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CAPACITY BUILDING PLANNING FOR FISHERMEN COMMUNITY'S EMPOWERMENT

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Abstract

Efforts to promote fishing community empowerment frequently face obstacles owing to inefficient measures carried out by multiple parties that do not result in substantial improvements in the fishing communities. The persistence of this problem, however, can be linked to a lack of capacity building activities, particularly in the context of sustainability, which is critical for long-term development among fishermen. This research intends to investigate the reality of fishermen's capacity building in Terengganu, Malaysia, using the aspects of economic sustainability, institutional environment, and fishermen's technology. The study included 220 coastal fishermen who were sampled in stages. Questionnaires were used to collect data, which was then analysed using descriptive statistics and Partial Least Square-Structural Equation Modelling (SEM-PLS). According to the study's findings, the development of sustainability capabilities (technological, economic, institutional, and technological) influences the empowerment of fishing communities. As a result, community empowerment programmes should focus on capacity building in order to foster a well-empowered community.

Keywords: Fisheries, capacity building, sustainability

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INTRODUCTION

The existence of resources, relationships, networks, leadership, and skills in the group process is defined as capacity (Baillie et al., 2008). Capacity building refers to the process of creating human capital, organisational structures, institutions, and social systems (Baillie et al., 2008; Merino, 2012). Capacity development is typically a never-ending process (Baillei et al., 2008; Koutra et al., 2012). According to Philips and Pitman (2009), capacity building is a type of community development that involves community development procedures.

Capacity building entails the development of key aspects in which capabilities emerge through the expansion of existing knowledge and skills (Mills & Porty, 2010). Changes in performance and the results obtained can be used to assess capacity growth (Merino, 2012). Capacity building is investigated as a non-static process that grows through development procedures to attain desired outcomes. Capacity building also means the absence of external elements or elements entering the community, but rather the utilisation of existing resources and their enhancement to a higher level for the benefit of the entire community.

According to Yadama and Dauti (2010), The sustainability component can be used to study capacity building. Sustainability has several facets, including institutional, economic, social, and environmental sustainability. (Ciegis et al., 2009; Puziah Ahmad et al., 2013; Turcu, 2012). In Abiona and Bello (2013), introduce technology as an extra variable to quantify sustainability. These five criteria can be used as an indicator framework to analyse community sustainability. Capacity building fosters long-term efforts to make a community better. Through Malaysia's government is committed to achieving a world-class living standard for the entire country by 2025 through sustainable development.

Community development projects include community empowerment as well. Participation (Azizan Bahari, 2013; Lyndon et al., 2011) and self-reliance (Fawcett et al., 2010) are two components of community empowerment. Tremblay and Gutberlet (2010) define empowerment as "community-driven efforts and changes implemented by community members themselves." Community members are recognised as major driving forces within a community when they are empowered. It recognises the community's ability to effect change. Community members are the ones in charge of making their community better.

LITERATURE REVIEW

Coastal communities in general work predominantly as fishermen, particularly small-scale fishermen, and rely on marine resources as a source of income (Hughes et al., 2011). Small-scale fishermen contribute significantly to the economy, notably in the Asia-Pacific region (Kittinger, 2013). According to Kittinger (2013), the economic system of fishermen consists of a small capital allocation gained through individual and family help as opposed to large-scale

fishermen supported by businesses. This explains why small-scale fishermen have less capacity than those who use larger fishing vessels. In fact, in order to continue earning a living as small-scale fishermen, they rely on the aid of family members. Families obviously display a huge resource with the potential to influence their economy.

The economic sustainability of fishermen is quite concerning. According to Nor Hayati (2011) and Wan Mohd Zaifurin (2009) studies, the majority of the younger generation of fishermen is no longer interested in continuing the fishing activity as a source of income. Regulations that discourage young people from entering the fishing sector, as well as the rising costs of fishing methods, contribute to the movement of young people (Smith et al., 2014). These facilities, according to Smith et al. (2014), in order to promote the wellbeing of fishing communities, provide young people with the opportunity to obtain fishing licences and underline the importance of youth involvement in the fisheries industry. These challenges may have an impact on the sustainability of the fishing industry, which is one of the country's most important.

The use of technology is one of the variables that contributes to increasing sea yields. According to academics Lam and Pitcher (2012), it has a direct impact on enhancing efficiency and extending business opportunities in the trade of plentiful marine resources through facilities and technological improvements. Glass et al. (2015) agrees, claiming that the utilisation of technology is the most important aspect in creating a large income for fishermen. However, due to budgetary constraints, most coastal fishermen do not have access to modern technology resources (Lam & Pitcher, 2011). This clearly shows that technical tools may help fishermen increase their income generation through improved fishing tactics. High-quality marine resources can attract better market opportunities.

Institutional sustainability, this can be evaluated in terms of fishermen's associations, which are important for the develop of fishing communities. However, as mentioned by Siti Rahmah et al. (2004), many challenges exist within a fishermen's association where the fishermen's organisations in the community are not engaged in giving socioeconomic aid to the fishing community. Existing fishermen's groups, according to Mohd Taib (2008), continue to rely on traditional operations such as selling oil, marketing fish, and selling ice. Furthermore, according to Mohd Taib (2008), established community fishermen's associations have the ability to progress forward if the board of directors and members of the association are aware of the need to diversify their activities inside the association.

The expansion of marine resources corresponds to population and economic growth, which have a direct impact on the sustainability of marine resources (Robert & Brink, 2010). Marine resource conservation is critical, particularly for community development (Hughes et al., 2011). However,

economic exploitation of marine resources has been jeopardised by community efforts (Nobre, 2009). Exploitation is still prevalent as fishermen catch fish regardless of the season, whether summer or winter (Verliin et al., 2013). Overfishing has had an influence on the marine ecosystem as well as fishermen's revenue (Launay, 2008; Cinner et al., 2013). This is visible on the West African coast, where overfishing has affected the environment (Witbooi, 2008). However, in addressing concerns such as overexploitation of marine resources, Witbooi (2008) suggests that sustainable management should not be just the duty of a single country but should also necessitate cooperative management across several nations. Unfortunately, many countries, especially those in the European Union and West Africa, are not taking advantage of this strategy.

Capacity building within a community is a process that has an impact on overall community development (Philips & Pitman, 2009). Lovren (2010) defines capacity building as a process of empowering the community. Through its ability to alleviate social exclusion, capacity building has a significant relationship with community development.

Participation within the fishing community is critical to their efforts to improve community capability. The fishing community's participation at various levels of community development is critical (Aldon et al., 2011). Indeed, according to Aldon et al. (2011), the challenges that occur in Indonesia regarding the development of the fishing community by the government frequently do not involve the fishermen's engagement in their community activities. The impact of growth without community engagement results in the fishing community's facilities being unable to develop (Stanford et al., 2014). It was clear that active participation by loyal local community contributed significantly to human and social capital, implying that community empowerment may be critical for future growth (Mohd Kusin et al., 2019). According to Malik et al. (2018), state and local governments can help by encouraging local community participation. Based on these considerations, it is possible that initiatives to empower fishermen can be strengthened through capacity-building components. As a result, the purpose of this article is to identify and analyse the impact of capacity building on the empowerment of fishermen in Terengganu, Malaysia.

RESEARCH METHODOLOGY

This study used a survey approach to identify capacity building for the empowerment of Terengganu fisherman. A questionnaire was used to collect the data. In the fishing community, sustainability includes economic, environmental, social, institutional, and technological sustainability. The capacity building variables, which were classified into the areas of economic, institutional, social, technological, and environmental sustainability.

Meanwhile, community empowerment variables include domains such as active involvement and self-reliance. Active participation is the term used to

describe the involvement of community members in all element of community development, including that of fishing. It encompasses the procedures of identifying issues and needs, planning, implementing, monitoring, and improving in order to build the community. (Alias et al., 2023; Sudarmono, 2009). Furthermore, self-reliance can be defined as the capacity to manage, mobilise, and use one's current resources as investments for a better life. (Thomas & Pawar, 2010). Improving the socioeconomic results of families through entrepreneurship, working extra hours, and part-time jobs based on fishing-related talents or abilities unrelated to fishing occupations are further examples of self-reliance skills.

According to Cronbach's alpha, which is displayed in Table 1, the survey questionnaire in the study has a high reliability rating that is greater than 0.65. This means that the questionnaire's prepared question items have a high level of reliability.

Table 1: Cronbach's Alpha

Variable	Capacity Building	Community Empowerment
Cronbach's Alpha	.846	.956

326 coastal fishermen make up the study population. Respondents were drawn from a sampling frame collected from the Kuala Terengganu District Fisheries Office (154 fishermen) and Kuala Besut (172 fishermen), both in Terengganu, Malaysia. The following criteria are included in the study's unit of analysis: i) They must be full-time coastal fishermen; ii) They must own their own small boats; and iii) They must be registered with the District Fisheries Office.

This choice was made because full-time coastal fishermen are the most common type of fisherman in the occupation. Furthermore, coastal fishermen are a group that receives government attention in socioeconomic development because they are the most affected sector during the monsoon season, particularly on Peninsular Malaysia's East Coast.

The study's sample size is 220 people, with 100 (Kuala Terengganu) and 120 (Kuala Besut) Terengganu, Malaysia. Using Cochran formula, the sample size was estimated, with a maximum sampling error of 5% (Corbetta, 2003). Purposive sampling was utilised in this study. Purposive sampling involves selecting a sample based on specified criteria relating to the unit of analysis in the study.

The data was analysed using SPSS software and descriptive statistics to determine fisherman capacity building. Meanwhile, structural equation modelling-partial least squares (SEM-PLS) analysis was used to develop the model on the impact of capacity building on community empowerment.

ANALYSIS AND DISCUSSION

The results of this study show the findings according to the research objectives, which are to identify the capacity building of the fishing community and its subsequent relationship with the impact of capacity building on fishermen's empowerment.

Demographics of Respondents

Table 2 displays the study findings in relation to the age and experience level of fishermen. According to the survey findings about the age of fishermen, more than half, or 60%, of the fishermen are between the ages of 41 and 65. Meanwhile, 18 percent are over the age of 66, and 16 percent are between the ages of 21 and 40. Furthermore, 4% of the fishermen are under the age of 20.

In terms of fishing experience, 47 percent of fishermen have more than 40 years of experience, 18 percent have 30 to 39 years of experience, and 15 percent have 20 to 29 years of experience. Fishermen with 11 to 19 years of experience account for 14%, while those with less than 10 years of experience account for 6%.

The age distribution period corresponds to the age range of income-generating activities, with the productive labour force age range of 15 to 64 representing the productive labour force age in pursuing economic resources. Additionally, most fisherman possess the necessary skills and knowledge within the context of their vocation and are willing to share their expertise and experience for future generations.

The capacity of a fisherman to sustain their livelihood is impacted by their level of experience. According to the findings of the study, over half of the respondents, 47% have prior experience in the fishing industry. This lengthy expertise can be attributed to a genetic component that has been there since childhood, and the fishing community has long been exposed to the maritime environment. Their prolonged exposure to the sea environment has given them a grasp on fishing-related challenges.

Table 2: Demographics Of Respondents (N=220).

Age		Fishermen Experience	
20 and below	2 (4%)	10 and below	13 (6%)
21-40 years	35 (16%)	11 to 19 years	31 (14%)
41-65 years	143 (65%)	20 to 29 years	33 (15%)
66 years and above	40 (18%)	30 to 39 years	40 (18%)
		40 tahun and above	103 (47%)

SEM-PLS Analysis

The first step in analysing the SEM-PLS technique is model testing. To verify the validity and reliability of the study variables, the measurement model is tested. Internal consistency, indicator reliability, concept validity, convergent validity,

and discriminant validity are the model's validity and reliability, according to Hair et al. (2014). Cronbach's alpha values are used to measure the internal consistency of each variable dimension, as shown in Table 3. The Cronbach's alpha values for all variables meet the criteria, according to the table. The composite reliability (CR) values of each measured variable dimension are also considered for internal validity.

Table 3: Cronbach,s Alpha, Composite realibility & Average Variance Extracted (AVE)

Variabel	Cronbach,s Alpha	Composite realibility	Average Variance Extracted (AVE)
PK	0.624	0.838	0.721
PKE	0.669	0.807	0.590
PKI	0.820	0.874	0.583
PKP	0.697	0.814	0.525
PT	0.954	0.965	0.845

Note:

- | | |
|---|--|
| PK Empowerment Community | PKP Capacity Building (Enviroment Sustainability) |
| PKE Capacity building (Economic Sustainability) | PT Capacity building (Technology Sustainability) |
| PKI Capacity building (Institution Sustainability) | |

This means that the variable dimensions utilised in this study are accepted and meet the convergent validity criteria. The measurement model is depicted in Figure 1, which explains the outer loadings for each factor that meets the criteria.

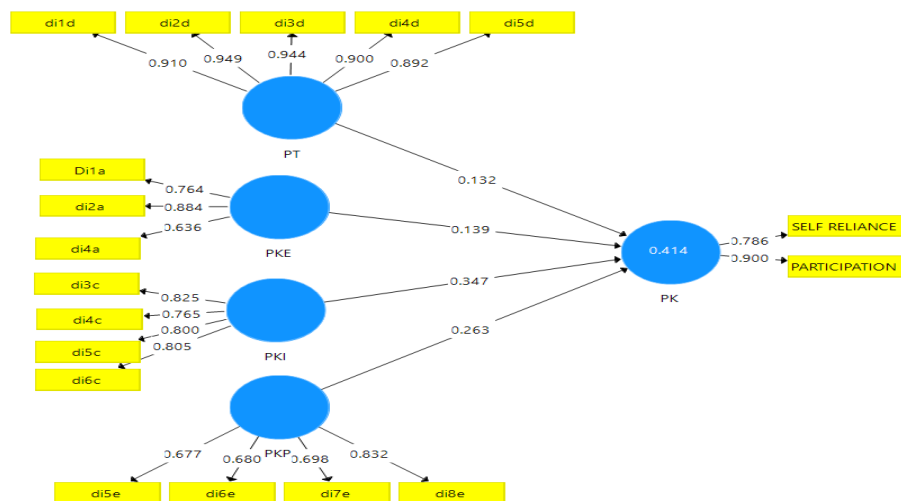


Figure 1: Outer Model

The structural model testing in Figure 2, is used to verify whether the variables in a model fit the criteria of being appropriate, valid, and reliable by examining the relationships between the structural model's latent variables (Davicik, 2014). Paths in the structural model explain the relationships between variables.

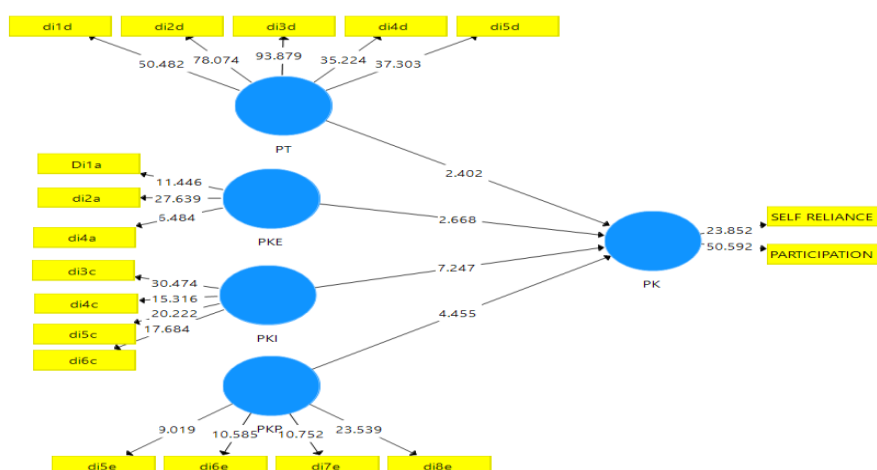


Figure 2: Structural Model

Meanwhile, Table 4 presents the R2 values for the community empowerment model in the research. The table shows that community empowerment is contributed by the capacity building in economic sustainability, capacity building in institutional sustainability, capacity building in technological sustainability, and capacity building in environmental sustainability.

Table 4: R-Square

Variable	R-Square
Empowerment Community	0.405

According to Table 5, the findings of the convergent validity study, which comprises factor loading analysis, discriminant validity, and cross-loading, reveal significant results. The capacity-building factors (economic sustainability, institutional sustainability, environmental sustainability, and technical sustainability) have significant associations with t-statistics (>1.96). This suggests that aspects of sustainable capacity building can have an impact on community empowerment.

To improve their economic status, the present generation of fishermen not only implements hereditary knowledge and abilities but also expands their

knowledge and skills, including learning about the latest modern equipment. Furthermore, in order to maintain their current knowledge and skills, fishermen share their information by guiding and educating other fishermen. This may be because most fishermen are familiar with GPS, even if they do not own one. Fishermen can track fishing grounds using GPS technology, saving them time in locating fishing areas. The use of technology also allows them to spend more time at sea, allowing them to catch more fish.

Furthermore, as the fishing community has become more aware of the loss of marine resources, fishermen have taken the initiative to build fish breeding sites (unjang) to help sustain the marine environment. They also describe illicit fishing activities carried out by foreign and pull-net boats that trespass on fisheries officials' restricted zones. These findings are corroborated by Akpalu's (2010) study, which indicates that fishing communities' efforts to avoid overfishing directly contribute to an improved quality of life, lowering poverty rates within the fishing community. Poverty is linked with fishing towns, and one of the contributing elements is fishermen's persecution. Communities can address social exclusion by giving learning opportunities to the community (Ibrahim et al., 2023; Henderson, 2005), which leads to community development.

Table 5: Significant Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	*Sig
PT -> PK	0.129	0.130	0.054	2.411	0.016
PKE -> PK	0.136	0.139	0.055	2.479	0.014
PKI -> PK	0.356	0.355	0.052	6.863	0.000
PKP -> PK	0.260	0.265	0.058	4.469	0.000

*Significant P Value <0.05

CONCLUSION

Fishermen demonstrate capacity-building aspects in the context of sustainability. According to technological sustainability, fisherman have technological equipment and skills in using technologies such as GPS and sonar, among others. Most fishermen have experience handling technology as crew members on larger vessels outfitted with technical gear for acquiring sea resources. Efforts to improve ownership and usage of technology have aided fishermen in improving their personal lives and the total economic resources of their communities. To continue working as fishermen, the fishing community must emphasise ownership and the use of cutting-edge technology resources.

Economic sustainability in the fishing community has improved significantly. The economic element significantly affects how well fisherman can support themselves. Consistent attempts to improve must be made by the fishing community through an increased variety of marine goods. Diversifying marine product offerings can assist fishermen in generating economic gain. The creation

of marine-based items not only generates money but also adds value to the government's attempts to keep fishing jobs as one of Malaysia's occupations.

The fishermen's institutional sustainability in partnership with external institutions has been quite excellent, particularly in their community development activities. Continuous attempts to create relationships pay off, especially when it comes to giving various help facilities to fishermen. Fishermen can take the initiative to create positive results by empowering their community through fishing organisations to engage with other institutions.

The fishermen's community's environmental sustainability is inadequate. Fishermen have a low awareness of the need for environmental preservation for future generations and resource sustainability. Because of the dwindling marine resources, this lack of awareness has repercussions for the decline of fishing as a career. As a result, efforts to raise awareness, notably through education programmes, about the need for marine conservation for future generations must be stepped up. The fishermen's community's environmental sustainability is inadequate. Fishermen have a low awareness of the need for environmental preservation for future generations and resource sustainability. Because of the dwindling marine resources, this lack of awareness has repercussions for the decline of fishing as a career. As a result, efforts to raise awareness, notably through education programmes, about the need for marine conservation for future generations must be stepped up.

Capacity-building programmes have clearly impacted community empowerment. Capacity-building enhancements have successfully increased community empowerment. The fishing community's involvement and self-sufficiency are driving forces in empowering the fishing community. Positive outcomes are accomplished, including in the partnership process, through capacity-building activities in the context of sustainability, and they are able to choose their own needs. The enhancing component is one of the main characteristics of sustainability that can add value to community empowerment programmes. As a result, this article proposes that efforts should be made to improve the elements of sustainable capacity building in order to increase the empowerment of the fishing community.

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