

Community-Centred Issue: Socio Economic Microarchitecture in Water Village Settlement at Gaya Island, Sabah

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The Malaysia twelfth plan, game-changer vii theme is multiplying growth of less developed states, especially Sabah and Sarawak, to reduce the development gap. An increasing unemployment rate is especially concerning for Sabah. According to Department of Statistics, Malaysia poverty rate in Sabah about 19.5% (2019) 26.3% (2020). Livelihood assets have been widely recognized in the recent development literature to have positive consequences on poverty eradication. Therefore, job opportunities in water settlements in Gaya Island are still worrying. Some parties in the Kota Kinabalu city area and outside among the residents in water settlement because of undocumented residents in Pulau Gaya. Based on literature review and site investigation, the number of people documented on Gaya Island is about 80%. Hence, this study needs to identify the small scale or cottage industries appropriate for the people of Gaya Island to generate income. This ethnographic will study is based on two objectives (i) What are the job opportunities that could be proposed; and (ii) How develop methods to manipulate the existing spaces. This research will formulate, (i) The best spatial configuration to micro economy on water settlement and (ii) Small scale industry that could contribute to income generation. The benefits of this research will help the government agency reduce the number of poverties in Malaysia. Future research will conduct qualitative study to look in-depth on the new strategy in order generate income in water settlement.

Keywords: *Water village residences, Socio-Economic Microarchitecture, Gaya Island Sabah, Malaysia*

1. INTRODUCTION

Since the end of the 1950's when Malaysia obtained independence, the country has experienced considerable economic growth and development. But the rate of poverty in Sabah has always been a topic of discussion on the national platform, and the rate of poverty is undeniably linked to the rate of unemployment. An increasing unemployment rate is especially concerning for Sabah. Game Changer VII: Multiplying Growth of Least Developed States, Specifically Sabah and Sarawak, to Close the Development Gap is one of the themes of the Twelfth Plan. Priority will be

given to Sabah, Sarawak, and Terengganu, with at least half of the Total Basic Development Expenditure allocated to them. According to the Ministry of Economic Affairs, poor families have monthly earnings less than the PLI level, which indicates that there are officially 24,700 poor households (or 0.4% of total households) in Malaysia as of 2016.

Claimed by United Nations 2020, individuals in the ocean will lose their livelihood more than any other country by 2050. Consequently, having a secure career may yet be a thing of the past. As a result, having a secure career becomes a thing of the past. Developing a self-creating prospect is

critical shortly. The younger generation's potential to relocate their area based on what they have learned will be commonplace; so, a continuous learning process is not an option. More great expertise is necessary to live in the future, and one must not work alone. Analysis done by Prof. Dr. Hans-Dieter Evers 2015 there are about 43,025 houses and 215,000 people living in water villages around Borneo.

Gaya Island is one of the cities of Kota Kinabalu's Water Villages. The majority of the island is covered by Sabah Parks, one of the networks designated as Tunku Abdul Rahman National Park. However, other people's homes are built on privately held land, village reserves, or squatter settlements (DBKK, 2013). Because of their status as urban squatters, the class fisherman in Kampung Pulau Gaya is particularly exposed to the prospect of being relocated to other regions, posing a conflict with the island's tourism industry, marine life conservation, and other factors (Md. Shah et al., 2015). Therefore, this study will identify the small scale or cottage industries that are appropriate for the people of Gaya Island to generate income.

1.1 Research Questions

Due to the concerns mentioned above, Gaya Island lacks substantially constant work possibilities. The research question in this study is:

1. What are microarchitecture recommendations for increasing opportunities for income generation among households at Lok Urai water village?

Case studies and interviews will focus on understanding the existing condition on-site and implementation methods. In conclusion, the sub-questions to be explored are as follows:

2. What are the job opportunities that could be proposed in order to generate income for for Water Village Settlement in Pulau Gaya?
3. How can existing places and locations be manipulated to assist the micro economy?

1.2 Research Objectives

1.2.1 Aim of the Research

To identify the small scale or cottage industries that is appropriate for the people of Pulau Gaya in order to generate income.

OBJECTIVE 1

To identify the different types of cottage industries or small scale industry that could contribute to income generation.

OBJECTIVE 2

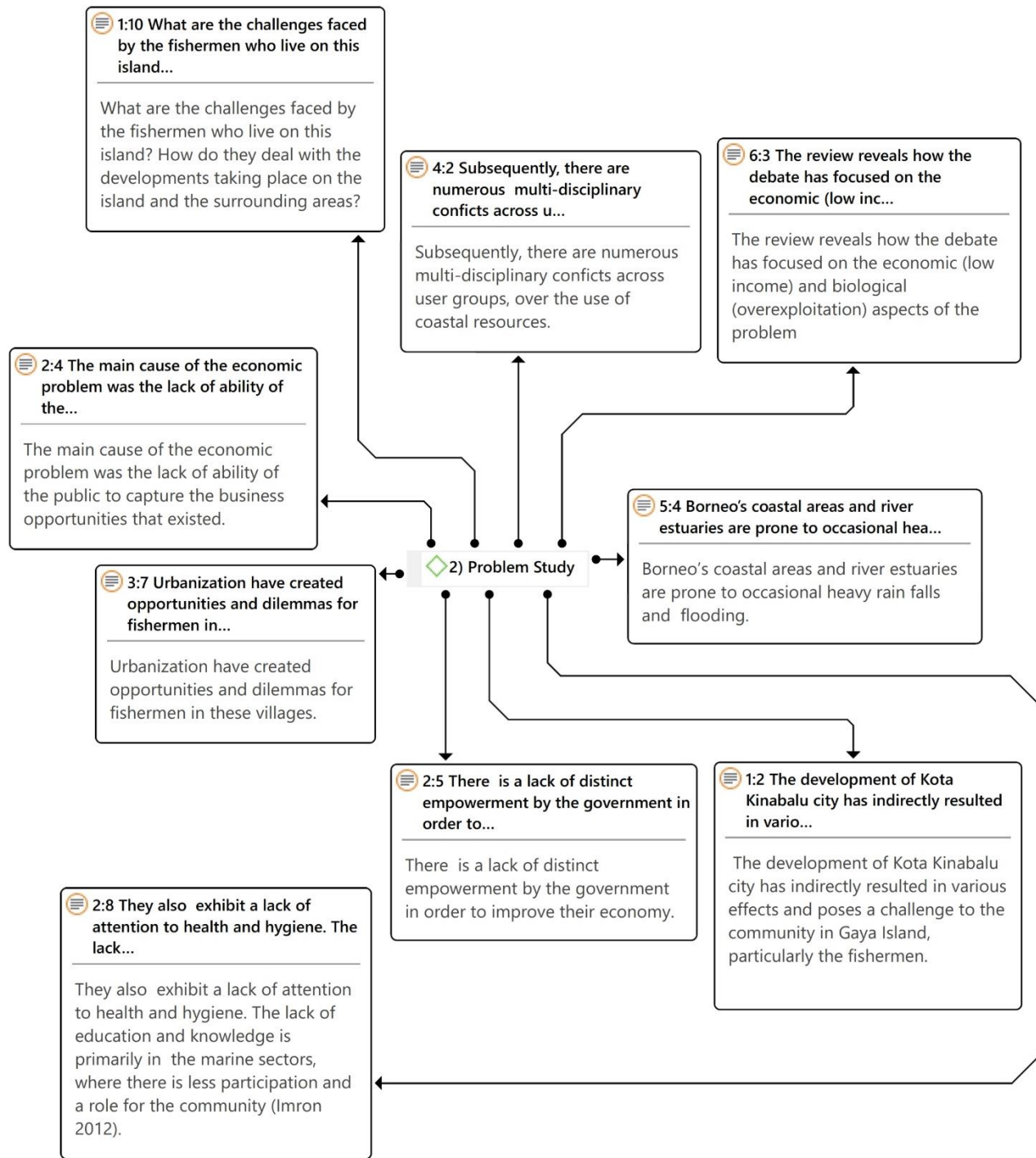
To understand the characteristics of Water village settlement.

OBJECTIVE 3

To explore the design strategies available for the economy-supported Microarchitecture that can be cooperated in Water village settlement.

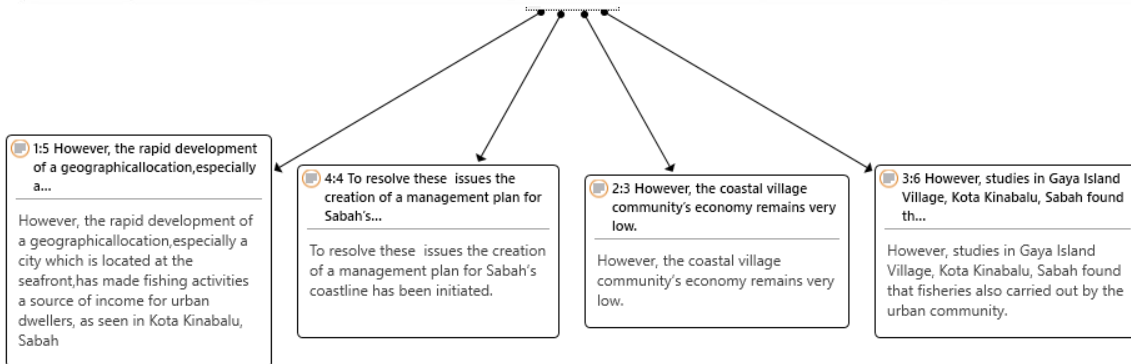
OBJECTIVE 4

To evaluate the essential socioeconomic aspects in Microarchitecture for Water Village Settlement in Gaya Island to increase opportunities for the villagers to generate income



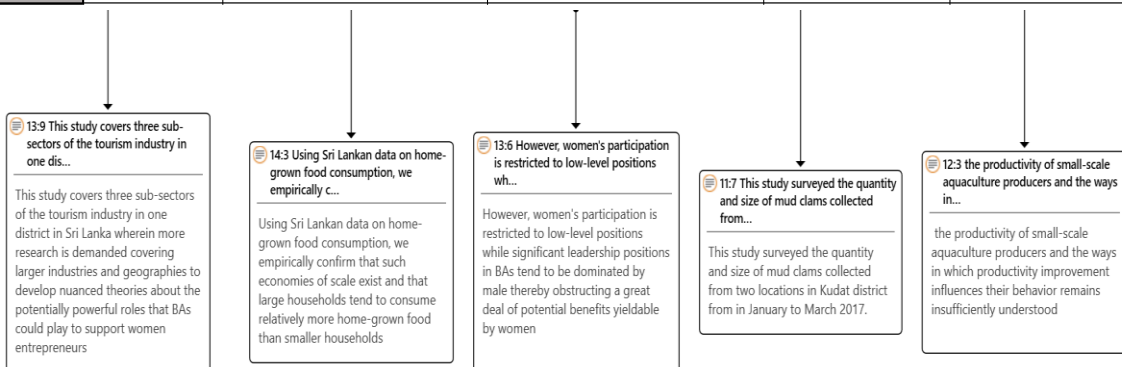
2. LITERATURE REVIEW

	Document	P.O.D	Methodology	Conclusion	Remarks
W A T E R S E T T L E M E N T	Shah (2016) - Urban Fishermen in Gaya Island, Kota Kinabalu, Sabah: The Challenges	Therefore, the practices of the fishing community that makes a living at sea has often been a subject of interest for social researchers, particularly anthropologists, whether in Asia or in the West. In Malaysia, at least, artisanal fishing activities are still viewed as rural activities	This paper which is based on an ethnographic study that used in-depth interviews and participant observation will analyse the challenges and experiences of the fishermen in Gaya Island Village in ensuring the survival of their fishing activities		However, this paper not focusing issue and conditions about water settlement.
	Rukin (2018) - Economic development as a way to fight against poverty in a coastal society	This study was conducted in order to determine the low economic level of coastal rural communities and its abundant natural resources (SDA).	The qualitative and phenomenological approach was used to obtain the findings about why society in coastal villages is economically low level.	If we apply integrated coastal resource management for the boosting of coastal development, then coastal development can be both optimal and sustainable (Etendy 2009).	Nonetheless, this paper only focus on construction in coastal village area but not focus on how to improve the infrastructure in water settlement.
	Mid Shah (2020) - Urbanization and Sustainability of Artisanal Fishing Activities in Gaya Island Village, Kota Kinabalu, Sabah	All of these provide income stability to the fishing household in Gaya Island Village but at the same time invokes the issue of uncertainties in fisheries economic activity through tourism development and conservation.	This ethnographic study is based on two objectives (i) to discuss the impact of urbanization on fishermen economic life; and (ii) to describe factors affecting the sustainability of fishing activities in urban areas.	The study found that urbanization open opportunities to the involvement of non-fishery employment among the fishing households, increased education awareness, fishermen engaged in part-time jobs, urban wage-earner and fixed income as well as enjoying urban facilities.	Despite, writer just mentioned about economic activities in Gaya Island. My study focus on the architecture condition that could be apply economy-supported microarchitecture
	Jakobsen (2007) - Sabah shoreline management plan (Borneo, Malaysia): Ecosystems and pollution	Understanding of the physical, chemical and biological processes involved as well as the dynamics of the integrated processes and a holistic impact assessment is also required.	A baseline was established from historical investigations, data collection and using a combination of visual inspections and photos		Notwithstanding, author discuss about management of the coastline around sabah.
	Evers (2015) - Kampung air: Water settlements on the island of Borneo		To do so numerical models were used to integrate available information and knowledge and to hind-cast and now-cast conditions and predict the consequences of different development scenarios		However, this paper only focus land size and environment issues.
	Bené (2003) - When fishery rhymes with poverty: A first step beyond the old paradigm on poverty	Incorporation of the recent research on poverty helps to show how socio-institutional mechanisms governing people's access to fisheries resources - rather than the resources themselves - play such a critical role in vulnerability to poverty	Using remote sensing data we measure the extent of water villages and estimate their number of households and inhabitants.		However, Author only mentioned about the economic for low income group in rural area.



M I C R O A R C H I T E C T U R E				
Document	P.O.D	Methodology	Conclusion	Remarks
M. Tazlian (2008) - Sustainable design elements for urban street micro-architecture in Malaysia	In this paper a series of street investigation of human behaviour within the retail built environment projected a unique result on how formal and informal street space is cultured.	Base on current phenomenology research studied, it gives a better justification on sustainable elements approach on street microarchitecture in Malaysia	The key to achieving an ideal and sustainable design is to take into consideration the factors of design, culture and local climate. Generally, the best sustainable design elements should accommodate functional, economical, flexibility and clearly identified non-decorative elements. Additionally, Malaysian microarchitecture sustainability needs to consider its tropical climate and placement within the pedestrian urban street space.	However, this paper only highlight on how successful street microarchitecture by understand small space in urban street.
Tazlian (2012) - Identifying microarchitecture for sustainable design in Malaysia	The paper presents a new approach to sustainability by capturing the dynamic assessment and identification of MCR and its typescape in Malaysia.	Investigates empirically selected sites in Malaysia to understand the MCR typological uses. With findings from case studies, it follows a systematic approach in developing a conceptual classification model for MCR as an urban ecosystem to understand its structure, function, and metabolism patterns towards sustainability	It also presents a new practical classification analysis that should be of interest to users, the local authority, retailers, pedestrians, and stakeholders to develop better policies for the future.	The paper suggested a better way small-scale and portable architecture in Malaysia by understand structure, function and metabolism pattern.
Zalilna Shahrul Bt Taib (2017) - Urban Parks (Up) for All-Barrier Free (Bf) At Micro Architecture (Ma)	is the importance of urban nature for citizens' well-being and sustainability of the city they inhabit.	The study was qualitative in nature. Case study approach on park environments and micro architectural was adopted. Used site studies, field observations, randomly interviews with the officers in charge and professionals of planners, designers and management were conducted. Direct interviews with the people were conducted during the field observation.	MA units are always important as the needs and demands (accessibility) of diverse urban population members in the public spaces, to satisfy the safety of diverse user needs and as many people as possible.	This study emphasised the importance of barrier-free design on Micro Architecture units in Urban Parks since visitors are frequently confronted with issues of accessibility and safety. The research was qualitative. According to the author, microarchitecture (MA) is defined as a small-scale structure with distinct characteristics, and the findings must be particular and unambiguous. Because MA is a singular, individual "support unit" and operates as a medium of specialised activity, they are linked to human social life as public space facilities and street sellers. Microarchitecture encompasses tiny, simple, lightweight, portable, temporary, Etc.

	Document	P.O.D	Methodology	Conclusion	Remarks
E C O N O M Y - S U P P O R T E D M I C R O A R C H I T E C T U R E	Hamdan (2019) - Marudu bay community-based geloina spp. aquaculture management: Enhancing sustainable consumption, livelihood and food security	This study found that the outer mud clam shell size collected in Kampung Kopunadan is larger than the wild type from Kimihang.	the surveys and interviews, it is discovered that the majority of locals in Kimihang prefer to consume small clams while Kopunadan locals prefer large ones	Collectors should be encouraged to practise sustainable harvesting management by collecting large clams or venture into aquaculture.	However, the author only discusses the economy and issues with the fisheries department. My study will focus on what economy can be applied in water settlement and the requirement to do blue economy activities that can suit the cottage industry.
	Dorji (2021) - Productivity improvement to sustain small-scale fish production in developing countries: The case of Bhutan	We also found that Bhutan's current aggregate output of farmed fish could be increased by 63% by enabling farmers to produce more efficiently using existing pond sizes and production technologies	Based on survey data of 202 fish farmers in Bhutan, this study examined how productivity improvement impacts likelihood of exiting small-scale fish production. Data envelopment analysis was used to compute a slacks-based measure of efficiency as an estimate of productivity	Our findings suggest that productivity improvement has substantial potential to be employed as a policy instrument to reduce the likelihood of farmers exiting small-scale aquaculture and simultaneously increase the aggregate output of farmed fish.	Despite, this paper only focus on fish production in bhutan not in water settlement.
	Handaragama (2021) - Participation of women in Business Associations: A case of Small-Scale Tourism Enterprises in Sri Lanka	Determined to overcome the challenges, women entrepreneurs join BAs thus gaining access to business resources such as financial, information and connections. We recommend that BAs promote women across the entire hierarchy of organization making BAs more relevant to women members who are in greater need of its services.	A questionnaire survey among 390 respondents (195 women, 195 men) was conducted aiming to understand the profile of entrepreneurs. Employing 24 in-depth interviews (12 women, 12 men), a further investigation was taken to ascertain the underlying reasons of their decisions in business and family	Further research is required to further analyze how to promote women's leadership in BAs. Since the study was done before Covid-19 pandemic, gender impact of the pandemic could not be integrated.	Nonetheless, this paper is about empowering women entrepreneurs through tourism. Author did not mention about the method that is applied in order to generate income through architecture. For example size requirement, space planning and etc.
	Jayasinghe (2017) - The power of the vegetable patch: How home-grown food helps large rural households achieve economies of scale & escape poverty	The magnitude of these scale economies are found to be larger than those in market purchased food, but smaller than those found in housing expenditure	Using Sri Lankan data on home-grown food consumption		This paper discussed about tourism industry in one district of Sri Lanka but the author did not mention about the process of executing it. My study will focus about how to generate income from home in water settlement
	Avgoustaki (2020) - How energy innovation in indoor vertical farming can improve food security, sustainability, and food safety?			This way, the owners under a multi-value business model will create the opportunity to the vertical farm owners not only to improve their production but at the same time absorb inexpensive electricity offered, by creating an additional profit mechanism (multiple revenue streams) under such an approach by entering into contracts with companies in a utility electric region	The author focus on business model about farming activities that something not related to my study focusing on cottage industry or small scale bussiness.



2.1 Water village settlement at Pulau Gaya

This section discusses Gaya Island's challenges and living circumstances. All the literary studies in this area make it simpler to grasp the current condition at the water village, specifically kampong Lok Urai and the others neighboring. Most Bajau Ubian, per Haliza M.S. (2011) Ubian, Samah, Samah/Sama Sulawesi, Simunul, Samal, Bajau Banadan, Tando Bas, Ungus Matata, Tolen, Palao, Tabawan, Banguingui, and Sikubung are Bajau subgroups on Gaya Island. Muslims from the Philippines sailed to Gaya in the 19th century. Malays, Bisaya, Kagayan, Rungus, Chinese, Suluks, Ubians, and other Filipinos reside among the Bajau in 11 settlements on Gaya Island, according to Jalihah Md Shah et al (2016). Gaya Island, the biggest of the five-island Tuanku Abdul Rahman (TAR) Marine Park, is located 10 minutes off the coast of Kota Kinabalu, Sabah's capital.

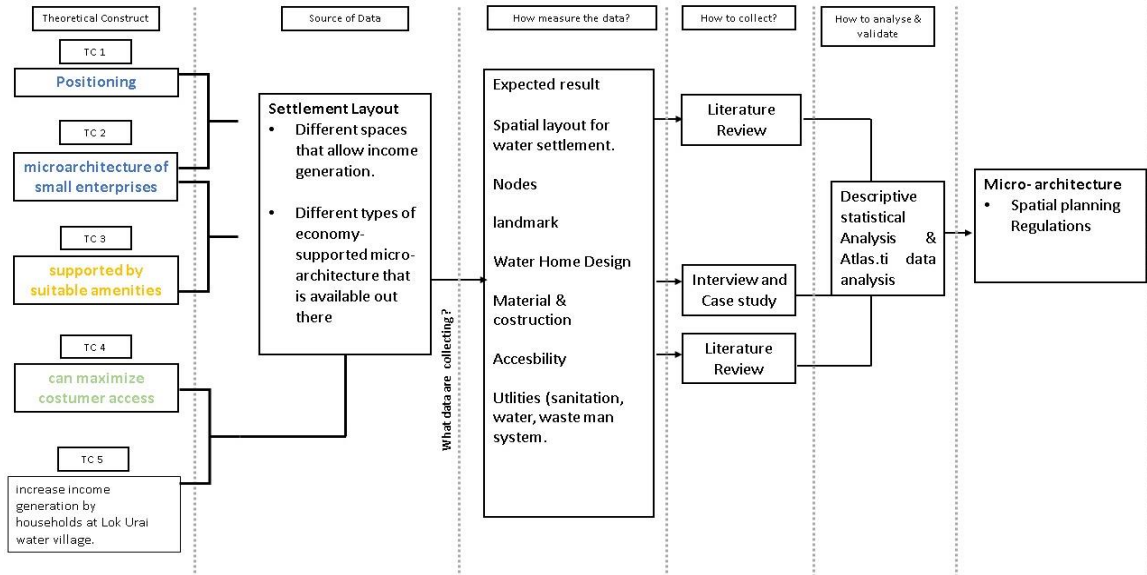
Gaya Island has premium beach resorts, marine park resources, tourism, and coastal activities including diving, snorkeling, island hopping, and deep-sea fishing (Said 2011). Gaya Island is known for its beauty and location. Given their close proximity to KK, the residents of Gaya provide the city with a supply of cheap labor (Said 2011). The vast majority of Gaya's residents lack formal education beyond a basic primary level and thus work as laborers selling at the eateries and outdoor markets or in other unskilled jobs. Their main sources of supplementary income derive from fishing and harvesting marine resources such as sea cucumber, clams, shells, and others, as well as boat making and boat transport services. Others work at the hotels on the other side of the island. Most adult women are homemakers that do mat weaving and craft-making from shells and sea produce. Many sell their products at Tamu (farmer's markets) or the famous Pilipino market in Kota Kinabalu.

For Gaya's young people, employment opportunities outside of fishing are limited on the Island, encouraging them to leave their villages to look for jobs outside (Said 2011). Bajau people are the second largest indigenous people in Sabah. They are known to originally sail across from the Philippines to settle along the coast of Sabah (<http://en.wikipedia.org/wiki/Bajau>). Gaya's fishing villages sit along the Island's beachfront. Their houses are traditional wooden homes built on pillars erected on the ocean floor. It is common for immediate and extended families to stay together in one house, which can result in more than seven people living together (Said 2011). The placement of residences with various docks

in the South China Sea promotes fishing and travel to the mainland. Water taxis between the island and Kota Kinabalu are frequent and represent mainland workers' primary mobility means (Jalihah et al 2016). From here, I can understand jetty and dock are the main gate for the section in every village.

The economy and poverty are two links that are always connected. The low level of the economy of a society leads to high levels of poverty. (Rukin et al. 2018). The involvement of fishing households in the non-fisheries economy can stabilize household income, but at the same time raise concerns about the continuity of fishing activities that were inherited from previous generations (Jalihah Md 2020). Fishers participate in marine fishing. According to Wan Hashim (1980), full-time fishermen spend at least 90 days a year at sea. In Malaysia, the fishing community is also known as the coastal community (Nor Hayati, 2010; Ahmad Zubir & Abd. Rahim, 2016) and the estuary community (Nor Hayati, 2017). The fish and collect marine resources in Zone A, which is 0-5 nautical miles from the coastline. River fishing also occurs (Jalihah, 2015; Mohd Lizal, 2020). Acheson (1981) says the fishing population lives in groups along the sea or river and relies on marine resources for

3. CONCEPTUAL FRAMEWORK



2.2 Microarchitecture

This section describes income-generating kinds, techniques, and strategies. These approaches, methods, tactics, or solutions are the best for generating income for Lok Urai water village households. Understanding the economy can support microarchitecture. Social, cultural, and political relationships and value systems are all intertwined in business, producing the economic system practiced by society. According to Wan Mohd Ghazali et al. (1988).

The homestay program is a rural tourism concept that involves travelers staying, eating, and being entertained by people (Jabil Mapjabil, et al., 2011). This product emphasizes "lifestyle" or experience-based tourism. This homestay program aims to address the requirements of the village residents and tourists (Harhamsah, et al. 2021) Unstructured (informal) human settlements are usually defined as dense settlements comprising communities housed in self-constructed shelters under conditions of informal or traditional land tenure (Acqua, et al. 2006). With the location of the house in the village of Lok Urai informally changing activities directly. If you look at and understand the house's position, sometimes the jetty's arrangement is the axis of one position. The sand factor in the Lok Urai area is also why the arrangement of houses there does not follow the grid. House can be categorized as a

human-made structure. In this process, enhancement, band combination, and band ratio techniques were applied to detect the house structure from the satellite image. Different types of enhancement such as root, adaptive, linear, equal, and infrequency were applied to the image to enhance the image for further analysis. According to Karishma et al., (2008), one of the criteria of informal settlement is higher density. Besides, the informal settlement lacks basic services, inadequate building structures, and overcrowding. Informal settlement using the technique used managed to count about 1036 houses for three areas are Kg. Pulau Gaya, Kg. Pondo and Kg. Lubuk Urai (Asmat, A et al. 2012). A group or community economy is excellent because, from my observation, I can see that the community there very much emphasizes the spirit of group living. If you look at some of them are close family members and help each other. The Typology of Community Involvement by Pretty (1995) in development projects can be used to distinguish degrees and types of involvement (Cornwall, 2008) and discuss and understand community involvement in development.

Jalihah Md et al. (2021) program or economic activity that wants to be carried out must understand the landscape of human life there. Because some of them there do not feel comfortable not confident with the idea they want to do, their knowledge is underestimated. This theory is expressed in a study by the reluctance of communities to be involved in the development

process has been identified by Cornwell (2008). Hossain (2005) highlighted poor household. Most of the low-income families spend their incomes to fulfil their households' basic needs. Most studies find that a large portion of poor households' incomes is spent on food and shelter, and a tiny part of poor households' incomes is spent on clothing, medicine, education and other necessities. Therefore, based on Hossain (2005), my study will propose the type of spaces and conditions available in an economy supported Micro-architecture. Hossain (2005) highlighted poor household also survive and sustain themselves by adopting various strategies to diversify their incomes. This is done in order to stabilize their income and increase their purchasing power all year round. However, due to limited skills and capitals, poor households are compelled to strategies that enable them to survive but not to improve their welfare in the long run.

Jaiyebo (2003) highlighted in Nigeria, women choose supplementary occupations to sustain the households' basic needs. The study also finds that the most preferred additional career is trading activity such as selling snacks, soft drinks, and fried beanballs (ibid). They find that trading is convenient to ensure they have cash in hand most of the time. Scarborough & Zimmerer, (2000) and Duncan, (1991) highlighted on Home-based Business (HBB) is one of the diversities in entrepreneurship. Motivation in that direction between men and women is the same, i.e., producing a source of income, being self-sufficient, achieving something, practising existing skills and abilities, or obtaining job satisfaction. Next, Stanger (2000) & (Wehrell & Fullerton, 1994) highlighted that definition of HBB is a home-based business with the owner who supplies the product or service from the house. The definition of HBB is like stated above are viewed from the business location. Definition of HBB based on location business is a definition that many researchers in this field have always used. Although based on this literature. I am able to focus on the different methods and strategies that the Home-based business (HBB) is operated and how this may be applied in order to generate income for the b40 household

The Home-Based Business articles are mostly through foreign articles from foreign parties. It is quite difficult to obtain research articles regarding the Home-Based Business in Malaysia. Unfortunately, such articles are

minimal, and in the context of research, practically no studies can describe and have complete information about HBB in Low-cost, high-rise dwellings. In addition, no one can show a distinctive feature of HBB in Malaysia even though we know that it contributes a lot to the socio-economy of the people and the country, especially people in fast-paced cities who need additional income to help their families. Thus, changing the income group. According to Mitchell, C, E. Oakley, R, L. (2018) as a result of the internet, there has been and emerging type of small businesses and microenterprises.

Due to this growth of a new business segment of small businesses and microenterprises, websites have made it possible for these new businesses to promote themselves online. One of the famous websites is Etsy. This is a website that caters to personalised, handmade and made to order products. It is a small niche but it is reported to facilitate \$2.39 billion in merchandise sales by supporting 1.7 million of active sellers and 26.1 million in active buyers. In 2015, Amazon also launched a new website under Handmade. Therefore, this could be a potential income generator for the B40 household. Based on investigations made by Reuschke, D. Mason, Colin. (2020). In order to achieve an economic scale of consumption, the household could start their homegrown patch which will allow the household to consume or either generate income from the homegrown produce.

Based on research done by George, A. (2020) there is a further need for vertical farming as the growing aging population in the cities are increasing and there are opportunities that could be taken for the growing demand. Avgoutaki, D, D. Xydis, G (2020) talks about the advantages of having a home grown produce or a vertical farming as it is able to produce high-quality and virus-free products can that be locally distributed. This creates opportunities and such activities also contributes to saving millions of tons of CO2 emissions. Based on these literature review, this could be one of the options that can be opted by the B40 household in order to generate more income.

Although small-scale aquaculture literature focuses primarily on direct benefits derived from small-scale, semi-subsistence fish farming by its producers, the SME narrative infers that a large part of aquaculture's contribution to poverty reduction is indirect; resulting from business opportunities and employment created both on the farm and off-farm. In agriculture and development economics, rural growth links are an

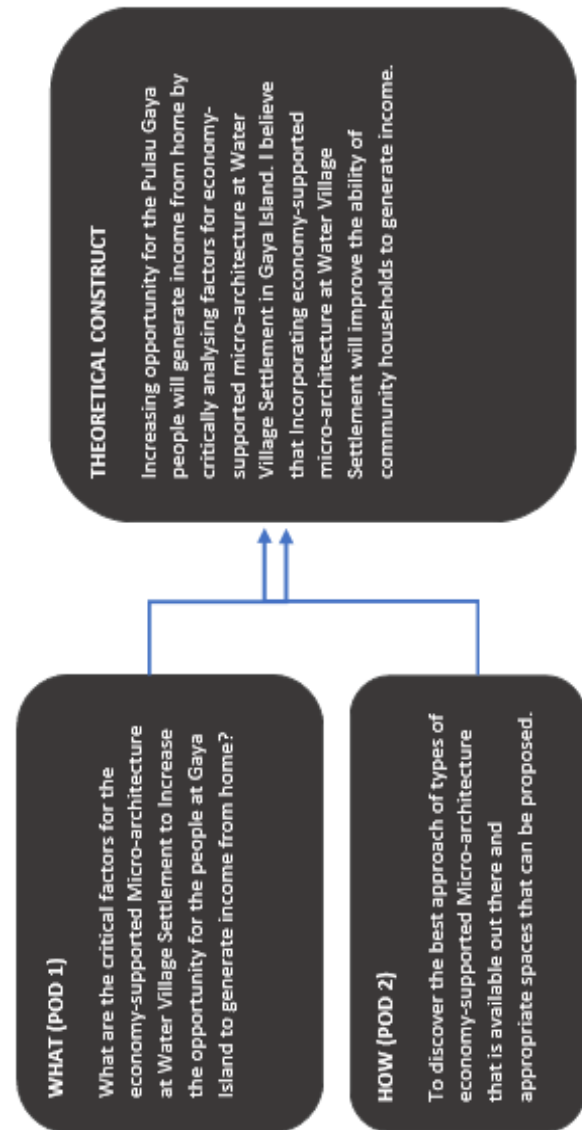
essential strategy for reducing poverty (Haggblade & Hazell, 1989; Mellor, 1986). "Microarchitecture" refers to the way resources are structured in connection to design and development in a given setting, such as a suburban region, according to Tazilan et al. (2010). The word's origins remain a mystery. Various authors, on the other hand, use the phrase to denote a compact and transportable design.

According to Dakhia and Berezowska (2010), in today's natural living society, the urban ecosystem includes the functional space aspect of MCR. Many buildings in the built environment have already been classified as MCRs. Identifying its location and surroundings is seen as a rhetorical unit for MCR. The purpose of helping visitors find their way through an architectural complex is referred to as "finding a way" in the industry. It will be short-lived, based on current needs and styles, which will determine its existence.

With the existence of this micro concept, the residents of Lok Urai village can plan the type of business that encourages economic establishment. As an example, I can give that throughout my time in the Village Area. I saw the villagers' skills. I have surveyed them at different times, i.e., in the morning, they are more aggressive than in the evening; they are more relaxed and quiet. Jetty and platform (Plantar), we can see where the route of the villagers from one point to another and from one door to another

4. METHODOLOGY QUALITATIVE

This Ethnography research method will study based on two objectives (i) What are the job opportunities that could be proposed; and (ii) How to develop methods to manipulate the existing spaces. This research will formulate (i) The best spatial configuration to the micro-economy on water settlement and (ii) Small scale industry that could contribute to income generation. Will be analysed using ATLAS.ti.



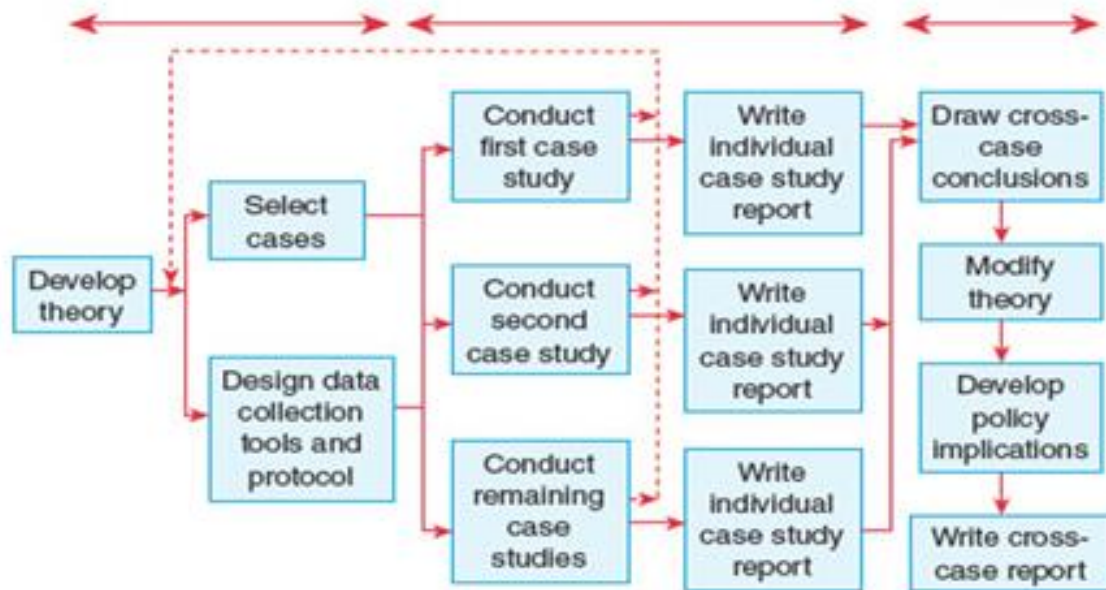
Theoretical Construct	Source of Data	What data are you collecting?	How do you measure the data?	How to collect?	How to analyse?	How to validate?	Expected Result
Water Village Settlement	Micro- architecture	Spatial planning Regulations The available spaces	1. Analysing the collected data	Interview and Case study	Descriptive statistical Analysis	Descriptive statistical Analysis	The importance of the existing spaces and it's possibilities.
	Economy-supported micro-architecture	Economy activities Different spaces that allow income generation. Different types of economy- supported micro-architecture that is available out there	Comparison of the current situation of the space and the different spaces that is available out there. Comparison of the case and precedent study that is done	Literature Review	Descriptive statistical Analysis	Descriptive statistical Analysis	The different methods and strategies to enhance the existing economy supported Micro-architecture.

What are the essential socioeconomic aspects in Microarchitecture for Water Village Settlement in Gaya Island to increase opportunities for the villagers to generate income?

Research Questions	Deductive Code	Interview Question	Probing Question	Responder / Answer
RQ 1: What are the job opportunities that could be proposed in order to generate income for Water village in Pulau Gaya?	<ul style="list-style-type: none"> Job opportunity Increase water village people 	<p>Do you agree to make Gaya island one of the tourist attractions to help the people's economy of this area?</p> <p>Do you agree with the fish and marine resources farming activities in the area of Gaya Island?</p>	<p>What tourist attraction you can offer to the public based on your capabilities and expertise?</p> <ul style="list-style-type: none"> What type of marine resources that you know can live in the Gaya Island ? Do you have experience in fishing or fish farming activities?(Aquaculture) Do you have involved in any business before? Have you known or heard about aquaponics activity before? How about Seawater? Have you try it before? 	<p>Boat ride, jungle trekking guide in Gaya Island.</p> <ul style="list-style-type: none"> Groupers, Seabass, sea cucumber etc. Yes, I did fish farming before, but lack of knowledge and guide all fish died due to ocean temperature constantly changing from time to time. Yes, the process where the whole cycle for fish farming in the fish pond activity while you fish farm you also can provide vegetable. but for saltwater still not sure what to do.
		Do you agree the women in Gaya island can help the household income by running a small business industry from home?	What can you do? Are there any expert skills, such as repairing the nets, making fishballs, cakes, etc.?	
	Do you agree to follow an entrepreneurship training and coaching program to generate a family and village economy?		When is a suitable time that you think is good for you to join the programme? During the weekend, on Weekdays and what time?	

What are the essential socioeconomic aspects in Mikroarchitecture for Water Village Settlement in Gaya Island to increase opportunities for the villagers to generate income?				
Research Questions	Deductive Code	Interview Question	Probing Question	Responder / Answer
RQ 2: How develop methods to-manipulate the-existing spaces. Type of business for the people. Area to support micro economy?	• Spatial formation for water settlement.	Do you like living on Gaya Island because this community helps each other?	How often do you are guys meet each other? And where do you meeting each other?	
		With the industry we want to propose, Do you agree to take care of my environment so that my village looks clean and beautiful?	What in your mind, how to look your villages looks clean? Do you agree if resident associations make a timetable for you to involve in cleaning activities?	
		With a good sewage and drainage system, do you agree to share a small portion of your income to maintain your family's health and the environment?	How much are you willing to spend on it? And do you agree if we collect that money every week from you?	
		What are spaces are available in your house? That we can propose some economic activity.	Do you have any suggestion or opinion that looks like business belongs to you, and you feel safe doing business activities in your house?	

DEFINE AND DESIGN	PREPARE, COLLECT AND ANALYSE	ANALYSE AND CONCLUDE
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1.1 DEMOGRAPHIC SAMPLING

To obtain unbiased results that can represent the water settlement population in Gaya Island. The interview form will be distributed through a village committee member. The interview form will be distributed to at least 15-30 villagers.

1.2 INTERVIEW FORM

Three (3) parts will be asking to meet the requirement or to identify, and The question is related to the formation of this paperwork:

PART 1: Socio-Economic.

This section will have four questions. Each question has a breakdown that needs to be known more clearly and accurately. The question looks at the answer of the responder. If the question is something new information, the question will be longer. However, this section focuses more on the primary source of livelihood and other villagers' income about the new economy to be proposed.

PART 2: Architecture, Society and culture

This part will be more about understanding group life. Theory The basic concepts of clustered living will be used in this section. This section has four questions and two question fractions for each interview question. The question will be more towards understanding the architecture in the water village.

PART 3: Demographic Data Collection

Section three will identify respondents based on their inputs. Question-related to background, ethnicity, monthly income, occupation, age, Total household and many more if applicable.

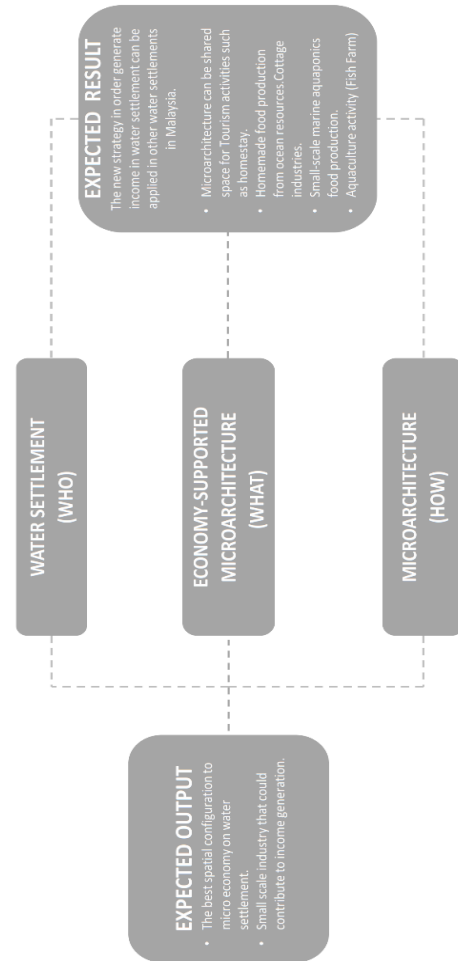
5. METHODOLOGY QUALITATIVE

This Ethnography research method will study based on two objectives (i) What are the job opportunities that could be proposed; and (ii) How to develop methods to manipulate the existing spaces. This research will formulate (i) The best spatial configuration to the micro-economy on water settlement and (ii) Small scale industry that could contribute to income generation. Will be analysed using ATLAS.ti.

The objective of this study is also to determine the types of small businesses that can propose in water villages. The study can also help government agencies in various ministries, including the ministry of economy, Sabah town & regional planning department, NGO, and researchers at local and foreign universities.

6. VALIDATION AND LIMITATION OF STUDY

The limit of the study will be the location limitation, response limitation, and time limitation because the villages at Gaya Island are very far. In this study, most of the research that I found focuses on generating income, not from Water settlement residences in Malaysia. That maybe have some idea and planning how to generate household income from home but not general in water settlement residences. Future research must explore a larger sample in a different area to have a better conclusion and outcome. In addition, it is a bit difficult to find out

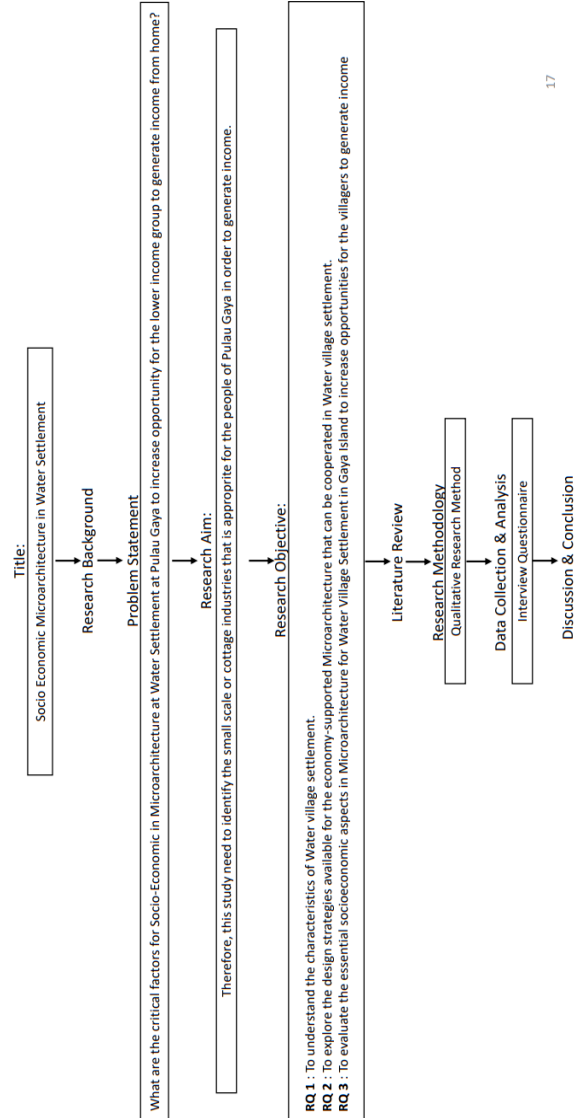


more information about who lives in this area through social media. Due to the Covid-19 epidemic, only a limited number of samples could be collected, and I cannot control how many people will respond to this interview through social media. The limited sample size would also affect the finding of the research. Thus, the supporting information and opinions will be limited.

7. MILESTONE



8. RESEARCH FRAMEWORK



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