

Concept Study of Micro-Architectural Elements of Street Businesses in Pulau Tuba

(Kajian Konsep Elemen Seni Bina Mikro dalam Perniagaan Jalan di Pulau Tuba)

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ABSTRACT

The purpose of this paper is to identify the elements of street business microarchitecture (MCR) in rural areas, namely Tuba Island, Langkawi, and its significance in the local economy. The impact of Covid-19 leads to a trend of Malaysian youth who had previously migrated to the city are returning to the countryside. Hence, it encourages a better understanding of urban sustainability through classification, design, and intervention in rural areas of Malaysia using case studies from Tuba Island, Langkawi. This study uses a qualitative research approach and literature review, by recording the presence of active structure of MCR of the street businesses and the scenarios that occur in the specific area and identifies the type of microarchitecture classification based on previous studies. Interviews and observation approaches were implemented to obtain comprehensible information to gather data, which were then used in the analysis. This study finds that MCR units that are available at Pulau Tuba are mainly permanent and semi-permanent status and can be found on main roads and places of commercial activities with many visitors. MCR typoscope T8 are mostly restaurants and grocery stores, while T3, T4 and T5 are suitable for small island use as they are remote, easy to set up and ad-hoc but fixed setting.

Keywords: Micro architecture; street business; rural area

ABSTRAK

Tujuan kajian ini dilakukan adalah untuk mengenal pasti elemen seni bina mikro (SBM) terhadap perniagaan jalan di kawasan luar bandar iaitu di Pulau Tuba, Langkawi dan kepentingannya dalam memberansangkan ekonomi tempatan. Kesan Covid-19 telah membawa kepada perubahan yang mana belia di Malaysia yang sebelum ini berhijrah ke bandar telah kembali ke luar bandar. Ia menggalakkan kefahaman yang lebih baik tentang kelestarian bandar melalui klasifikasi, reka bentuk dan campur tangan di kawasan luar bandar di Malaysia melalui kajian kes dari Pulau Tuba, Langkawi. Kajian ini menggunakan pendekatan kajian kualitatif dan kajian literatur, iaitu dengan merekod kewujudan struktur aktif seni bina mikro pada peniaga jalanan dan senario yang berlaku di kawasan tertentu dan bagi mengenalpasti jenis seni bina mikro yang telah dijalankan. Pendekatan temu bual dan pemerhatian telah direkod untuk mendapatkan maklumat yang boleh difahami untuk mengumpul data, yang kemudiannya digunakan dalam analisa. Kajian ini mendapati bahawa unit seni bina mikro yang terdapat di Pulau Tuba kebanyakannya berstatus kekal dan separuh kekal dan mudah didapati di jalan utama dan tempat aktiviti komersial yang ramai pengunjung. SBM tiposkop T8 kebanyakannya adalah restoran dan kedai runcit, manakala T3, T4 dan T5 sesuai untuk kegunaan pulau-pulau kecil kerana ia bersifat mudah alih, senang untuk dipasang dan boleh dipasang dalam keadaan segera.

Kata kunci: Seni bina mikro; perniagaan jalan; luar bandar

INTRODUCTION

Society may misinterpret Micro-Architecture (MCR) concepts and meanings due to varying interpretations from diverse points of view. Although the word “MCR” has been used in the Western world since the late 1990s, it is still unwieldy to use there. The immediate demands of man at a given moment serve as the foundation for architecture. The term “micro” means “fine or tiny” in the Malay dictionary, *Kamus Dewan Bahasa dan Pustaka* (2005). According to the American Oxford Dictionary (2007), the Greek word “mai-krow”, which means little or small, is the root for the term micro. A micro-architecture is a tiny

structure with a specific purpose to address diverse problems in novel ways. Micro-architecture is defined as a kind of architecture that is physically compact, free from creative restraints, and operates in its own manner, said Richardson (2001). Lightweight and high-tech construction is one of MCR’s outstanding qualities, claims Horden (2005). According to Kaltenbach (2005), the term “micro-architecture” or “MCR” refers to a small-scale project that is capable of creatively resolving a variety of issues. He added that micro-architecture can create more avant-garde areas in the future while maintaining the standard of urban development history. A structure that is constructed to meet present demands is considered architecture, according to the father of modern architecture (Corbusier 1931).



FIGURE 1. Typical micro architecture street businesses units identified in Malaysia.

The two main categories of the function of street micro-architecture are the kind of commercial sector and public facilities (Tazilan 2012). Again, he asserted that there are several ways in which the business sector might be split, including food, the selling of everyday items, services for mending shoes, conventional medicine, the sale of mats, and others. Micro-architecture is a common feature of the environment in Malaysia. It is proven that street micro-architecture buildings like booths, tents, umbrellas, etc. are necessary for modern life because they are already incorporated into Malaysian street culture (Tazilan 2012). So, the micro-architecture is a small-scale structure with a particular purpose, is simple to use and

accessible, and has significant aesthetic value (Tazilan 2012).

MCR in specific refers to several tiny built-in structures that need to be emphasised for easier identification in towns and cities, including residential buildings, retail kiosks, urban amenities, and signages (Tazilan 2011). These can be viewed as smaller versions of separate outdoor constructions that have been slightly altered in a fine or fashionable style for a specific location. As (Tazilan 2022) once mentioned in the video series *Dr. Design*, the look of micro-architecture must be straightforward, need little upkeep, and serve a distinct purpose.

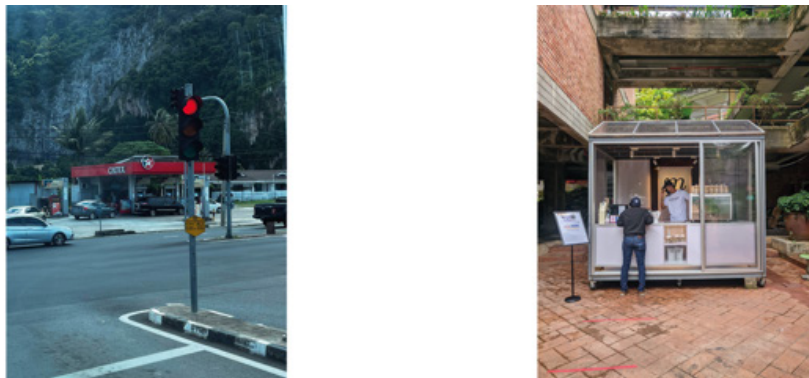


FIGURE 2. Left: Sample of a public facility, Right: Sample of commercial facility.

Micro-architecture in commercial sectors is usually focused on street businesses. The street economy includes stalls selling cendol, ais kepal, and nasi lemak. For a small group of people who are members of the B40 strata, rental groups, people who lost their jobs as a result of the Covid-19 pandemic, or people looking for extra money, the street economy is a shortcut (Ali 2021). Looking at it another way, the economic components of the city have been employed as a foundation for the quality of human existence to grow in accordance with the street habitat. The street business is also a place where people connect and socialise while conducting business or shopping (Ghapar et al. 2014). He added, the lifestyle, culture, and tradition of the local community reflect the marketplace's localness. This everyday practice fosters and strengthens a sense of community among the local community and market sellers.

In the post-pandemic phase of Covid-19, Malaysian youths who previously had migrated to the city are returning to the countryside (Khalid 2022). This trend should be welcomed by creating new economic opportunities in new sectors to help the youths generate a source of income for themselves. Rural youths should be encouraged to stay in their hometown and overcome various current challenges so that these areas can help drive Malaysia's next big growth.

This study's fieldwork was carried out on Malaysia's Langkawi Island. Langkawi is a tropical archipelago

consisted of 99 islands that have formed a unique natural geological heritage several hundred million years ago. The first Global Geopark in Southeast Asia and one of only 147 globally, Langkawi was given UNESCO Global Geopark designation in 2007. The Machinchang Cambrian Geoforest Park, Kilim Karst Geoforest Park, Dayang Bunting Marble Geoforest Park, and Kubang Badak BioGeo Trail make up the Langkawi UNESCO Global Geopark. According to the *Rancangan Kawasan Khas Pulau Tuba, Langkawi 2012-2017* (2012), Tuba Island is an island located in Langkawi, Kedah. The island is one of the 99 archipelagos surrounding Langkawi and is the third largest island after Langkawi Island and Dayang Bunting Island with an area of 1,763 hectares or 20 square kilometres of which 62.78% is forest, 27.54% is agriculture, 6.29% is built area, 2.02% is infrastructure and 1.37% is beach. The total population of the island is 1,800. There are 7 villages on Tuba Island. Below is the list of the 7 villages:

1. Kampung Pulau Tuba
2. Kampung Telok Bujur
3. Kampung Lubok Etok
4. Kampung Telok Berembang
5. Kampung Lubuk Chempedak
6. Kampung Bagan Asam
7. Kampung Bagan Pauh

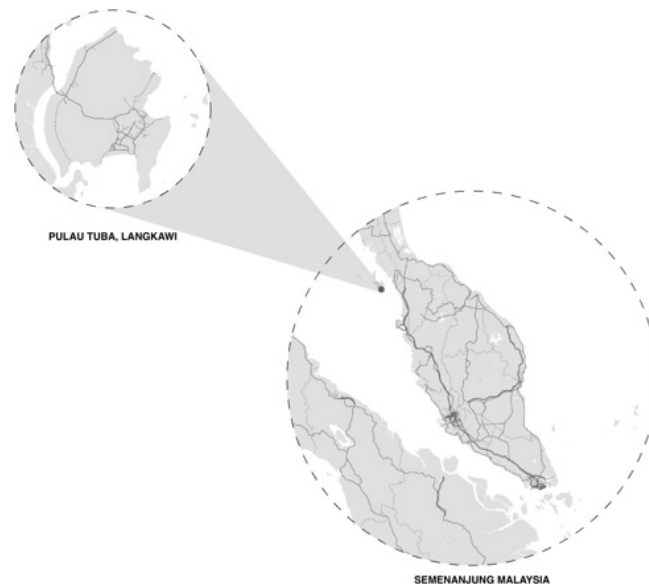


FIGURE 3. Location of Pulau Tuba.

The purpose of this paper is to identify the elements of street business micro architecture in rural areas, especially on Tuba Island, Langkawi, and its significance to the local economy.

LITERATURE REVIEW

A small-scaled architecture or better known as “micro” has contributed to enhancing humans' daily life in various

forms, functions, types, and designs in helping to complete our daily lives. The development of MCR especially on the roads play an important role in breathing the “life” of

a place, town or city, which will lead to cultural acceptance in the society (Tazilan 2012).

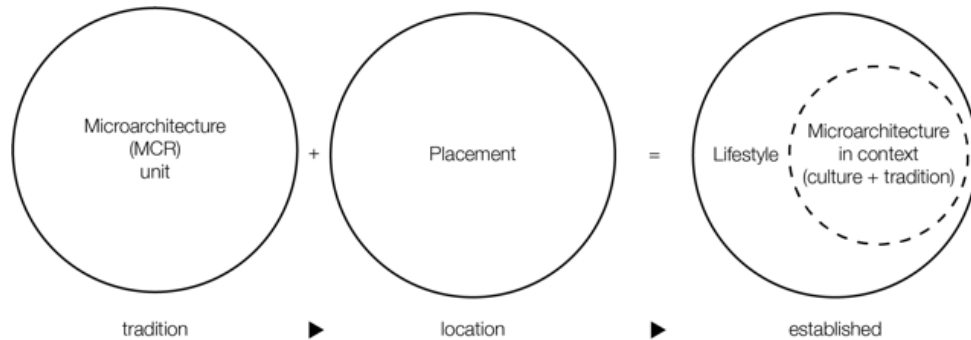


FIGURE 4. Society’s acceptance of MCR through its placement and cultural links
 Source: Modified from Tazilan (2011)

To show a clearer and precise function in the built environment, a smaller or micro-sized building is used in architecture. It is easy to develop a type of contact between human and the built environment to an interactive level when the size of a building is reduced to the human scale (Richardson 2001). When discussing the relationship between order and urban design, Alberti (1955) and Moughtin (2003) noted that the Vitruvian theory promotes scale reduction in an architectural feature that will cause a more efficient reaction in an architectural order;

[...] for everything must be reduced to exact measure, so that all the parts may correspond with one and another, the right with the left, the lower parts with the upper, with nothing interfering that may blemish either the order or the materials, but everything squared to exact angles and similar lines

(Alberti 1955; Moughtin 2003)

As a result, MCR should be viewed as more relevant than ever in terms of handling issues related to the placement of dense housing, street businesses and retail establishments, urban infrastructure, and space exploration (Figure 5).

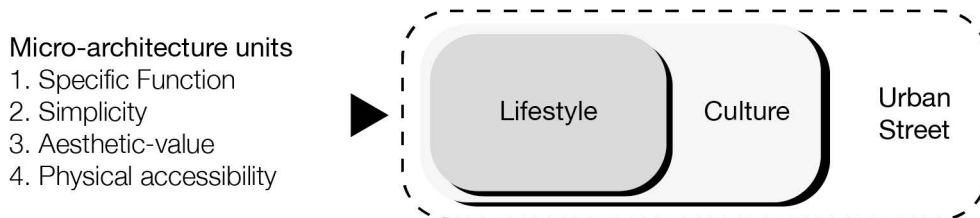


FIGURE 5. MCR units’ interaction with the society
 Source: Modified from Tazilan (2011)

MCR CLASSIFICATION

The classification is important, especially when it describes the physical characteristics that contribute to a particular culture, such as its roles, Figures, and distinctive traits. The survival of architectural usefulness is dependent on the employment of new models and fills with diverse purposes, as MCR represents the street image (Kelbaugh 1996). The phrase is also considered to be more current and applicable in writings, both now and in the future. Based on a study by Tazilan (2012) in Kuala Terengganu, Langkawi, Ipoh, Penang, and Taiping, there are eight main sorts or typologies of MCR units in Malaysian townships.

According to him, the classification can be divided into two categories of sector groups:-

1. Public facilities:
 - a. street furniture
 - b. public prayer mini halls
 - c. public restrooms/lavatories
 - d. wayfinding structures/signages
 - e. authority hubs/information kiosks
 - f. bus/taxi stands.
2. Retail units:
 - a. mobile units/booths/kiosks
 - b. eateries or snack units
 - c. commercial/retail hubs
 - d. sales or service kiosks

MCR TYPOSCAPES

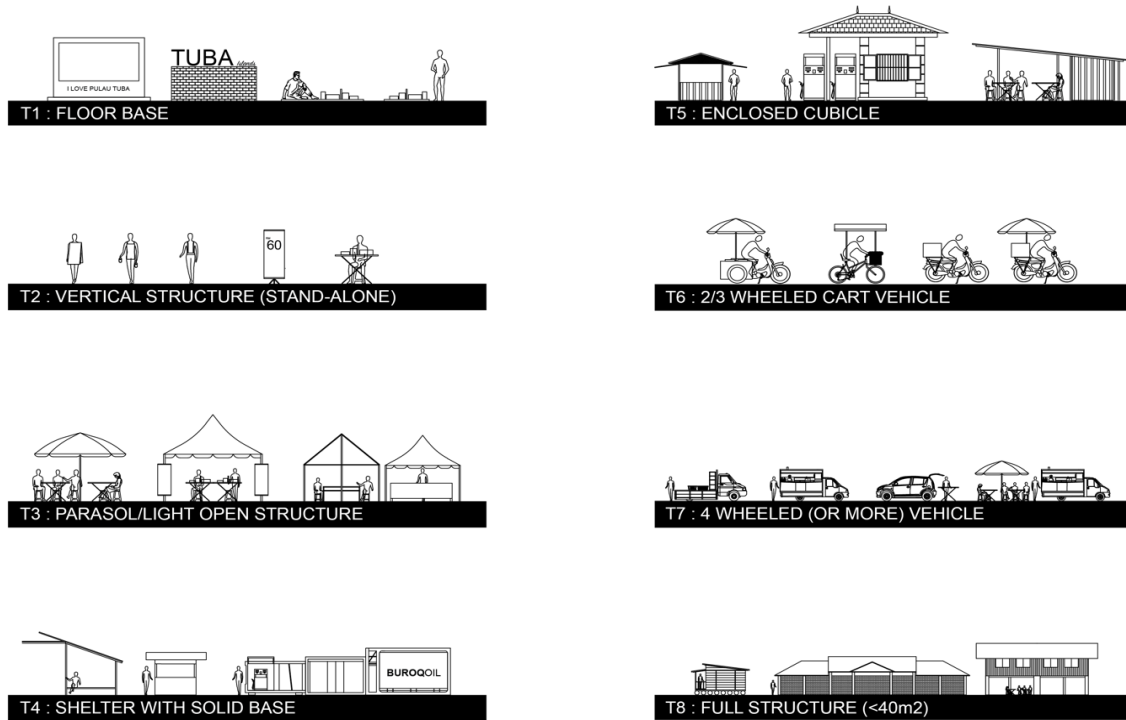


FIGURE 6. Eight different typoscope for street microarchitecture in rural areas in Malaysia
 Source: Modified from Tazilan (2011)

MCR units are based on the physical forms, shapes, spaces, and functions of both facility and retail units (Tazilan, 2011). The new classification of typoscapes (typology and landscape) on MCR is based on the thorough observation that, in the architectural built environment, archetypes are more significant than stereotypes. The parameter size for all MCR units is 36 m². MCR units have also been categorised as transitory units in terms of how they seem and how they use space. Brown (2003) predicted that while architecture will play a steady function, urban characterisation might have an impact on how it responds to and interacts with transit. As a result, Tazilan (2011) uses the terms free, semi-free, and permanent forms to describe the three subcategories in his observation. The following are MCR unit typoscope classifications according to studies done by Tazilan (2011, 2012):

- T1: floor base.
- T2: vertical structure.
- T3: parasol/light open structure.
- T4: shelter with solid base.
- T5: enclosed cubicle.
- T6: two-to-three-wheeled cart vehicle.
- T7: four-wheeled (or more) vehicle; and
- T8: Full architecture or building structure (<40m² base)

The MCR kinds are depicted in FIGURE 6 in retail sectors. MCR can be seen as a street's initiating agent when it is present. A unit of MCR would be simple to identify if it were placed in a precise and suitable position. This MCR typology, sometimes referred to as a component of the urban landscape symbiosis and identifies as "typoscope," plays a crucial role in urban social interventions and the built environment. Because MCR units are adaptable and reachable, pedestrians and visitors will be most interested in the commodities, public amenities, and services offered at those locations.

MCR STATUSCAPE

Site observations made on MCR units documented everyday human behaviours in their unique perception of status. The phrase "statuscape," which combines the words "status" and "landscape," refers to the context of urban street (Tazilan 2011). An established site or one that has been occupied for a month or more is referred to as a "particular" site. Below is a description of each of the three MCR statuscape types according to Tazilan (2011, 2012):

1. Free/Mobile: This refers to MCR units that are not at all connected to any facility. These units are not linked to or left at any one area or site for an extended period; instead, they can be anywhere within a week. They are more appropriately characterised as ad hoc placements or being in the street MCR statuscape series’ most flexible form. Examples include mobile hawker vans and municipal government offices on wheels.
2. Semi-free/fixed: These are possibly connected units to certain locations. They can stay in the same location for a week without becoming connected or staying at one location for an extended amount of time. Since they are available in the “knock-down” system, folded, wheeled, movable, or hoisted by a crane, they may be physically altered. Examples include the neighbourhoods’ regular street vendors and portable restrooms.
3. Fixed: This refers to MCR units that are set up location at a particular spot. They consistently dwell in one place for an extended period, usually three months or longer. Due to the units’ supposedly fixed physical appearance, their solid construction of metal frames is firmly fastened

to their sites, or because they are composed of concrete, bricks, etc., the statuscape site of these units is challenging to modify or relocate in the near term. Even though these units are transient in nature, the statuscape space gives the impression that the site ownership is practically “permanent.” Fixed-framed cubicles, phone booths, and public restrooms are a few examples.

Table 1 provides an illustration of a conceptual framework for the many linkages between space, authorization levels, and statuscape that are specifically found in Langkawi Geopark, and in Malaysia generally. They are described physically as well as in relation to the pertinent street space. The type of temporary ownership shown in the statuscape diagram illustrates a clear classification pertaining to the three different levels of urban street zones. Obtaining permission from the appropriate authorities to place an MCR unit nearby the selected spot is the present source of the difficulty. Due to the transient nature of street MCR units, nothing is definite. Since it is part of the public right of way, it lacks a distinct or definite border on the urban street.

TABLE 1. The relationship of MCR statuscape classification on Malaysian streets

Condition and type of MCR operation	Free (B)	Semi (S)	Fixed (T)
Physical characteristics	Mobile, modular, portable	Mobile, modular, portable	Situated, stable, portable
Street space zone	Five-foot way, pocket spaces, isolation		

(Source: Tazilan 2011,2012)

METHODOLOGY

Microarchitecture mapping in street businesses for this study requires observations of daily activities of the population and the scenarios that occur in specific area. This study uses a qualitative research approach to help researchers gather clear details by utilising observation and interview methods to obtain data, which are then evaluated based on Tazilan’s typology studies. This is due to lack of micro-architecture studies made in recent years. According to Yin (2014), case studies are also useful for dealing with descriptive and explanatory approaches that require in-depth analysis. Case studies are also appropriate because they yield more complete and detailed studies on single cases and understand the context of the urban environment (Bryman 2015; Shamsuddin 2011). The location selected as the research site for this study is located on Tuba Island in Langkawi.

RESULTS AND DISCUSSION

MCR units come in different varieties on Tuba Island. However, not all the units in Tazilan’s (2011) MCR typoscope are available on Tuba Island. To gather preliminary data, local activities were constantly monitored and observed over the course of three days. One of the conclusions reached is that the majority of MCR units are run by locals and are in locations with a high density of residents and visitors. Many MCR retail units are operated by the local Malay villagers. Many streets business MCR units are identified in 7 areas around Tuba Island. The following are the 7 areas that have been identified and labelled for this research: -



FIGURE 7: Micro-architecture and micro businesses identified in Pulau Tuba.

- L1: Jeti Pulau Tuba
- L2: Jeti Lama Pulau Tuba
- L3: Sawah Padi Pulau Tuba
- L4: Kampung Lubuk Etok

- L5: Kampung Teluk Berembang
- L6: Jalan Utama Pulau Tuba
- L7: Kampung Selat Bagan Nyior

DISTRIBUTION OF MCR TYPOSCAPE ON TUBA ISLAND

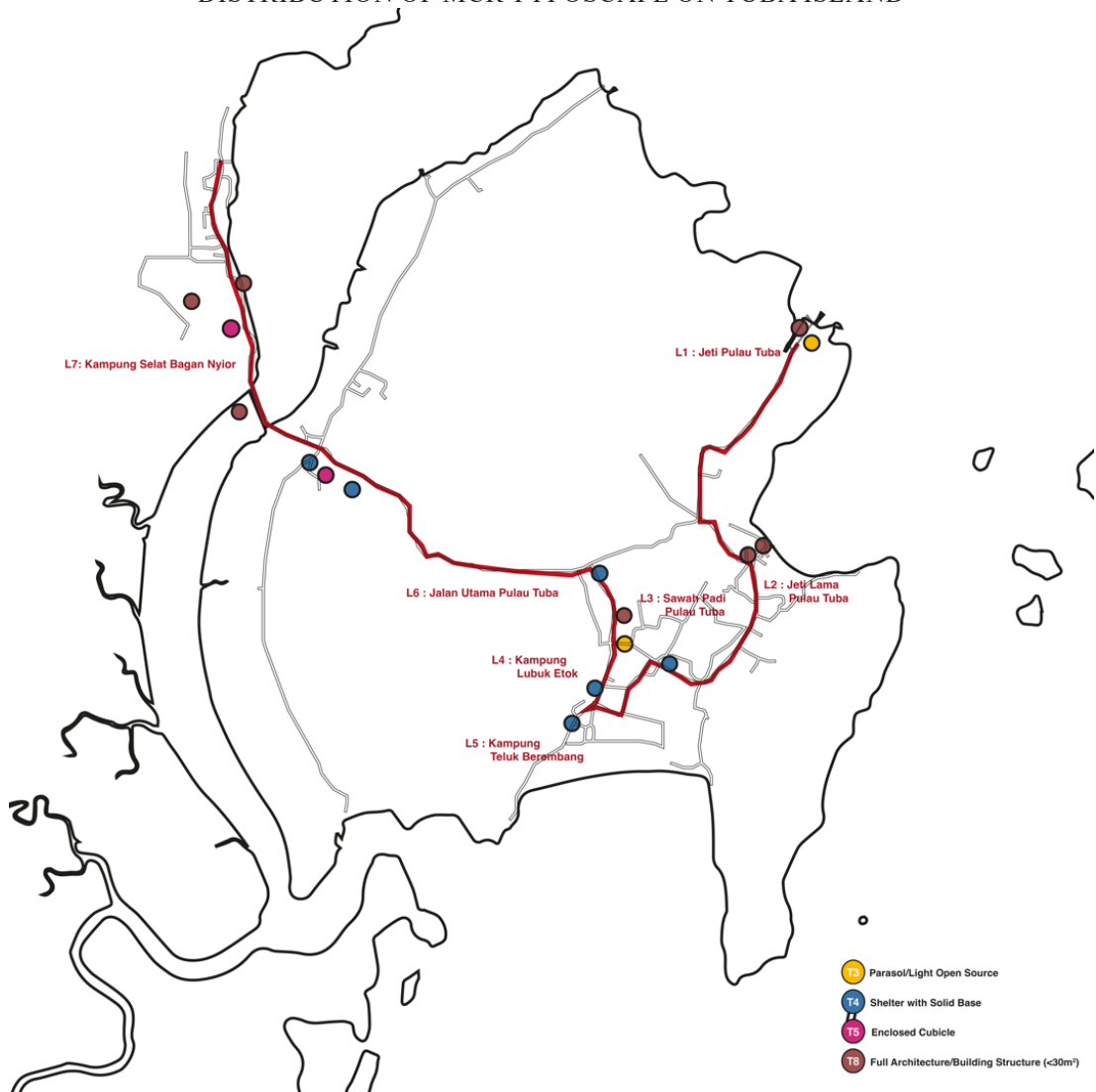


FIGURE 8. Demographic distribution and locations of street business MCR units on Tuba Island, Langkawi.

TABLE 2. Distribution of street businesses MCR typoscape on Tuba Island, Langkawi.

Typoscape	Retail Unit
T1	0
T2	0
T3	2
T4	6
T5	3
T6	0
T7	0
T8	7

TABLE 3. Distribution of street businesses MCR statuscape in Tuba Island, Langkawi.

Statuscape	Retail units
Free	0
Semi fixed	14
Fixed	2

Figure 8 shows the demographic distribution and locations of street business MCR units identified on Tuba Island, Langkawi. The following patterns can be identified:

1. MCR typoscape T3 can be found in only two units, namely weekly Friday marketplace and a satay stall.
2. Most of MCR units can be found on main road and places with many visitors and local community.
3. MCR units that are available here are mostly permanent and semi-permanent status.

4. MCR typoscape T6 and T7 are not visible on Tuba Island as it is not practical for small island use.

5. MCR typoscape T8 are mostly restaurants and grocery stores, which are important for the local community to shop for groceries nearby. Most of these units are classified as T8 due to the size of the micro-businesses' stall.

6. T3, T4 and T5 are suitable for small island use as they are remote, easy to setup and ad-hoc but fixed setting.



FIGURE 9. T3 MCR identified in Pulau Tuba



FIGURE 10. T4 MCR identified in Pulau Tuba



FIGURE 11. T5 MCR identified in Pulau Tuba



FIGURE 12. T8 MCR identified in Pulau Tuba

MCR AND ITS RELEVANCE IN THE LOCAL ECONOMY

MCR is not only easily sustained and built, but also simple to modify while offering a wide-ranging function since among its chief benefits is its small size. Moreover, MCR involves a lesser amount of material in contrast to a typical structure. For locals in a small island, the transitory units typoscape are more uncomplicated to assemble and affordable.

CONCLUSION

MCR is simple to maintain, quick to build, and easy to change while providing a broad range of functions since one of its primary advantages is its tiny size. Additionally, compared to the amount of material utilised in a typical structure, MCR requires less. This study captures and identifies MCR units on its typoscape and statuscape in Malaysia using instances from Tuba Island to provide a novel method for creating a micro business unit for a rural region. Additionally, it offers a fresh categorization analysis that may be useful for users, local government bodies, shops, and other stakeholders in creating better MCR design and development regulations.

The projection of smart-micro heritages in a place, like Tuba Island, might result from the identification of MCRs, which reveals the following:

1. Four separate classes make up the sustainable MCR typology of Tuba Island, each of which describes a distinctive street culture. The distribution of MCR units is mostly found on main roads, areas of commercial activities and populated area.
2. Numbers of temporary units of types of T3, T4 and T5 combined are higher than full building structure type (T8). It is proven that temporary units typoscape are easier to assemble and budget friendly for locals in a small island.
3. The numbers of T8 are higher than T4. This may be due to the value of land in rural areas are more affordable than it is in the city as the total area of T8 classification is less than 36m².
4. Most street business activities are run by the locals. 70% of their income is mostly obtained from the local community and 30% from tourists. During the recent pandemic, these street businesses income are disrupted.

While maintaining the capacity to incorporate concerns of passing importance, the new assessment method seeks to represent an ideal identification of MCR typoscape and statuscape as well as advancements toward higher sustainability and the establishment of a microbusiness unit in a rural area of Malaysia.

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