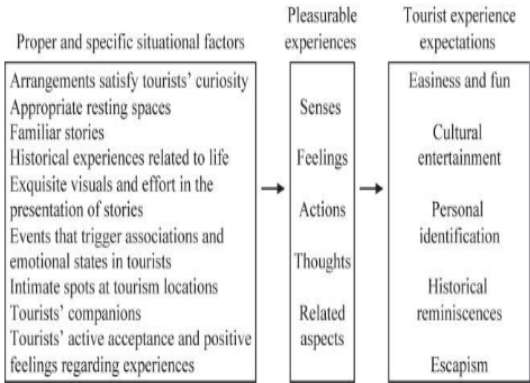


Figure 5: Mind Map of Five Dimension of Experience (Source: Sheng, C. W., & Chen, M. C.)

2. METHODOLOGY

In order to totally understand the need of tourist or visitor during and afterward their trip

throughout various type of tourism hotspot, center or facility, most of prior scholar used the questionnaire survey as the primary data collection strategy as for their study. Furthermore, this study was basically to truly understand the level of satisfaction and experience of visitor upon their visit at apitourism facility in Malaysia then followed by recommended better spatial typology.

- **Research Approach: Quantitative**

The research approach used in this study was quantitative research. This approach was adopted to better examine level of visitor perception toward apitourism facility which led to spatial typology required for better experience.

- **Data Collection Method**

This paper apply Likert Scale Questionnaire as primary data sources followed by Literature Research as secondary data resources.

The Likert Scale Questionnaire is a psychometric scale that is extensively used in survey questionnaire research according to Hussain & Barua (2013). This type of scale was developed by Rensis Likert (1931), who described and then developed this technique for the assessment of attitudes. In this analysis, a Likert scale questionnaire was used to evaluate and assess the amount of public agreement with the author's recommended spatial typology model for the apitourism facility. The survey was in closed-ended questions which according to past research, closed-ended questions are questions that can only be answered by selecting from a defined number of answers, often multiple-choice questions with a single-word answer, or a rating scale (e.g., from strongly agree to strongly disagree).

Secondary data sources, or literature research, are a frequent strategy in which the researcher would identify, investigate, and find information relating to the topic from other journals and sources. A literature review and study are researched and analysed to gain a better understanding of how to pursue this research, and specific topics related to the concept are highlighted. All of the

topics are divided into a few major categories, which are as follows: 1) Understanding background and purpose of apitourism facility. 2) Understanding user's behaviour and satisfaction in term of tourism aspect. 3) Study the establish apitourism facility programmes and typology. Following that, the data from the literature research mentioned above will be utilised to abstract the potential model of spatial typology needed for apitourism facility in Malaysia, resulting in the creation of a quantitative questionnaire to evaluate local perception and agreement

- **Questionnaire Survey Process**

Step 1: Identify the Objective of Survey. The first step is to figure out 'what information does the researcher need from the respondent to accomplish the survey's objectives?' As a result, the purpose of this survey is to determine the level of apitourism tourist community agreement and disagreement with the typology of spaces for apitourism facility derived from literature research, and to develop recommended space typologies models that can be used as a future guideline for improving these specific facilities in Malaysia.

Step 2: Determine the Target Group. The close-ended questionnaires were used to determine the level of satisfaction and perception of former visitor or tourist on apitourism facility in Malaysia, as well as acceptance of recommended spatial typology for better space quality and experience within bee environment. So, the survey focusing on the community of tourist who had visited current apitourism facility in Malaysia.

Step 3: Establish the Question Content. The survey was divided into four sections: A, B, C, and D. The four closed-ended question parts are made up of a series of generally multiple-choice questions with a single-word answer, and a rating scale (e.g., from strongly agree to strongly disagree). The questions will be translated into Malay so that local participants can read and respond more easily. The questionnaire survey's content will suit the research

objectives. Each section had several questions that pursue different objective which are as follows: 1) Section A – General Information 2) Section B – Visitor Perception onto Space 3) Section C – Visitor Perception onto Experience 4) Section D – Agreement of the Spatial Typology.

Step 4: Coordinate the Survey. This stage outlines how the questionnaire is carried out once the questions have been established and are ready to be delivered in layman's terms. The questionnaire for this study will be built with Google Forms, a web-based programme used to develop forms for collecting data. Additionally, Google Forms allows you to rapidly create an online survey and collect replies in an online spreadsheet. People can respond to questions using almost any online browser, including mobile browsers on smartphones and tablets.

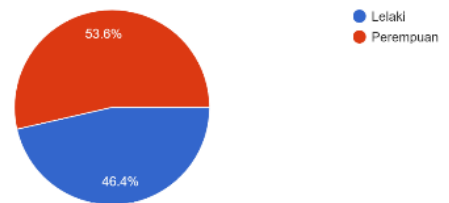
Step 5: Collect and Analyze the Data Collection

3. FINDINGS

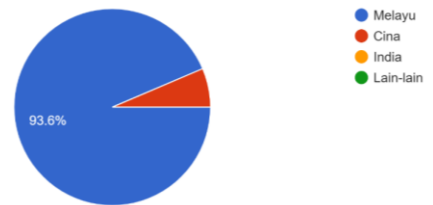
In an attempt to achieve the third objective of this research, this chapter gives the findings and outcomes of the researcher's questionnaire survey. Three components were investigated in order to establish the criteria required for an apitourism facility in Malaysia in order to meet the expectations of the visitor during their trip, thereby abstracting the potential spatial typology to execute the criteria. The secondary technique collects data from a number of sources, including past research articles, books, websites, newspapers, and more. As a result, secondary data from the literature will be used to construct the questionnaire survey questions and content, allowing the proposed spatial typology models for apitourism facility to be defined. The questionnaire has multiple-choice questions with a single-word answer for section A, and section B, C, and D uses rating scale questions ranging from 1 (strongly disagree) to 5 (strongly agree) and the survey had overall 125 respondents.

• General Information of Respondents

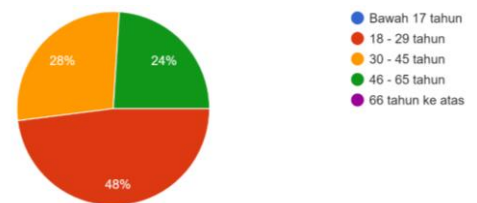
Question A1: What is your gender?



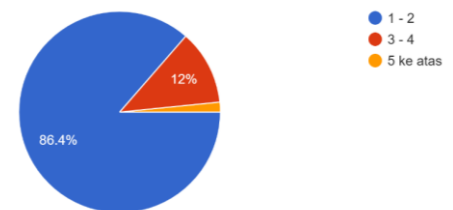
Question A2: What is your ethnic group?



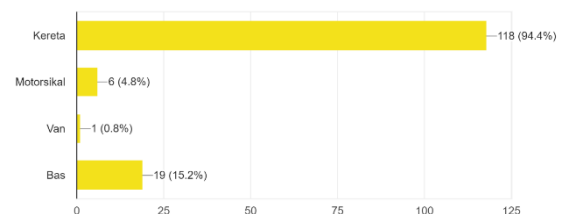
Question A3: What is your age group?



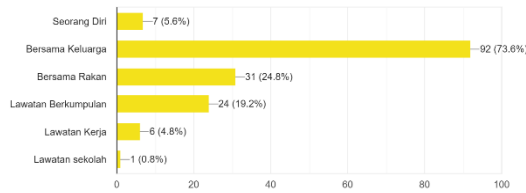
Question A4: How frequently you visited the apitourism facility?



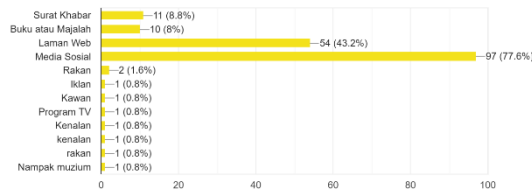
Question A5: What type of transportation used to visit the apitourism facility?



Question A6: With whom you visited the apitourism facility?

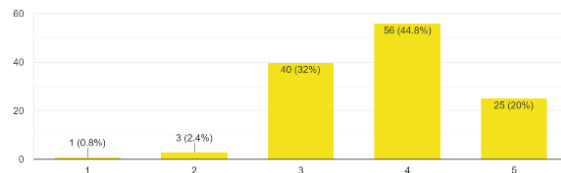


Question A8: Where do you get information related to apitourism industry?

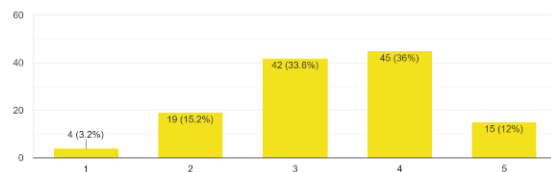


- Tourist Perception upon Existing Space at Apitourism Facility**

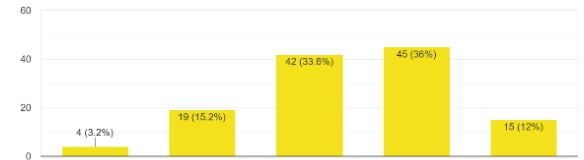
Question B1: Are you convenient to park vehicles in the site of the area provided by the apitourism center



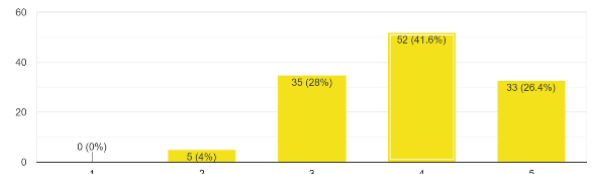
Question B2: OPEN SPACE is a space that has no walls and windows and uses natural lighting and ventilation. Are you comfortable in the OPEN SPACE of the apitourism facility?



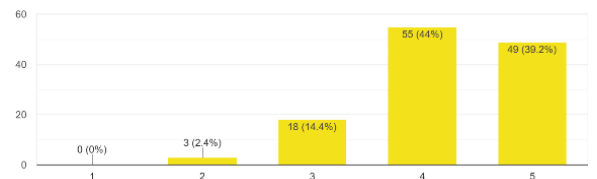
Question B3: INDOOR SPACE is a space surrounded by walls and windows and usually uses mechanical lighting and ventilation. Are you comfortable in the INDOOR SPACE of the apitourism facility?



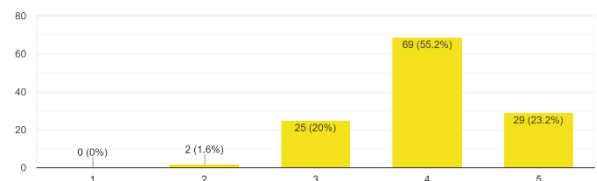
Question B4: HARDSCAPE is an artificial element such as lamp, gazebo, pavement and pergolas. Are you cozy and comfort with the quality of HARDSCAPE in apitourism facility?



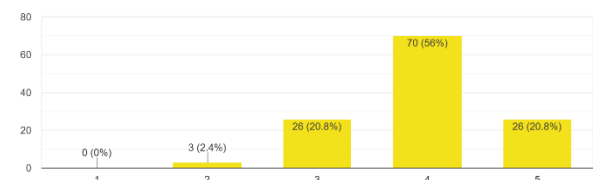
Question B5: SOFTSCAPE is a natural element such as rocks, canopy plant, floral and herbs. Are you cozy and comfort with the quality of SOFTSCAPE in apitourism facility?



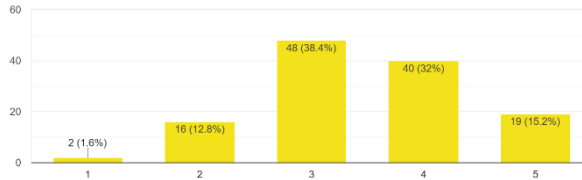
Question B6: Are you comfortable while in lounge and foyer provided by the apitourism facility?



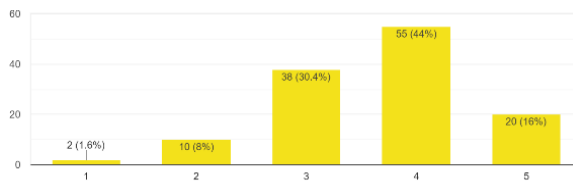
Question B7: Are you comfortable while using the toilets provide by the apitourism facility?



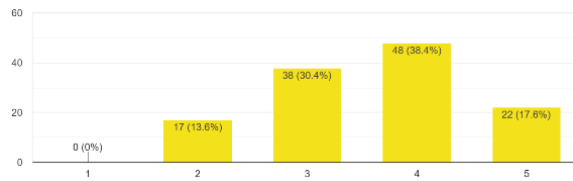
Question B8: Are you comfortable while entering the merchandise and shopping space at the apitourism facility?



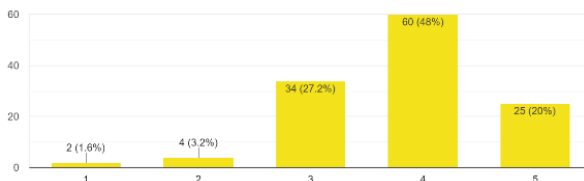
Question B9: Do you easily get foods, drinks or snack at the apitourism facility?



Question B10: Do you easily identified safety route sign if event of emergency happens at apitourism facility?

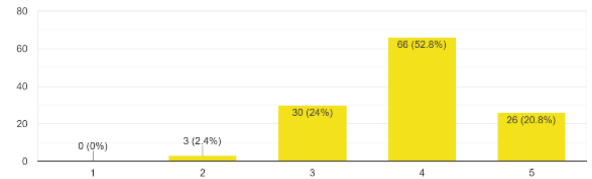


Question B11: Do you feel safe in term of personal and belonging when at open and indoor space?

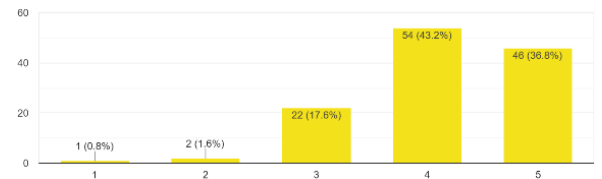


- Tourist Perception upon Experience at Apitourism Facility**

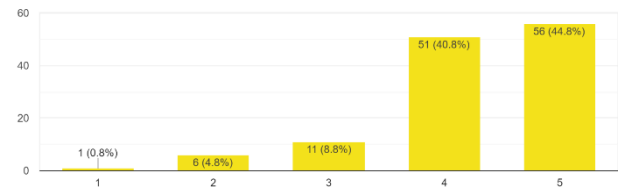
Question C1: Are you satisfied with the service and hospitality from the management during the visit?



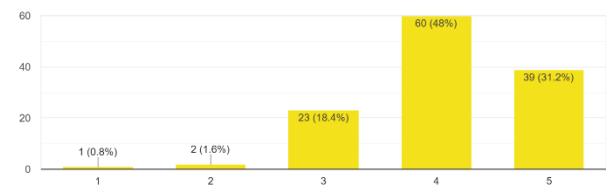
Question C2: Are you excited to enjoy the bee environment and actual bee colony up close during the visit?



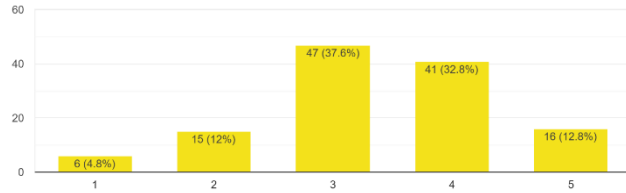
Question C3: Are you excited to watch up close the honey harvesting and production process during the visit?



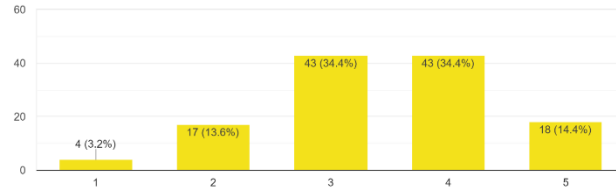
Question C4: Were you able to gain knowledge about the anatomy and structure of the bee colony during the visit?



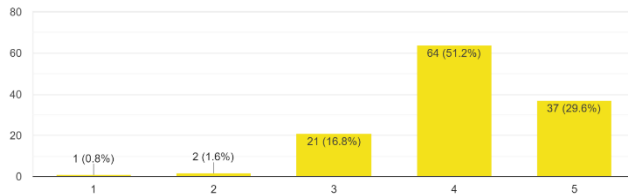
Question C5: Are you able to differentiate and acknowledge the bee species in Malaysia after the visit?



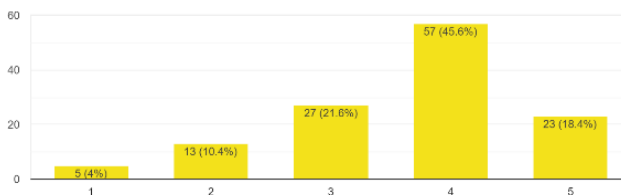
Question C6: Are you able to identify the suitable types of plant needed by the bee colony after the visit?



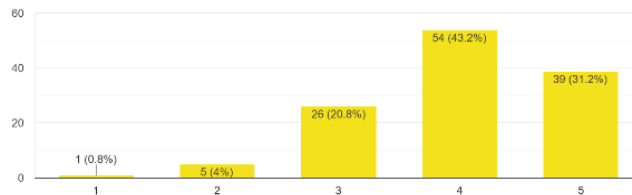
Question C7: Do you have better understanding about importance of bees as pollinating agents after the visit?



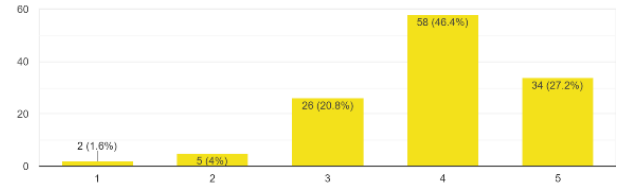
Question C8: Do you have better understanding how to differentiate between real honey and fake honey after the visit?



Question C9: Do you more interested to have healthy lifestyle by consuming bee-based wellness product after the visit?

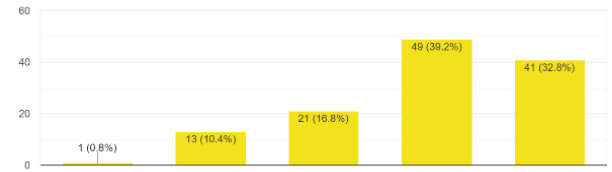


Question C10: Do you more interested to visit another apitourism facility after the visit?

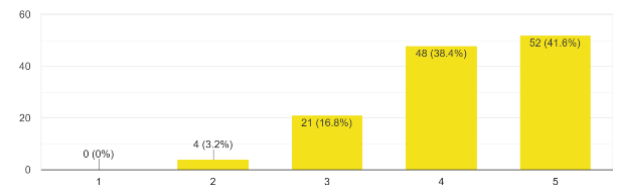


• Visitor Agreement on Spatial Typology for Apitourism Facility

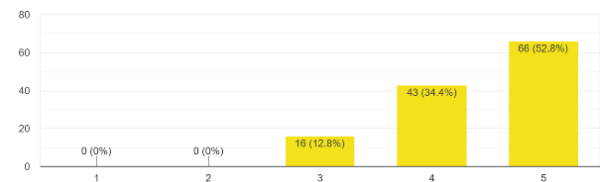
Question D1: the agreement to provide bee therapy spa



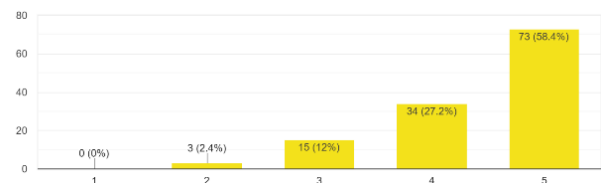
Question D2: the agreement to provide beehive design workshop



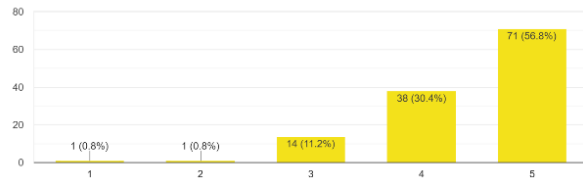
Question D3: the agreement to provide interactive cooking with honey workshop



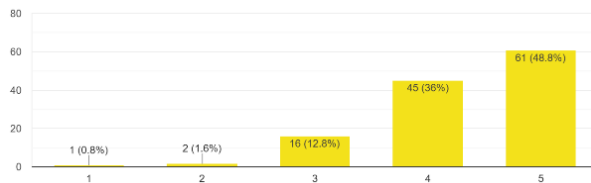
Question D4: the agreement to provide bee cinematic gallery



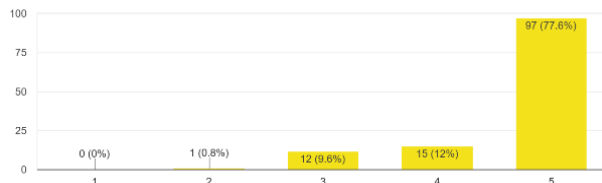
Question D5: the agreement to provide vertical landscape infrastructure



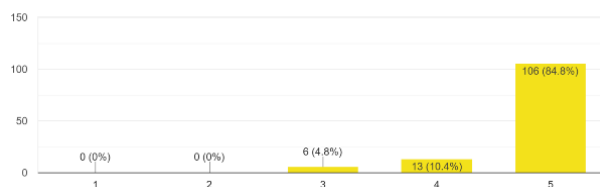
Question D6: the agreement to provide apiculture research facility



Question D7: the agreement to provide prayer space



Question D8: the agreement to provide disable-person space



4. DISCUSSION

The findings from this research can be analysed into three major components which general demographic of respondents, tourist perception upon existing space and experience at apitourism in Malaysia and agreement upon proposal typology for apitourism facility in Malaysia

- **General Demographic Information of Respondents**

Most of the respondents are female with 53.6 % and dominated by Malay ethnic. While most of the former visitor of apitourism in Malaysia come from young adult ranges from 19-29 years old. 86.4 % (108) respondents mostly visited apitourism facility in 1-2 times and majority of respondent prefer car as mode transportation to visit the facility. Furthermore, the data show local Malaysian more favourable having family members as tour-partner in apitourism facility which contribute the highest percentage (92, 73.6%). Meanwhile, most of the respondents get the information related to the apitourism industry from social media (97, 77.6%) and lowest source come from friends (6, 4.8%) then others such TV programmed (1, 0.8%) and advertisement (2, 1.6%).

- **Tourist Perception onto Space and Experience**

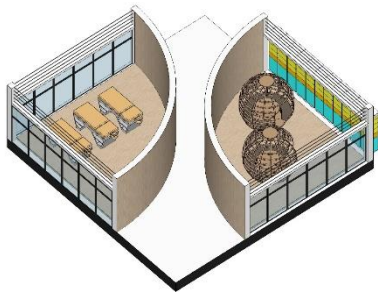
Over 50% of the respondent satisfy with both artificial elements in hardscape and natural element in softscape which show current apitourism facility in Malaysia already had good landscape design. Moreover, most of respondents agree (4) with the comfort level and ease level while entering merchandise and shop space also comfortable with open space provided in apitourism facility in Malaysia but less than 50% respondents agree that poor level of indoor space quality at the apitourism facility. 44% of respondents hardly identified the safety route sign if event of emergency happen which data prove that nearly half of apitourism facility in Malaysia still on marginal level of safety route identification.


Over 50% of the respondents enjoys the bee environment and actual bee colony up close during the visit also get to experience how honey harvesting process which prove majority apitourism facility given this opportunity to their customers. Furthermore, 80 respondents have better understanding how to differentiate between real and fake honey after visit apitourism in Malaysia by stated totally agree (5) and agree (4) but 36% respondents still low understanding about the issues which


everyone should grasp the knowledge because most honey stock in market nowadays are fake. Moreover, majority respondents cannot identify best plant for the bee colony and cannot differentiate its species which showed that most of apitourism facility in Malaysia have low interactive programme for visitors to grab the knowledge.

- Agreement upon Proposal Spatial Typology for Apitourism Facility in Malaysia**

This segment aims to determine the level of perception and thought of former visitor toward the typology of spaces for apitourism facility that has been addressed from literature research. Based on the findings from the literature research (secondary data), the author identified eight typologies of spaces including:

<p>Typology 1: Bee Therapy Space</p>  <p><i>Figure 5: Architectural Illustration of Bee Therapy Space (Source: Author)</i></p> <p>Overall, the majority of respondents agree and strongly agree that bee therapy spa can one beneficial space to promote healthy and wellness lifestyle to visitor.</p>
<p>Typology 2: Beehive Design Workshop</p>

 <p><i>Figure 5: Architectural Illustration Beehive Design Workshop (Source: Author)</i></p>
<p>Overall, respondents who stated strongly agree and agree significantly higher than those who voted disagree and neutral. In conclusion, it has been proven that beehive design workshop can be one of prominent spatial typology for provide knowledge and experience for visitor in apitourism facility.</p>

<p>Typology 3: Interactive Honey Cooking Workshop</p>  <p><i>Figure 5: Architectural Illustration of Interactive Honey Cooking Workshop (Source: Author)</i></p> <p>Overall, the numbers of participants who strongly agree and agree far higher than those who voted neutral, implying that an interactive cooking with honey workshop is required in spatial typology of apitourism facility in Malaysia.</p>
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Typology 4: Beehive Design Workshop

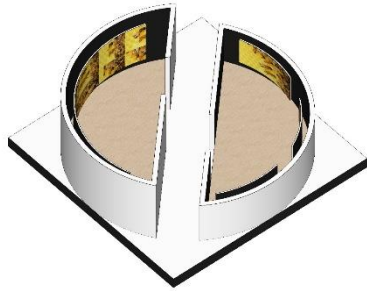


Figure 5: Architectural Illustration Bee Cinematic Galleria (Source: Author)

It was revealed that the respondents strongly agree that apitourism facility in Malaysia should have bee cinematic galleria as one of spatial typology in order to illustrate and deliver information about bee effectively also far more interactive with the aid of media technology.

Typology 5: Vertical Landscape Infrastructure

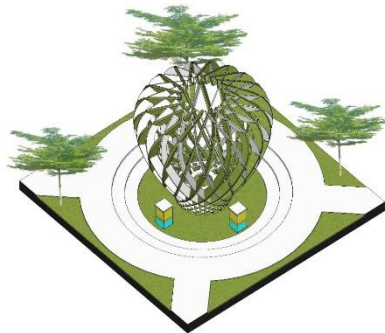


Figure 5: Architectural Illustration Vertical Landscape Infrastructure (Source: Author)

In conclusion, despite minor group disagree with the question D5, there are two-third of respondent which totally agree that apitourism facility in Malaysia should have vertical landscape infrastructure to enhance landscape quality for bee colony, at the same time will serve greater

interaction between bee environment and visitor.

Typology 6: Beehive Design Workshop



Figure 5: Architectural Illustration Apiculture Research Laboratory (Source: Author)

Overall, majority of the participants decide to have apiculture research facility as spatial typology within the apitourism facility in Malaysia.

Typology 7: Prayer Space



Figure 5: Architectural Illustration Prayer Space (Source: Author)

Overall, the numbers prove that majority of the respondents demand to have prayer space to ease them to perform sacred duty as believer during their trip while enjoys the experience at apitourism facility.

Typology 8: Disable-Person Space

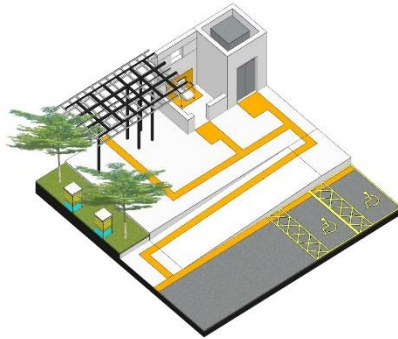


Figure 5: Architectural Illustration Disable-Person Space (Source: Author)

Overall, majority of the respondents demand to have disable-person space and utilities within the apitourism facility as one of spatial typology needed to serve better experience and satisfaction for disable visitor.

5. CONCLUSION

Overall, this study is a compendium of findings from an extensive assessment on the spatial typology needed for the apitourism facility in Malaysia which is based on perception of visitor onto space and experience offered by the current apitourism facility. The research's primary goal and objective were met by providing an in-depth grasp of the topic through literature study and a questionnaire survey on online platform.

- **Objective 1: To study the purpose and history of apitourism facility in Malaysia.**

The trend of apitourism always started with the similar scenario around the globe. It begins with traditional rural beekeeping, then experience extensive growth of beekeeping culture which develops into beekeeping industry and agriculture business over decade and apitourism emerges as combination of culture and commercial. Furthermore, to satisfy visitor and tourist that increases over a year, beekeeper always keep

focusing on improve their current facility to meet future demand. In Malaysia, sadly we did not have legal guidelines to establish our apitourism facility that meet the requirement to be apitourism centre that ensure optimum interaction between bee environment and visitor while have high level of security and imply basic universal design specially to cater disable-person utilities.

- **Objective 2: To analyse visitor perception toward apitourism facility in Malaysia within set of variables.**

The second objective of this study is to analyse the visitor perception by set of variables which is extracted from the major categories which is understanding background and purpose of apitourism facility, understanding user's behaviour and satisfaction in term of tourism aspect and study on establish apitourism facility programmes and typology. Then, the survey consists two part that collect data in term of visitor perception onto space and onto experience which later analysed to find out the level of satisfaction of visitor through their perception. There are less than 50% respondent agree to satisfy with the hardscape quality, toilet quality and cannot identified safety route easily. For the perception onto experience, there are less than 50% respondents failed to understand the suitable plant for bee colony and identify bee species even though had visited the apitourism facilities.

- **Objective 3: To initiate and determine spatial typology require for improve visitor experience and satisfaction toward apitourism facility.**

This chapter aims to conclude the finding to meet the third objectives of this study. Based on the result of the questionnaire survey which was responded by 125 people, majority respondents stated clearly that they strongly agree (scale of 5) with the model spatial typology described with exception on agreement to provide bee therapy spa, which majority voted agree (scale of 4). There are slightly number from the respondents voted as neutral (scale of 3), disagree (scale of 2) and

strongly disagree (scale of 1). As a result, the model can be concluded as recommended spatial typology for apitourism facility in Malaysia.

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