

Validating Fishermen's Quality of Life Construct Validity

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ABSTRACT--- Most of quality of life reported was concerning about quality of life (QoL) patients related to any diseases. This research was aimed at finding out fishermen quality of life construct validity used survey by involving 120 fishermen, in Jakarta. The QoL instrument developed based on theoretical dimensions; physical, economic, social and psychological dimensions which consisted of 24 items. Data analyzed by exploratory factor analysis (EFA). Research results revealed that it was only 20 items were valid and its reliability found .820. It was found that all four dimensions for measuring fishermen QoL, have a significant intercorrelation among them and with QoL. Research result showed empirically that all factors loading where higher than .30 and .50 and QoL instrument tend to be uni-dimensional. Considering those findings, it could be concluded that this instrument was appropriate to be applied in social research deal with fishermen quality of life.

Index Terms —Construct Validity, Quality of Life, Confirmatory Exploratory Factor Analysis (EFA).

I. INTRODUCTION

Community means a group of people living together with similar life in some aspects and characteristics in common that can be based on various things like style of worshipping the almighty, skin colour, economic background (rich and poor), working fields, etc.

Indonesia is the world's largest archipelagic State with around 17 508 islands (of which 6 000 are inhabited), and 54 716 km of coastline, and the world's fourth most populous nation (247.5 million) [1]. Indonesia's coastline is the fourth longest in the world. She has vast coastal areas which is inhabited by about two million fishermen. Small-scale fishing communities are sustained by fishing livelihoods, which require community members' sustained access to fisheries capital. It is estimated that 60% of the fishermen in villages still have average income below the minimum requirements for living [2]. It sound ironic, there are many coastal villagers who have relatively low standard in term of quality of life. Fishermen capability to meet the human basic needs for daily life was so beyond standards.. For fishermen societies, physiological needs is the most important need as a basic necessities of life. However, fishermen have very significant influences in improving the productivity of the national fisheries, it might be not related to the enhancement in their quality of life [3].

The scope of quality of life is wide, including how to measure "the goodness" of someone from various aspects of life as follow: This evaluates emotional reaction to events, dispositions, fulfilling and satisfying life, taste, and the

satisfaction of job and personal relation. Warner (2006) stated that quality of life was welfare feeling, fulfilling or satisfying gained from external environmental factors [4]. WHO also declared quality of life as individual perception about living quality in the context of cultural system and values where they live in according to the objectives, hope, and the most appropriate life standard.

The human being needs always changes and varied as they will make all efforts to satisfy their needs. It is related to physical and economic factors in fulfilling the welfare of fishermen. One indicator to measure the welfare of fishermen is the level income received from the fishing. As explained earlier that the condition of welfare of fishermen in Indonesia is still low so that it can be said the quality of life is not good.

Job as an asset of capabilities included materials and social resources and activities needed to facilitate the life of a human being [5]. Continuous job while the people can keep the stress and defense or enhance asset capabilities from now and develop it in the future, with the conservation of the basic natural resources, these are characteristic of fishermen life [6]. Collaborative governance can foster sustainable fisheries if decision-making rights and responsibilities of marine stewardship are shared among government, the fishing industry, and civil society. As global food security and human welfare are threatened by accelerating human population growth and environmental impacts, decisions of how to use and protect the environment physically will involve collective choices in which all citizens have a stake – and a right [7].

The job and environmental condition are the main things for the human being especially fishermen to support their daily needs, and to upgrade their quality of life. Quality of life a community also could be identified from social-cultural aspects. The social structures built in the communities of fishermen are known as open social structures. The social structure of the fishing community is open and flexible in providing space for the mobility of individual fishermen who are engaged in it.

Psychologically, happiness, the way of living together, and caring to help each other can describe the quality of life. Fishermen live together and become a system of kinship union. This is reflected in that the person who wants to help others is like one body if someone feels pain then the others also feel it (called empathy). The formation of groups in the community or fishing is a very important thing, because the group insists on the principle of solidarity in order to realize

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the spirit and cooperative activities [8]. That is why, fishermen quality of life need to be empowered, but to do this, QoL indicators should be able to be identified first.

Therefore, research problem can be stated “how fishermen quality of life (QoL) measurement could be developed on the basis of its construct validity in term of QoL dimensionality as a valid instrument.”

The fishing communities involved in the unfortunate situation have aspirations (low aspiration) as a form of realistic aspirations [9]. This may also be caused by a more fatalistic culture, lack of willingness to pursue goals, lack see personal progress, feelings of helplessness or inability, the feeling to always fail, judge yourself feeling negative, the option position as a labourer and even a degree of compromise is pathetic [10]. In other word, quality of life of them should be improved.

Phillips (2018) argued that on the measurement of quality of life, is a conceptualized 'life' used to judge 'quality' [11]. Definition of quality of life is individual's perception of their position in life in the context culture and value system in which they live and in relation to their goals. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, level of independence, social relationships, personal beliefs and their relationship to salient features of their environment. There are five components of quality of life [12] follows: 1) happy student; 2) happy organization; 3) happy environment; 4) happy family; dan 5) happy community.

Based on Warner (2006), quality of life is a feeling of well-being, fulfillment, or satisfaction resulting from factors in the external environment [4]. According to Paraskevi Theofilou (2013), the term of 'quality of life' refers to 'subjective well-being' defined as optimum levels of mental, physical, role, social functioning, including relationships, and perception of health, fitness, life satisfaction and well-being" [13]. Mark Repley (2003) also defined that quality of life are happiness, life-satisfaction, well-being, self-actualization, freedom from want, objective functioning, a state of complete physical, mental and social well-being not merely the absence of disease, physical health, psychological condition, independent level, social relation, personal trust related to their living area [14].

These quality of life aspects include cognitive functioning; emotional functioning; psychological well-being; general health; physical functioning, physical symptoms and toxicity; role functioning; sexual functioning; social well-being and functioning; and spiritual existential issues [15]. The quality of life reflects multidimensional concepts consisting of four health dimensions: 1) physical health, 2) mental health, 3) social health, and 4) functional health [16]. The neighborhood environment and social support are known to influence physical activity participation. In urban area the quality of life can be improved by doing an evaluation through cognitive maps in urban environments [17].

II. MATERIALS AND METHOD

The purpose of this research was to find out the items validity and reliability of fishermen QoL instrument (24 items) and its construct validity by applying factor analysis (EFA) based on its eigenvalue > 1.00 and factor loading > .300 or .50 (Hair, et.al., 2010; Field, 2005).^{13,29} It was theoretically measured based on four dimensions of QoL namely physical, economic, social, and psychological dimensions. Each dimension consisted of two factors. A survey method used by involving 120 fishermen in Jakarta. Data analyzed by Pearson Product Moment for items validity, alpha Cronbach for reliability and exploratory factor analysis (EFA) for instrument construct validity.

III. RESULTS

There were four items was not valid due to its minus correlation between those items with scale scores (range from .120 to .834). It found that reliability was .820, meant that it was almost 65% (n = 120; 24 items) of respondents felt that QoL instrument could be trusted. It has been supported also by matrix correlation shown by table 1 below that fishermen QoL has been contributed significantly by physic, economic, social and psychological dimensions.

Table 1.

		Qol	phys	econ	Soc	Psy
Pearson Correlation	Qol	1,000	,811**	,679**	,891**	,714**
	Phys	,811	1,000	,429	,660	,383
	Econ	,679	,429	1,000	,582	,287
	Soc	,891	,660	,582	1,000	,497
	Psy	,714	,383	,287	,497	1,000

Based on KMO and Bartlett's test computation, it could be stated that with the KMO = .740, factor analysis was appropriate to be conducted in term of number of factor involved. Bartlett's test result indicated that there was intercorrelation existed among factors significantly (see Table 2).

Table 2.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.740
Bartlett's Test of Sphericity	Approx. Chi-Square	1396.898
	Df	276
	Sig.	.000

Considering confirmatory factor analysis results, it was found that there were all factors have higher factor loading of .30 or .50 [18]-[19]. These factors could be interpreted that they measured, either physic or economic dimensions at the same situation, therefore, in measurement theory, both factors tend to be ambiguity.

Table 3.

Factors based on QoL dimensions	Component						
	1	2	3	4	5	6	7
QOL_Physical_a1	.597			-.139	.221		-.134
QOL_Physical_a2		-.126			.809		
QOL_Physical_a3	-.105	.163		.803			.287
QOL_Physical_b1	.770	.170		-.217	.216		
QOL_Physical_b2	.402	.112	.117	-.288	.585		
QOL_Physical_b3	.131			.175			.780
QOL_Physical_b4	.657		.147	-.226	-.172		
QOL_Economic a		.710				-.289	
QOL_Economic_b1	-.247			.823			
QOL_Economic_b2	.688	-.206		.331	.128	-.368	
QOL_Economic_b3	.452	.230	.213			-.474	.116
QOL_Social a	.516	-.146		.260	.235		-.414
QOL_Social_b1	.204	.690			.115	.118	-.259
QOL_Social_b2	.673	.141	.242		.233	-.193	
QOL_Social_b3		.787				.274	
QOL_Social_b4	.783	.146		-.107	.156	-.228	
QOL_Social_b5	.896	.174				-.122	
QOL_Psychologic_a1	.783		.255				.113
QOL_Psychologic_a2	.709				-.142	-.132	
QOL_Psychologic_a3		.660	-.108		-.140		.261
QOL_Psychologic_b1	-.127	.267				.836	
QOL_Psychologic_b2					-.507	.328	-.521
QOL_Psychologic_b3	.197		.890				
QOL_Psychologic_b4	.180		.888			-.113	.121

There were 17 factors has distributed mostly around 4 components after rotation, meant that its dimensionality cannot be doubted. Based on this logical interpretaion, QoL instrument confirmed with this exploratory finding. This is a novelty of research findings which has a theoretical contribution toward the instrument development based on four dimensions namely, physic, economic, social and psychological dimensions which closely support Flanagan (1978) concepts of Qo [20].

IV. DISCUSSION

A. Figures and Tables

There were many research results dealing with QoL based on a variety of QoL dimensions and unit analysis. A factor analysis has been used for validating QoL of 1241 chronically ill and healthy adults. The three factors QoL which consisted of (1) relationship and material well-being; (2) health and functioning; and (3) personal, social, and community commitment has been validated in measuring quality of life across diverse patient group [21].

Research related to QoL has been carried out and reported in 1997 by Fayers & Hand, validated QoL instrument for patients which a variety of diseases which found out that exploratory factor analysis (EFA) was irrelevant as a method of scale validation for QoL instrument that contained causal indicators instead of effect indicators. It could not be compared, since this research article dealt with fishermen QoL which could be said “healthy sample,” and used a confirmatory factor analysis that was relevant to causal indicators reflected by all of items [22].

By using different indicators, other research found that correlation between income, savings, housing, family surroundings and fishing equipment contributed to the enhancement of QoL among fishermen on the West Coast of Peninsular Malaysia [23][25]. It was also found that, by using different dimensions, results revealed that family and friends are important indicators related to positive QoL, while economic indicators were not important. Their research has developed QoL dimensions for measuring QoL’ fishermen which consisted of physical and well-being, relation with other people, social community and civic activities, personal development and fulfillment, and recreation [24][26].

However, it was difficult to discuss and make a comparison or try to find a similarity, since most of the researchers, who worked on the same field, in this case related to research about quality of life especially concern with fishermen, used a variety and different QoL dimensions or factors. Nevertheless, its knowledge contribution to the development of QoL construct validity, could be appreciated to enrich field of social research, particularly in the field of QoL measurement which could be beneficial for policy makers in empowering fishermen.

V. CONCLUSION

It could be concluded that fishermen QoL instrument would be measured based on physic, economic, social



and psychological dimensions, with high construct validity. It could be implied that for policy implication where local government or related department aware of delivering social or financial supports policies, this fishermen QoL instrument could be taken into consideration to be used as a basis for empowering fishermen quality of life. It can be suggested that QoL instrument might be combined with those dimensions used either for healthy respondents or for chronic illness or for peasants, factory workers, or of course for fishermen.

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REFERENCES

1. FAO, *Fishery*, Available at: <http://www.fao.org/fishery/facp/IDN/en>, 2018.
2. Orsini, F., Kahane, R., Nono-Womdim, R; and Gianquinto, G. Urban agriculture in the developing world: A review. *Agronomy for Sustainable Development*, Vol. 33 (4) October, 2013, pp. 695-720. <https://hal.archives-ouvertes.fr/hal-01201393/document>.
3. Marron, D. Governing Poverty in a Neoliberal Age: New Labour and the Case of Financial Exclusion. *New Political Economy*, 18 (6) Dec. 2013, pp. 785-810. https://eprints.whiterose.ac.uk/108610/3/DG_SBNpe28Nov2016pdf
4. Warner, J Bejamin. *Community Quality-of-Life Indicators*. Netherlands 2006, <http://library.sgu.ru/ftp/QL/bok%253A978-94-007-6501-6.pdf>
5. Chambers, R. and Conway, G. *Sustainable Rural Livelihoods Practical Concepts for the 21st Century*, 1992, <https://www.ids.ac.uk/publications/sustainable-rural-livelihoods-practical-concepts-for-the-21st-century/>
6. Carney, D. The White Paper's of Agriculture, Natural Resources and Rural Livelihoods, *Journal of International Development*, Vol. 10 Issue 2, 1998, [https://doi.org/10.1002/\(SICI\)1099-1328\(199803/04\)10:2<269:AIDJID523>3.0.CO;2-X](https://doi.org/10.1002/(SICI)1099-1328(199803/04)10:2<269:AIDJID523>3.0.CO;2-X)
7. Lam, M. E. Of Fish And Fishermen: Shifting Societal Baselines to Reduce Environmental Harm in Fisheries, *Ecology and Society*, 17(4): 2012., <http://dx.doi.org/10.5751/ES-05113-170418>
8. Rafiy, M., Tibertius N., Muthalib, A.A. Study of Improvement Fishermen Welfare through Improved Productivity And Model Development In The Coastal North Konawe. *The International Journal of Engineering And Science (IJES)*, 2015. Volume 4 Issue 12. pp. 62-67. <http://www.theijes.com/papers/v4-i12/Version-2/J041202062067.pdf>.
9. Willoughby-Herrard, T. 'I'll Give You Something to Cry About': The Interracial Violence of Uplift Feminism in the Carnegie Poor White Study Volume, The Mother and Daughter of the Poor Family. *South African Review of Sociology*. 2010 41 (1), pp. 78-104. https://www.faculty.uci.edu/profile.cfm?faculty_id=5561
10. Barrett, A; and Mosca, I. "Social Isolation, Loneliness and Return Migration: Evidence from Older Irish Adults," *Journal of Ethnic and Migration Studies*, 39 (10), 2013, pp. 1659-1677. <https://www.tandfonline.com/doi/abs/10.1080/1369183X.2013.833694>
11. Phillips, Catherine. Quality of life in the contemporary politics of healthcare, but what is a life, *Journal of Aging Studies*, 2018, pp. 9-14, <https://doi.org/10.1016/j.jaging.2017.11.001>.
12. PrawitErawan. Healthy Schools Promotion: An Experience in Thailand. 2015. *Journal Social and Behavioral Sciences*, 2015, pp. 513-521, <http://doi:10.1016/j.sbspro.2015.04.102>.
13. Paraskevi Theofilou. Quality of Life: Definition and Measurement, *Europe's Journal Psychology*, 2013, pp. 151-162. <https://doi.org/10.5964/ejop.v9i1.337>.
14. Mark Repley. *Quality of life Research*, London. Sage Publication, 2003, p.27. https://www.academia.edu/36498003/Williams_Gyne_cology_2nd_Edition_
15. Walters, Stephen J. *Quality of Life Outcomes in Clinical Trials and Health-Care Evaluation: A Ractical Guide to Analysis and Interpretation*, United Kingdom: A John Wiley and Sons, 2009, <https://www.wiley.com/en-aw/Quality+of+Life+Outcomes+in+Clinical+Trials+and+Health+Care+Evaluation%3A+A+Practical+Guide+to+An+alsis+and+Interpretation-p-9780470753828>
16. Macniven, Rona., et al. Physical activity, Healthy Lifestyle Behaviors, Neighborhood Environment Characteristics and Social Support Among Australian Aboriginal and Non-Aboriginal Adults, *Journal Preventive Medicine Reports*, Elsevier. 2016, pp. 203 – 210, <http://dx.doi.org/10.1016/j.pmedr.2016.01.006>.
17. Patricia A.M. Faria. et al. Combining cognitive mapping and MCDA for improving quality of life in urban areas, *Journal cities*, 2018, pp. 1-12. <https://doi.org/10.1016/j.cities.2018.02.006>
18. Hair, et.al. *Multivariate Statistics Analysis*. Boston Mass.: Pearson Hall, 2010, https://is.muni.cz/el/1423/podzim2017/PSY028/um/Hair_Multivariate_data_analysis_7th_revised.pdf
19. Field, A.P. *Discovering Statistics Using SPSS (2nd Edition)*, London: Sage, 2005.
20. Flanagan JC. A Research Approach to Improving Our Quality of Life, *American Psychology*, 33, 1978, pp. 138-147. DOI: https://www.researchgate.net/publication/232535447_Flanagan_J_CA_research_approach_to_improving_our_quality_of_life_Am_Psychologist_2_138-147
21. Burckhardt, Carol S., Anderson, K.L. Archenholtz, B. Hägg, O. "The Quality of Life Scale: Evidence of Construct Validity." *Health and Quality of Life Outcomes*. 2003, <https://doi.org/10.1186/1477-7525-1-59>
22. Fayers, P.M. & D.J. Hand, "Factor Analysis, Causal Indicators and Quality of Life," *Quality of Life Research*, 6, 1997, pp. 139-150. DOI: https://www.jstor.org/stable/3559926?seq=1#page_scan_tab_contents
23. Ghani Norizan Abul. Quality of Life (QoL) of Fishermen in West Coast States of Peninsular Malaysia, *International Journal of Academic Research in Business and Social Sciences*. Vol. No. 4, 2017, DOI: 10.6007/IJARBS/v7-i4/2808
24. Bravo-Olivas, M.L., Chávez-Dagostino, R.M., Malcolm, C.D., Espinoza-Sánchez, R. "Notes on the Quality of Life of Artisanal Small-Scale Fishermen along the Pacific Coast of Jalisco, México." *Sustainability*. 2015, doi:10.3390/su7056046.
25. Biggart, Nicole Woolsey, *Readings in economic sociology*. USA. Blackwell Publisher Ltd. 2002, p. 301. <https://www.amazon.com/Readings-Economic-Sociology-Woolsey-Biggart/dp/0631228624>

26. Mollenkopf, Heidrun. et.,al. *Quality of Life in Old Age International and Multi-Disciplinary Perspective*, Springer, 2007, p.50.
<https://www.springer.com/gp/book/9781402056819>

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