

Fishermen Empowerment: The Key Role of Human Capital and Joint Business Group Performance in Improving Welfare in Kendari City, Indonesia

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This study examines the influence of human capital and the performance of joint business groups on the empowerment of fishing communities in Kendari City. The research was conducted in Kendari City, Southeast Sulawesi Province, from October to December 2023. The study population comprises all fishermen who are members of the Joint Business Group, abbreviated as KUB, in Nambo Subdistrict, Kendari City, amounting to 142 individuals. The sample for this study was determined using the census method, which entailed the inclusion of the entire population, or 142 fishermen, as a sample. The exogenous variables in the study, namely human capital and the performance of the fishermen Joint Business Group (KUB), while the endogenous variable, namely the empowerment of the fishing community itself. The research data were analyzed using descriptive statistics to describe or describe the status of human capital variables, the performance of the Joint Business Group (KUB), and the empowerment of fishing communities. Inferential statistics were used to describe and explain the fishing community empowerment model with Partial Least Square (PLS), a Structural Equation Modeling (SEM) equation model. The results show that human capital has a positive and significant effect on the performance of joint business groups and the empowerment of fishing communities. In addition, the performance of joint business groups has a positive and significant contribution in improving the empowerment of fishing communities. The indirect effect of human capital is positive and significant through the performance of joint business groups on the empowerment of fishing communities in Kendari City. So that the empowerment of fishing communities will be able to be achieved by increasing the human capital of fishermen through the effective implementation of the Joint Business Group (KUB) program as a forum for learning and community self-development.

Keywords: Empowerment, fishermen, business group, welfare, human capital.

INTRODUCTION

Indonesia is one of the maritime countries in the world that has abundant potential marine resources. The [Ministry of Maritime Affairs and Fisheries of the Republic of Indonesia \(2020\)](#) states that Indonesia has a total area of 7.81 million km² with a sea area of 3.25 million km² and 2.55 million km² in the form of Exclusive Economic Zones, it is not surprising that many people in Indonesia make a living as fishermen. The fishing community is a community that relies heavily on existing marine resources, because the sea and coastal areas contain enormous wealth of marine resources, ranging from fish, crabs, shrimp, shellfish and various other marine resources that are ready to be exploited by fishermen. However, the abundant potential of marine resources does not guarantee the welfare of their lives, even until now fishermen

are generally known as people who have relatively low education and live in poverty.

The reality shows that most fishing communities are still part of the disadvantaged communities. Coastal communities who work as fishermen are still one of the fisheries business actors that contribute greatly to the high level of poverty in coastal areas. Of the 8,090 coastal villages that are mostly inhabited by fishing communities, 16.42 million people live with a poverty index of 0.32. This means that approximately 32% of individuals in coastal areas are still unable to fulfill their basic needs. The number of fishermen in Indonesia is estimated at 2.17 million. There are more than 700,000 fishermen who are not heads of households. Most of the fishermen live scattered in 3,216 villages categorized as fishing villages where the majority of the population works as fishermen. In addition to the fishing community being trapped in a poverty trap, it is

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also estimated that around 25% of fishermen experience health problems, which greatly disrupts their activities to earn a living to meet the economic needs of their households.

This condition is certainly ironic when compared to the many development efforts that have been made by the government. The marine potential is quite large, it should be able to prosper the lives of its people, especially in terms of utilization and management of its marine potential. But in reality, the lives of coastal communities are always plagued by poverty, even coastal life is often identified with poverty. Poverty is a description of a phenomenon and social problems that occur in society, with a complex and multidimensional form. The poor who live in rural areas, some of them live in coastal areas and work as fishermen. Judging from the level of empowerment, the condition of coastal communities (fishing communities) is still largely categorized into traditional fishing groups (small fishermen). Compared to other communities, coastal communities/fishing communities are still classified as the "poorest" social layer (Mubyarto, 1999). The lives of fishermen can be said to be not only inadequate, but also underdeveloped, including in terms of education. The social limitations experienced by fishermen do not manifest in the form of isolation, because physically the fishing community cannot be said to be isolated or alienated. However, it is more manifested in their inability to take part in market economic activities profitably, which is shown by their weakness in developing organizations outside their relatives or local communities (Boedhisantoso, 1999).

The condition of social deprivation and poverty suffered by fishing communities is caused by complex factors. These factors are not only related to fluctuations in the fishing season, limited human resources, limited capital, lack of access, and fish trade networks that tend to be exploitative towards fishermen as producers, as well as the negative impact of fisheries modernization that encourages rapid and excessive depletion of marine resources, as well as limited opportunities and periodic scientific population opportunities for fishermen to diversify their work, especially outside of fishing activities at sea.

Several studies have shown that fishing communities have developed various strategies to maintain survival, including the existence of traditional institutions as collective actions that can effectively be used as a strategy to overcome life's difficulties, such as the formation of savings and loan groups and arisan. These activities are very simple, flexible, and adaptive to socio-economic conditions, and are in accordance with the conditions of fishing communities, especially the poor (Wijaya and Fauzie, 2020).

Southeast Sulawesi Province is mostly made up of islands and surrounded by oceans, with natural resources that have high economic value. For coastal communities, the wealth in the form of sea fish, shellfish and crabs obtained by fishermen using traditional fishing methods is able to support consumption needs. Kendari City, as the capital of Southeast

Sulawesi Province, has an area of 271.76 km² and has a sea water area of approximately 177.64 km² with a stretch of coastline of approximately 85.8 km, plus Bungkutoko Island which is directly opposite the Banda Sea, thus providing quite strategic opportunities and hopes for the development of the marine and fisheries sector according to the Maritime and Fisheries Service in 2021.

The fishing community at the research location exhibits a diversity of capital ownership. The fishing community is comprised of three distinct groups: wealthy fishermen (owners of substantial capital), middle-class fishermen (owners of moderate capital), and impoverished fishermen (owners of limited capital). Those with substantial capital, or "rich fishermen," engage in fishing by forming groups and employing individuals lacking capital as their workers. This includes fishermen who possess limited fishing gear and thus prefer to become ship laborers. Individual fishermen or those with medium capital engage in fishing activities independently, utilising basic equipment. In contrast, the poor fishermen (owners of small capital) are those who utilize simple fishing gear, such as fishing rods and trawls, and traditional boats to catch fish in order to meet their daily needs.

The lives of fishermen are highly dependent on nature and the weather. When the weather is bad, there is continuous rain and strong winds, the famine season arrives. At this time, fishermen take various strategies to fulfill their needs. Among them, they look for other jobs such as farm laborers, trading, or other jobs, even going to the city to become construction workers. Conversely, when the fishing season comes, they return to repair and prepare all their fishing gear. In addition, the fishing community in Kendari City depends on the income from the catch and the management of the results from the sea to the marketing. The catches of poor fishermen are mostly eaten for self-consumption rather than sold. This is done without taking into account other material needs that lead to changes in their living conditions in the future. Thus, this condition causes them to remain in poverty. Mubyarto (1999) argues that poor fishermen are fishermen whose income from their boats is insufficient to meet their needs, so they must be supplemented by other work, both for themselves and for their wives and children.

Such conditions certainly have many aspects that influence the existence of fishing communities, both internally and externally. As stated by Wijaya and Fauzie (2020), the main causes that lead to fishermen's poverty are: First, there is no integrated policy, strategy and implementation of development programs for coastal areas and fishing communities among development stakeholders. Second, there is an inconsistency in the quantity of production (catches), so that the sustainability of fisheries socio-economic activities in fishing villages is disrupted. Third, the problem of geographical isolation of fishing villages, making it difficult to get in and out of the flow of goods, services, capital, and



people, which disrupts economic mobility. Fourth, there is limited business capital or investment capital, making it difficult for fishermen to improve their fisheries economic activities. Fifth, there is an "exploitative" socio-economic relationship with boat owners, intermediary traders/middlemen in the lives of fishing communities. Sixth, the low level of income of fisher households, which has a negative impact on efforts to increase business scale and improve the quality of their lives. In addition to the factors above, the cause of poverty in the community, especially in coastal areas, is caused by the limitations of human capital owned, concerning the relatively low quality of human resources (level of education, knowledge, skills as well as the level of health and mastery of technology) (Suryawati, 2005). The people of Kendari City who live in coastal areas and small islands, mostly fishermen, find it difficult to obtain business capital to improve and develop their activities so that the business results obtained are relatively less and the value of income is also low. This condition illustrates that many of them live below the poverty line and although some have improved, they have only reached the pre-prosperity level.

The fishing community as a community that utilizes the potential of the sea and coastal areas as economic income cannot be juxtaposed with economic communities in other sectors, such as the agricultural sector, industrial sector and others. Fishermen's empowerment is needed in boosting the problems that exist in coastal communities (fishermen) as an effort to improve their lives and can be juxtaposed with other economic sectors. Prabawati and Pradana (2018) interpret community empowerment as a deliberate effort to facilitate local communities in planning, deciding, and managing their local resources through collective action and networking so that in the end they have the ability and independence economically, ecologically, and socially. The participation approach is a step towards community empowerment in rural resource utilization. This approach is expected to be able to invite the community to always participate in utilizing their potential and improving their quality through increasing the human capital of each individual fisherman.

The diversity of individuals in accessing the resource system is an interesting thing to study more deeply, so that it can be used as a reference for community empowerment. Every individual basically has the power/empowerment to actualize themselves and meet their needs. It's just that not everyone has the ability to realize their empowerment. Individuals/groups can be said to be empowered if they have truly been able to participate and exercise control over their lives. Skills, knowledge and power as well as the ability of individuals/groups to make decisions for themselves are also indicators of the success of the empowerment process implemented.

The Indonesian government through the Indonesian Ministry of Social Affairs as one of the facilitators in providing assistance to the community. One form of empowerment

program for the community from the Ministry of Social Affairs is the Joint Business Group (KUB) assistance program. KUB is intended as a forum to improve the social welfare of the poor, which includes meeting the needs of daily life, increasing family income, increasing education, and increasing health status (Tampubolon, 2023). The purpose of this program is to empower the poor by providing business capital through the Direct Social Empowerment Assistance (BLPS) program to manage Productive Economic Enterprises (UEP).

The condition of abundant marine wealth and fishing communities that are still classified as poor due to catches that do not meet their needs and minimal knowledge when fishing, so the government created a Joint Business Group (KUB) program for fishing communities, because the recipients of assistance are not individually, but in the form of joint business groups (KUB). Many hopes are pinned through this method of assistance per group, in order to get out and the circle of poverty, especially for areas that excel in the fisheries sector, also with the existence of these groups is expected to support the capacity building of fishing communities to be able to maintain the sustainability of fisheries resources and improve the local economy.

The objective of this study is to delineate the role of human capital and the performance of joint business groups as a conduit for the empowerment of fishing communities to achieve welfare. It should be noted that this study is still limited to the fishing community as the subject under investigation in terms of community empowerment. This preliminary analysis suggests that the failure of development initiatives to enhance community empowerment may be attributed to the government's tendency to overlook the social structures of these communities, which are the very objects of development. Furthermore, the failure to address the social system of the fishing community has resulted in the underutilization of the human capital of this community. Consequently, the utilisation and role of human capital owned by fishing communities represents a crucial and urgent alternative in order to enhance the empowerment of fishing communities.

RESEARCH METHODS

This research was conducted in Kendari City, Southeast Sulawesi Province, from October to December 2023. This study covers all fishermen who are members of the Joint Business Group (KUB) of Nambo Subdistrict whose members consist of the main actors (fishermen) located in Bungkutoko, Sambuli, Tondonggeu, and Petoaha Villages totaling 142 people. The sample of this study was determined using the census method, which means that the entire population of 142 fishermen in Kendari City. According to Etikan (2016) census samples are also referred to as saturated samples. A saturated sample is a sampling approach in which



the entire population is selected as the sample, and is usually referred to as a census in this context.

This study uses exogenous variables and endogenous variables. The exogenous variables in the study, namely: (1) human capital (X1) and performance of fishermen Joint Business Group (KUB) (X2) including: institutional aspects (X2.1), environmental aspects (X2.2), and policy aspects (X2.3). Endogenous variables in the study, namely the empowerment of fishing communities (Y) include: aspects of welfare (Y.1), aspects of access (Y.2), aspects of critical awareness (Y.3), aspects of participation (Y.4), and aspects of control (Y.5).

The measurement of variable instruments in this study employs a Likert scale, affording weight and value to the responses for each item. The Likert scale is a scale or measurement that is commonly used as a data collection method to ascertain or quantify both quantitative and qualitative data about a social phenomenon through the examination of attitudes and opinions. This scale ranges from strongly agree (5), agree (4), undecided (3), disagree (2), to strongly disagree (1). [Joshi et al. \(2015\)](#) describe the Likert scale as a tool used to measure the attitudes, opinions, and perceptions of individuals or groups regarding social phenomena.

The research data were analyzed using descriptive statistics and inferential statistics. Descriptive statistics are used to describe or describe the status of human capital variables, the performance of the fishermen's Joint Business Group (KUB), and the empowerment of fishing communities. [Kaur et al. \(2018\)](#) descriptive statistics have the aim of presenting a description or description of the object under study using sample or population data, without analyzing or making conclusions that apply to the public.

Inferential statistics are employed to elucidate and elucidate the model of the fishing community's livelihood, utilizing Partial Least Square (PLS). Partial Least Squares (PLS) is a structural equation modeling (SEM) technique that employs a variance or component-based approach. According to [Sarstedt et al. \(2021\)](#), PLS-SEM analysis is oriented towards theory development or building, with a particular focus on predictive outcomes. Therefore, it is particularly well-suited to research that is oriented towards the development or refinement of theoretical models. PLS is employed to determine whether there is a correlation between latent variables, which serves a predictive function.

PLS-SEM analysis consists of two sub-models, namely the measurement model (outer model) and the structural model (inner model). As explained by [Sadidi et al. \(2018\)](#) the measurement model, or outer model, describes the relationship between each indicator block and its latent variable. Assessment of the measurement model involves confirmatory factor analysis, testing convergent and discriminant validity. Reliability is evaluated through two methods, namely *Cronbach's Alpha* and *Composite*

Reliability. [Benitez et al. \(2020\)](#) state that the evaluation of the structural model, or inner model, aims to predict the relationship between latent variables. The inner model describes the strength of the relationship or estimation between latent variables or constructs based on substantive theory. The inner model analysis in this study includes testing the *Path Coefficient*, R-Square (R^2), *Goodness of Fit* (GoF), Q-Square (Q^2), and Hypothesis testing. For the hypothesis proposed, namely: hypothesis (1) it is suspected that human capital has a significant positive effect on the empowerment of fishing communities; hypothesis (2) it is suspected that human capital has a significant positive effect on the performance of joint business groups of fishing communities; hypothesis (3) it is suspected that the performance of joint business groups of fishing communities has a positive and significant effect on the empowerment of fishing communities; and hypothesis (4) it is suspected that human capital through the performance of joint business groups has a positive and significant effect on the empowerment of fishing communities.

RESULTS AND DISCUSSION

Human Capital of Fishing Communities: Human capital is an asset related to the ability to perform a particular activity. Human capital in this study is measured using four indicators, namely: age, formal education level, number of family dependents, income, and training. Human capital is defined as the knowledge of a person that contributes to a productive activity. Therefore, human capital is known as intellectual capital. The conclusion from the definition of human capital is the knowledge and abilities inherent to individuals shaped by education and experience, which are used to achieve larger community goals. The following is the human capital of fishing communities in Kendari City.

Table 1 shows that the human capital of fishing communities in Kendari City is generally in the medium category with an average value of 3.62. This shows that all human capital indicators have been owned and applied by fishing communities in Kendari City, both in acting and making various decisions. The fishing communities generally have an age that is still classified as productive, the community has completed 12/13 years of study according to government regulations, has participated in training or empowerment activities through KUB to increase knowledge and insight, has certain skills in the service sector or others that can generate money. Fishing communities also have a strong will to move forward and learn new things independently, and have the potential to help solve problems that arise in the surrounding environment wisely. Family members also motivate fishermen to move forward and obtain the amount of income that is in accordance with their abilities.

A. Performance of the Fishermen's Community Joint Business Group (KUB): The fishermen Joint Business Group



(KUB) is an assistance program of the Ministry of Maritime Affairs and Fisheries (KKP) channeled through local governments. The goal is to improve the economic level of fishermen, because with this fishermen's KUB can provide an important role in improving the economic sector. In measuring the performance of the Joint Business Group of fishing communities, it will be seen from the aspects of institutions, the environment and policies that exist and are applied in the KUB management process.

Table 1. Human Capital of Fishing Communities in Kendari City.

No.	Indicator	Mean	Category
1	Can complete the obligatory 12/13 years of compulsory education according to Indonesian Government regulations	4.22	High
2	A productive age level will encourage the community to grow towards a better direction	3.61	Medium
3	The number of family members will encourage individual motivation to move forward	3.48	Medium
4	The amount of a person's income is a representation of the quality of an individual member of society.	3.34	Medium
5	Have participated in training or empowerment through the Joint Business Group	3.76	High
6	Having certain skills in the field of services or other abilities that have economic value	4.05	High
7	Have a strong will to progress and learn new things independently	3.4	Medium
8	Has the potential to help solve other people's problems wisely	3.13	Medium
Average		3,62	Medium

Source: Processed Primary Data, 2023.

Table 2. Performance of Joint Business Groups in Kendari City.

No.	Indicator	Average	Category
1.	Institutional Aspects	4.05	High
2.	Environmental Aspects	3.63	Medium
3.	Policy Aspects	4.14	High
Average		3,94	High

Source: Processed Primary Data, 2023.

Table 2 shows that the performance of joint business groups of fishing communities in Kendari is in the high category, where the institutional aspect (mean value = 4.05), and the policy aspect (mean value = 4.14) are in the high category. While the environmental aspect (mean score = 3.63) is in the medium category. This shows that generally the fishing communities in Kendari City have implemented each aspect in the performance of the joint business groups of fishing communities has been done well although there is still one

aspect that has not been done optimally. The Joint Business Group (KUB) is a forum for fishermen who are able to improve performance, not only in the capture fisheries sub-sector, but are able to develop themselves organizationally to have various other types of businesses that can increase the empowerment and welfare of fishermen and their families. Stanford *et al.* (2014) argues that three important issues related to improving the welfare of fishermen in poverty alleviation are social, economic and welfare development projects.

B. Empowerment of Fishing Communities: Fishing communities are still preoccupied with poverty issues, even though being a fisherman is one of the main livelihoods to fulfill their daily needs and provide for their family members. The complexity of the problem has an impact on their declining economy. Therefore, to fulfill their needs, fishermen carry out various activities to obtain additional income after they go to sea. The empowerment of fishing communities is the presence of power, strength or ability by fishing communities to identify potentials and problems and can determine alternative solutions independently. The empowerment of fishing communities will be measured from the aspects of community welfare, the level of community access, critical awareness owned by the community, community participation, and control capabilities owned by the community.

Table 3. Empowerment of Fishing Communities in Kendari City.

No.	Indicator	Average	Category
1.	Community Welfare	3.56	Medium
2.	Access Level	4.05	High
3.	Critical Consciousness	3.51	Medium
4.	Community Participation	3.61	Medium
5.	Community Control	3.71	High
Average		3.68	Medium

Source: Processed Primary Data, 2023.

Table 3 indicates that the empowerment of fishing communities in Kendari is in the medium category. In particular, access (mean value = 4.05) and control (mean value = 3.71) are in the high category. In contrast, the mean scores for welfare (3.56), critical awareness (3.51), and participation (3.61) indicate that these factors are situated in the medium category. This indicates that the fishing communities in Kendari City have not fully utilized the empowerment factors in their daily activities to support themselves and their families. This is due to a number of factors, including the low level of community participation in training and mentoring programs that could enhance their capacity to earn a living. Moreover, the community's awareness of future changes and challenges is still limited, which prevents fishermen from considering long-term improvements to their lives and families. Consequently, it is



imperative that the fishing community be afforded the opportunity to develop itself through active participation in all activities that offer tangible benefits.

C. Fishermen Community Empowerment Model through Human Capital and Joint Business Group Performance: In the process of formulating this fishing community empowerment model, it will be carried out with the help of SmartPLS 3.0 software. Data analysis uses Partial Least Squares Structural Equation Modeling (PLS-SEM), which is a technique used to refine or predict established theories (Garson, 2016). Structural Modeling analysis consists of several stages: (1) formulating the theory for the research model, (2) testing the measurement model (Outer Model), (3) testing the model structure (Inner Model), and (4) testing the hypothesis (Hair et al., 2014).

Structural Model Theory Formulation: The structural model formulated in this study includes exogenous and endogenous variables. The exogenous variables are: (1) Human Capital (X1) which includes 8 indicators (X1.1 - X1.8); and (2) Joint Business Group Performance (X2) consists of: institutional aspect (X2.1) covering 5 indicators (X2.1.1 - X2.1.5); environmental aspect (X2.2) covering 5 indicators (X2.2.1 - X2.2.5); policy aspect (X2.3) covering 5 indicators (X2.3.1 - X2.3.5). The endogenous variable is fishing community empowerment (Y) which consists of: welfare (Y1.1) includes 6 indicators (Y1.1.1 - Y1.1.6); access (Y1.2) includes 5 indicators (Y1.2.1 - Y1.2.5); critical awareness (Y1.3) includes 4 indicators (Y1.3.1 - Y1.3.4); participation (Y1.4) includes 5 indicators (Y1.4.1 - Y1.4.5); and control (Y1.5) includes 5 indicators (Y1.5.1 - Y1.5.5). The following is an image of the research model formulation.

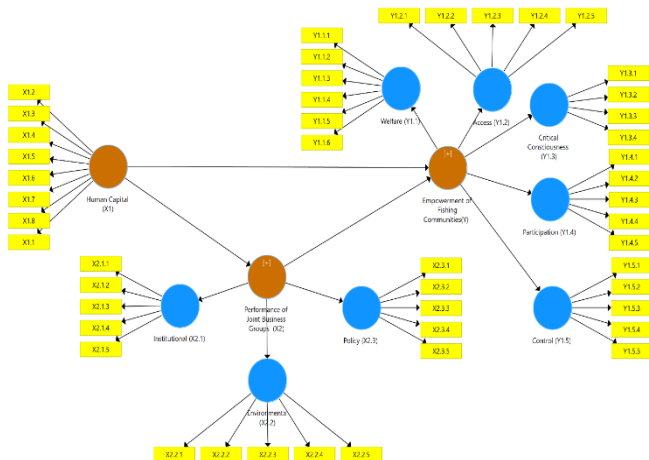


Figure 1. Research Structural Model Theory Formulation Framework.

Measurement Model Analysis (Outer Model): The measurement model, also known as the outer model, describes the relationship between each indicator block and its latent variable. Assessment of the measurement model

involves confirmatory factor analysis to test convergent and discriminant validity. Reliability testing is done using two methods: Cronbach's Alpha and Composite Reliability (Purwanto and Sudargini, 2021). The Outer Model serves as a measurement model to evaluate construct validity and reliability, with parameters such as convergent validity, discriminant validity, composite reliability, and Cronbach's alpha which are very important for the accuracy of the prediction model (Janadari et al., 2016). The results of the outer model processing are depicted in Figure 2.

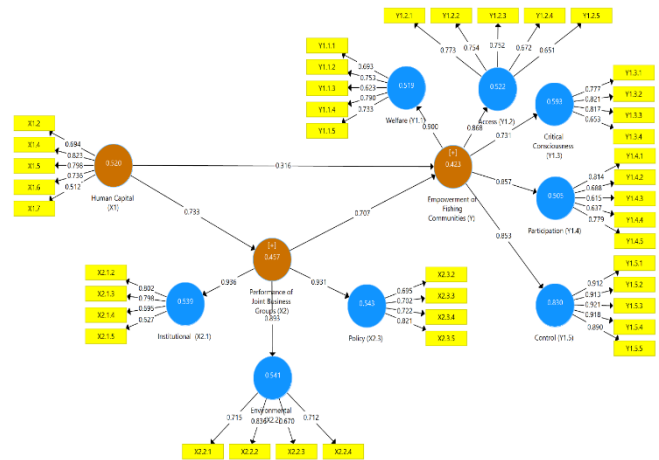


Figure 2. Outer Model Data Processing Results.

Figure 2 illustrates the elimination of various research instruments that are considered invalid (outer loading value < 0.5). In the human capital variable, three instruments were identified as invalid: X1.1 (0.430), X1.3 (0.128), and X1.8 (-0.043). For the joint business group performance variable, there are three invalid instruments (outer loading value < 0.5), namely X2.1.1 (0.259), X2.2.5 (0.107), and X2.3.1 (0.440). In the fishing community empowerment variable, there is one invalid instrument (outer loading value < 0.5), Y1.1.6 (0.031). According to Chan and Idris (2017), the outer loading value between 0.50 to 0.60 is considered sufficient for early stage research on measurement model development. Kamis et al. (2020) and Pervan et al. (2017) also support the opinion that a loading factor value of 0.5 to 0.6 is satisfactory for convergent validity requirements.

In this study, the discriminant validity limit set is 0.5. Another parameter considered in evaluating the cross-loading value is Average Variance Extracted (AVE). If the correlation of the indicator with the latent variable exceeds its correlation with other latent variables, it indicates high discriminant validity (Anekawati et al., 2017). The AVE value in this study is recommended ≥ 0.5 .

The model reliability test uses the composite reliability test, which is reinforced by Cronbach's alpha. Composite reliability assesses the reliability of indicators on a variable, and a variable is considered unreliable or meets the



Cronbach's alpha value if it has a value > 0.6. Latent variables are considered to have good reliability if the composite reliability value exceeds 0.6. The composite reliability coefficient should ideally exceed 0.7, although a value of 0.6 is still acceptable (Hair et al., 2014). Internal consistency is not an absolute necessity once construct validity has been established because valid constructs are inherently unreliable, but the reverse may not be true (Mohajan, 2017). Composite reliability values of 0.6 to 0.7 and Cronbach's alpha values > 0.7 are considered good reliability (Sarstedt et al., 2021).

Table 4. Outer Model of Human Capital Variables, Joint Business Group Performance (KUB), and Fishermen Community Empowerment.

Variables	Dimensions	Indicator	Outer Loading	Composite Reliability	AVE
Human Capital		X1.2	0.694	0.841	0.520
		X1.4	0.823		
		X1.5	0.798		
		X1.6	0.736		
		X1.7	0.512		
Performance of Joint Business Group (KUB)	Institutional Aspects	X2.1.2	0.802	0.822	0.539
		X2.1.3	0.798		
		X2.1.4	0.695		
		X2.1.5	0.627		
		X2.1.5	0.627		
	Environmental Aspects	X2.2.1	0.715	0.824	0.541
		X2.2.2	0.836		
		X2.2.3	0.670		
		X2.2.4	0.712		
	Policy Aspects	X2.3.2	0.695	0.825	0.543
X2.3.3		0.702			
X2.3.4		0.722			
X2.3.4		0.722			
X2.3.5		0.821			
Empowerment of Fishing Communities	Welfare	Y1.1.1	0.693	0.843	0.519
		Y1.1.2	0.753		
		Y1.1.3	0.623		
		Y1.1.4	0.790		
		Y1.1.5	0.733		
	Access	Y1.2.1	0.773	0.844	0.522
		Y1.2.2	0.754		
		Y1.2.3	0.752		
		Y1.2.4	0.672		
		Y1.2.5	0.651		
	Critical Consciousness	Y1.3.1	0.777	0.852	0.593
		Y1.3.2	0.821		
		Y1.3.3	0.817		
		Y1.3.4	0.653		
	Participation	Y1.4.1	0.814	0.835	0.505
Y1.4.2		0.688			
Y1.4.3		0.615			
Y1.4.4		0.637			
Y1.4.5		0.779			
Control	Y1.5.1	0.912	0.961	0.83	
	Y1.5.2	0.913			
	Y1.5.3	0.921			
	Y1.5.4	0.918			
	Y1.5.5	0.890			

Source: Processed Primary Data, 2023.

Figure 2 shows that all research variable instruments are valid because they have met the required convergent validity, namely having an outer loading higher than 0.5. The following are the results of testing the measurement model (outer model) which includes measurement of convergent validity, discriminant validity, composite reliability and Cronbach's alpha of the constructs or variables of human capital, performance of joint business groups, and empowerment of fishing communities.

Structural Model Analysis (Inner Model): The next check after completing the measurement model (outer model) in SmartPLS analysis is the inner model analysis. The findings of the measurement model analysis (outer model) indicate that the constructs or variables meet the criteria for data validity and reliability (Wong, 2013). The following are the results of the structural model assessment (inner model).

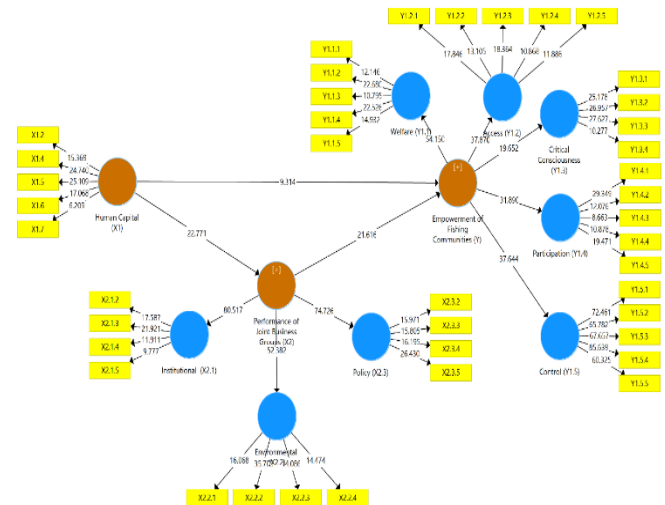


Figure 3. Structural Model Evaluation Results (Inner Model).

Structural model checking is covered in the inner model analysis. In research, inner model analysis consists of assessments such as Path Coefficient, R-Square (R²), Goodness of Fit (GoF), and Q-Square/Predictive Relevance testing. Model fit testing, which includes Goodness of Fit, is used to ensure the fit of the model to the data.

Path Coefficient Test: The path coefficient assessment serves to show the direction of influence exerted by the independent variable on the independent variable (Wong, 2013). A positive path coefficient value indicates a unidirectional influence of the independent variable on the independent variable, while a negative value indicates an opposite influence. The path coefficient test also reveals the extent of the influence of the independent variable on the dependent variable. The results of the Path Coefficient test can be seen in Table 5.



Table 5. Path Coefficient Value of the Research Dependent Variable.

Building	Empowerment of the Fishing Community (Y)
Human Capital (X1)	0.316
Performance of the Fishermen's Community Joint Business Group (KUB) (X2)	0.707

Source: Processed Primary Data, 2023.

Table 5 shows that each variable in this model shows a positive path coefficient. This indicates that as the path coefficient value increases for the independent variable in relation to the dependent variable, the influence between the independent variable and the dependent variable becomes stronger.

R-Square: Analysis of variance or determination test (R-Square), is conducted to assess the extent of the influence of each independent variable on the dependent variable, as indicated by the R-Square value (Wong, 2013). *Coefficient determination* (R-Square) serves as a metric to measure how much endogenous variables are influenced by other variables. A higher R-Square value indicates a more effective prediction model for the proposed research. The R-Square (R²) value can be used to evaluate the impact of certain endogenous variables and whether exogenous variables have a significant influence (Suhan *et al.*, 2018). The R-Square values are presented in Table 6.

Table 6. R-Square value.

Construct	R Square	R Square Adjusted
Empowerment of Fishing Communities (Y1)	0.928	0.927
Joint Business Group Performance (X2)	0.538	0.535

Source: Processed Primary Data, 2023.

Table 6 illustrates that the R-Square for the joint business group performance variable is 0.538 or included in the good influence category. This means that the performance variable of the Joint Business Group (KUB) of the fishing community is influenced by human capital by 53.8%. Then the fishing community empowerment variable has an R-Square value of 0.928 or is included in the strong influence category, meaning that the fishing community empowerment variable is jointly influenced by the human capital variable and the performance of the Joint Business Group (KUB) of the fishing community by 92.8%. According to Hair *et al.* (2014), the R-Square result of 0.67 and above for endogenous latent variables in the structural model indicates that the influence of exogenous variables (which causes the effect) on endogenous variables (which are affected) is considered strong or good. Conversely, if the R-Square result ranges from 0.33 to 0.67, it is categorized as moderate, and if it is between 0.19 and 0.33, it is categorized as weak. In addition, another opinion says that

an R-Square greater than 0.75 indicates a strong model, an R-Square in the range of 0.50-0.75 indicates a poor model, and an R-Square in the range of 0.25-0.50 indicates a weak model (Wu *et al.*, 2022).

Model Goodness of Fit (Gof): Goodness of Fit (Gof) to validate the overall model. Goodness of fit for evaluation of measurement models and structural models, simple measurements for model prediction (Purwanto and Sudargini, 2021). Goodness of Fit (GoF) is a measure of the feasibility of a model. The GoF formula is.

$$GoF = \sqrt{AVE \times R^2}$$

$$GoF = \sqrt{0,55315 \times 0,73278}$$

$$GoF = \sqrt{0,4053}$$

$$GoF = 0,6367$$

The Goodness of Fit (GoF) value is 0.6367. The higher the GoF value, the more accurate the model representation. Samosir *et al.* (2023) categorized the GoF value into three levels, namely the GoF value of 0.1 (weak), 0.25 (moderate), and 0.36 (high). The GoF value of 0.6367 is interpreted as a substantial GoF, which indicates that the measurement model (*outer model*) and structural model (*inner model*) are considered valid or feasible.

Q-Square/Predictive Relevance: Q-Square (Q²) or *predictive relevance* serves as a test of the predictive ability of the structural model. The purpose of testing predictive relevance is to assess the accuracy of the observed values generated by the model and its parameter estimates. It is determined that if the Q-Square value exceeds 0, this indicates that the model has predictive relevance. The Q-Square value can be calculated using the formula: Q-Square (Q²) = 1 - (1 - R₁²) (1 - R₂²) ... (1 - R_p²), where R₁², R₂² ... R_p² is the *R-Square of the* dependent variable (Wong, 2013). The following results present the calculation of the Q-Square value.

$$Q-Square = 1 - [(1 - R_1^2) (1 - R_2^2)]$$

$$= 1 - [(1 - 0,928) (1 - 0,538)]$$

$$= 1 - [(0,072) (0,462)]$$

$$= 1 - (0,0333)$$

$$= 0.9667 \text{ or } 0.97$$

The Q-Square (Q²) or *predictive relevance* value in this study is 0.97. This finding indicates that the research model shows predictive relevance, considering that Q² exceeds 0 and is considered good because it is close to the value of 1. According to Sarstedt *et al.* (2021) the Q-Square value is used to assess the goodness of the model, with a higher Q-Square value indicating a better fit of the structural model with the data.

Hypothesis Testing: Hypothesis testing involves examining the original sample estimated values (O) to ascertain the direction of the relationship between variables. In addition, the t-statistic (T) and P-value (P) are scrutinized to determine the significance level of the relationship. An original sample value close to +1 indicates a positive relationship, while a



value close to -1 indicates a negative relationship. A t-statistic value exceeding 1.96 or a P-value smaller than the significance level (<0.05) signifies the significance of the relationship between the variables (Sarstedt et al., 2021).

Table 7. Effect of Independent Variables on Dependent Variables.

Construct	Original sample (O)	Sample mean (M)	t statistics (O/STDEV)	P values
Human Capital (X1) -> Empowerment of Fishing Communities (Y)	0.316	0.319	8.769	0.000
Human Capital (X1) -> Joint Business Group Performance (X2)	0.733	0.739	21.981	0.000
Joint Business Group Performance (X2) -> Fishermen Community Empowerment (Y)	0.707	0.703	20.411	0.000
Human Capital (X1) -> Joint Business Group Performance (X2) -> Fishermen Community Empowerment (Y)	0.519	0.519	16.113	0.000

Source: Processed Primary Data, 2023.

Table 7 shows that the four hypotheses proposed in this study are valid because each hypothesis has a P Value <0.05 or has a T Statistic value > 1.96 (T Table). Based on the information presented in Table 7, it can be concluded that: (1) human capital has a positive and significant effect on the empowerment of fishing communities; (2) human capital has a positive and significant effect on the performance of joint business groups of fishing communities; (3) the performance of joint business groups has a positive and significant effect on the empowerment of fishing communities; and (4) human capital through the performance of joint business groups has a positive effect on the empowerment of fishing communities in Kendari City, Southeast Sulawesi Province, Indonesia.

The Influence of Human Capital on the Empowerment of Fishermen Communities: The data presented in Table 7 shows that the P-values are $0.0000 < 0.05$. This result shows that human capital has a large and direct impact on the empowerment of fishing communities. This shows that the better the human capital owned by fishermen, the better the empowerment of fishing communities in Kendari City. The results of this study indicate that human capital has an important role in improving the empowerment of fishing communities in Kendari City. Through strengthening collaboration and improving self-quality, human capital allows fishing communities to survive in the face of economic, social, and environmental challenges that exist in community life. Forming a joint business group (KUB) can also improve fishermen's access to available resources such as finance, facilities and infrastructure, and natural resources. This support not only provides economic benefits to the fishing community, but also strengthens social relations within the community. In addition, human capital is also

closely related to the capacity of fishing communities. The capacity of fishers can be improved through various training and education programs, such as sustainable fishing practices, fisheries resource management, and business development. Thus, human capital not only strengthens the economic aspect of fishing communities, but also empowers them socially and politically, and is able to contribute to environmental protection in the area where the fishermen live.

The Influence of Human Capital on Joint Business Group Performance: Table 7 shows that the P-values are $0.000 < 0.05$. This result indicates that human capital has a direct and significant effect on the performance of the Joint Business Group (KUB) of the fishing community. The availability of human capital owned by fishing communities is able to have a real influence on increasing the level of performance of joint business groups (KUBs) in Kendari City. The results showed that fisherfolk who are members of fishing communities generally have good human capital. With increased individual capacity through training and information exchange, as well as support for innovation as a form of self-development, KUBs can produce higher quality products and services that meet market needs. More than just an economic entity, KUBs supported by the good human capital of their members also become the driving force of the local economy, creating jobs, increasing income, and reducing economic inequality in the community, especially in coastal areas. The sustainability of the Joint Business Group (KUB) is also based on the human capital of each member through the support provided and active involvement in every activity carried out. In addition, good quality human capital can improve the quality of life of members and their families through increased income and better access to education, health and basic infrastructure services. Therefore, human capital plays an important role for fishing communities in building a sustainable Joint Business Group (KUB) that is able to empower the community at the village level as a whole.

The Effect of Joint Business Group Performance on Fishermen Community Empowerment: Table 7 shows that the P-values are $0.000 < 0.05$. This result indicates that the performance of the Joint Business Group (KUB) has a direct and significant effect on the empowerment of fishing communities in Kendari City. The Joint Business Group (KUB) itself plays a significant role in increasing the empowerment of fishing communities in Kendari City. KUB itself is an economic entity among local communities that involves collaboration between members of the fishing community to achieve common goals in the development of the fisheries sector. A well-performing KUB can increase access to resources for fishing communities. KUBs are often able to provide access to financial capital, infrastructure, and technology needed to improve productivity and efficiency in fisheries activities. By utilizing these resources collectively, fishing communities are expected to be able to reduce dependency on certain parties and be able to collectively



increase the income of fishing families. In addition, through effective performance, KUBs can also increase fishing communities' access to broader markets, thereby helping to increase the added value of fishery products and create better business opportunities.

The performance of the Joint Business Group (KUB) also plays an important role in improving the capacity and knowledge of fishing communities. KUBs that always conduct training programs and exchange information such as sustainable fishing techniques, fisheries resource management, and business management will be able to improve the skills of fishermen members in managing fisheries businesses more effectively and efficiently and encourage an understanding of the importance of maintaining the sustainability of marine resources. Thus, the performance of the KUB not only impacts on economic aspects, but also on social empowerment and capacity building of the fishing community itself as a whole. A well-performing KUB can also strengthen solidarity and social relations among members of the fishing community. Through active participation in a Joint Business Group (KUB), members of the fishing community will feel more sympathy and bond with each other and will work together to achieve common goals. This togetherness is important in overcoming external challenges, such as climate change or market fluctuations, as well as helping fishing communities to cope with changes that occur specifically in the fisheries sector.

The Effect of Human Capital through Joint Business Group Performance on Fishermen Community Empowerment:

Table 7 shows that the P-values are $0.000 < 0.05$. This result indicates that human capital through the performance of the Joint Business Group (KUB) has an indirect and significant effect on the empowerment of fishing communities. Good human capital has an indirect but significant impact on the empowerment of fishing communities through the performance of joint business groups (KUBs) in Kendari City. Human capital support provided by KUBs in the form of training, infrastructure, or funding will strengthen the capacity of the community to develop themselves to be more qualified and capable of prospering themselves and their families. Through access to financial resources, infrastructure, and technology obtained through KUBs, fishing communities can reduce dependence on external parties and become more independent in managing privately-owned fishing businesses. In addition, the effective performance of KUBs will also enhance the capacity and knowledge of fishing communities through the implementation of training programs and information exchange. Fishing communities who participate in these activities can develop new skills and deepen their knowledge of fisheries businesses. Fishing communities also have the opportunity to interact, share experiences, and build closer relationships with fellow members. These improved capacities, knowledge and relationships not only directly

empower KUB members, but also indirectly help improve the performance and sustainability of the fishing community as a whole. Thus, human capital not only contributes directly to KUB members, but also brings far-reaching benefits to the empowerment of fishing communities.

Conclusions: Human capital has a positive and significant effect on the performance of joint business groups and the empowerment of fishing communities. An increase in human capital owned by fishermen will affect the improvement of the performance of joint business groups and the empowerment of fishing communities in Kendari City. In addition, the performance of joint business groups has a positive and significant contribution in improving the empowerment of fishing communities. The indirect effect of human capital is positive and significant through the performance of joint business groups on the empowerment of fishing communities in Kendari City. So that the empowerment of fishing communities will be able to be achieved by increasing the human capital of fishermen through the effective implementation of the Joint Business Group (KUB) program as a forum for learning and community self-development.

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SDG's Addressed: No Poverty, Decent Work and Economic Growth, sReduced Inequalities, Partnerships for the Goals.

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