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Influences of Number of Family Members and Students in Education on Socio-Economic Status of Fishermen at Gezira State, Sudan (Case Study)

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Abstract

The present investigation was conducted to provide baseline information of socio economic status in Gezira State localities and to study Influences of Number of Family Members and Student in Education on Socio-economic status of Fishermen at Gezira State, Sudan. The study was conducted through visits and personal interviews of fishermen using specific designed questionnaire to study the Impact of Experience and Marketing Method on Socioeconomic Status of Fishermen community. The fishermen were asked specific questions through questionnaire. A total of 144 fishermen were investigated and interviewed. 12 representative fishing sites were visited though the proposed investigation. The data was analysed using statistical package for Social Science (SPSS). Frequency and basic descriptive statistics was calculated and Chi-Square test of independency was performed for quetionaire′s analysis. The findings of the study showed that, The findings of the study showed that, The findings of the study showed that, There were highly significant differences (P≤0.01) in member of family number among fishermen on all localities. And there were significant differences (P≤0.05) in number of student in education among all localities.

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Keywords: Family Number, Members, Student, Education, Locality

Introduction

Industrial fisheries are considered as highly productive worldwide, however Freire and Allut (2000) [9] stated that small-scale coastal fisheries are believed to be of much greater social significance than industrial fisheries (FAO, 1995). Despite this fact, small-scale fisheries have been systematically ignored and marginalized in both developing and developed countries (Berkes, 2003) [4]. Indeed, over the past several decades this type of fishery has received little more than scant attention by national and international development organizations (Panayotou, 1982) [19]. Quantitative information on small-scale fisheries receives scant coverage in the literature (Salas *et al*., 2007) [21].

Fishing and fisheries play an important role in the economics of the developing countries and contribute to intake of the animal protein, the generation of employment and the household income (Kent, 1997) [12]. The artisanal fisheries are more important for the incomes and food safety of the local people in the developing countries (Mozumder *et al*., 2018) [17]. The small-scale fisheries are based on the traditional fishing methods (Khalid *et al*., 2008, Freire *et al*., 2000) [13, 9]. In the developing countries, fishing in small-scale fisheries is often part of a complex set of livelihood activities, which may include farming and other part-time occupations (Jentoft, 2000) [11]. The small-scale fisheries deal about 50% of the global fisheries export (McClanahan *et al*., 2015) [15]. Jacquet and Pauly 2008) [10] pointed-out that, the artisanal fisheries employ over 12 million people worldwide.

Sudanese marine fisheries are small-scale artisanal. Sudan's artisanal fisheries use small amounts of capital and energy for fishing operations because they frequent the shallow waters close to the shore areas. The fishers usually fish in limited areas near their villages (Olsen *et al*, 2021) [18]. Along the Sudanese Red Sea coast, fishers use part of their catch for their self-consumption, while the bulk of the total catch is for sale. The fishers in the Sudanese coast typically use the hooks and lines for the reef fish and gillnets for the bottom fish (Olsen *et al*, 2021, and Mishrigi, 1993) [18, 16]. The handlines fishing can be very beneficial, The fishers in the Sudan use different types of boats, generally dugout canoes of two to three meters in length, which take one to two fishers using paddles (or sometimes sail) to fish in inlets and behind the fringing reef (Reed, 1964) [20]. The other common types boat are houries of three to five meters in length and are mainly used for handlining along the fringing reefs and in the deeper water just off the reefs. They can take two to three fishers and usually have a sail and paddles (Reed, 1964) [20]. The bigger than the houries there are the rare felukas (wooden oars or bamboo poles) of five to seven meters in length. Which, unlike the houries, the felukas are fitted with a transom stern and usually have a sail. Both the houries and the felukas are sometimes equipped with outboard engine of three to eight hp (houries) and 10 to 12 hp (felukas) (Reed, 1964) [20]. The biggest types of the boats use by the Sudanese fishers are the launches (sambouk), which range from seven to 11 meters in length and are usually fitted with an inboard engine of 30 to 100 hp. They are used for handlining further offshore (Mishrigi, 1993) [16]. In addition, there are relatively few large wooden or steel-hulled fishing vessels, which are engaged in limited seasonal activities. Sudanese marine fisheries are not of great economic importance, with total catch being only about 300 tonnes per year, and the prospects for large scale development do not look very bright. With gradual improvements in equipment and the introduction of mechanized boats, production is likely to increase within a few years. With the increase of the population, especially in the city of Port Sudan, fisheries will play an increasingly important role in providing food of high nutritional value and employing more local people in the fishing industry (Reed, 1964) [20].

Socio-economic studies on fisheries have been met with worldwide interest in the last 20 years (Baticados 2004. Witherell *et al*., 2000) [3, 26]. These studies provide basic reference for the necessary management measures increasing thus their overall efficiency. For this reason, the demand for socio-economic data has increased as stated in the Green Paper on the Future of the Common Fisheries Policy of the European Union (European Commission, 2001)). As a result, a number of studies concerning socioeconomic parameters of fisheries have been carried out in countries of the northern (Dominguez *et al*., 2004, Mardle *et al*., 2002, Alban , 2004, Virtanen, 2001) [6, 14, 2, 24] and southern Europe and the Mediterranean (Freire and Garcia, 2000, Virtanen, 2001, Whitmarsh *et al*., 2003) [9, 24], in the latter case mostly concerning small-scale fisheries which is the sector with the highest social importance (Freire and Garcia, 2000) [9]. In the same context, the level of regional dependence on fisheries has been examined in a series of studies (Brookfield *et al*., 2005, Tzanatos *et al*., 2005) [5, 23].

Sudan has great sources of fishery resources represented in the Nile and its tributaries and lakes with a total length of 6400 km and an area of 2 million hectares representing reservoirs lakes on the Nile and a total area of about one million hectares. Exclusive economic 96100 km There are also non-Nile watercourses in the valleys and valleys with an estimated water of about 4.9 billion and resources are 8.2 billion cubic meters and groundwater estimated at about 2.8 billion cubic meters and groundwater estimated at 4.9 billion. The above-mentioned resources consist mainly of inland water from aquaculture, finfish and other aquatic organisms. Molluscs crustaceans, fisheries are characterized by the nature of livelihood with a margin for commercial activities, especially in the open and deep areas of marine water. Inland water area in Sudan (rivers, lakes, reservoirs) around 2 million hectares representing the Nile and its tributaries and associated lakes and reservoirs lakes total length of about 6400 km 4000 miles and dam areas stretch half the area (Ahmed, 2017) [1].

Justification

The Number of Family Members and Student in Education on influences on socio-economic status of Fishermen**.**

Objective

To study the influences of number of family members and students in education on socio-economic status of fishermen community at Gezira State, Sudan.

Methodology

- **Study area:** The study was conducted in fishing areas at Gezira State localities (South gezira, Alhasahisa, Wad Medani, Alkamleen, Almnagil, Algurashi, East gezira, and Um elgura), Sudan.
- **Experimental Design:** The study was conducted through visits and personal interviews of fishermen using specific designed questionnaire to study the influences of number of family members and students in education on socio-economic status of fishermen community at Gezira State, Sudan. The fishermen were asked specific questions through questionnaire. A total of 12 fishing sites were visited though the proposed investigation.
- **Sampling:** A total of 144 fishing area were visited. 12 representative fishermen were randomly asked to fill-out the questionnaire in fishing sites in all localities of Gezira State.

Statistical analysis

The statistical package for Social Science Computer Software (SPSS version 14.0) was used to analyze data. Frequency and basic descriptive statistics was calculated and Chi-Square test (χ^2) test of independency was performed for quetionaire′s analysis. A P-value of ≤ 0.05 was considered indicative of a statistically significant difference.

Results and Discussion

Table 1: The influence of number of family numbers on socio-economic status of community at Gezira State, Sudan

		Number of family members %					
		2	3	4	More than 5	none	Total
Localities	South gezira	6	4	1	17	3	31
		75.0%	28.6%	11.1%	19.3%	12.0%	21.5%
	Alhashisa	0	1	4	14	3	22
		0%	7.1%	44.4%	15.9%	12.0%	15.3%
	Wad medani	2	3	1	15	6	27
		25.0%	21.4%	11.1%	17.0%	24.0%	18.8%
	Alkamleen	0	1	3	13	4	21
		0%	7.1%	33.3%	14.8%	16.0%	14.6%
	Almnagil	0	1	0	14	3	18
		0%	7.1%	0%	15.9%	12.0%	12.5%
	Algurashi	0	1	0	9	0	10
		0%	7.1%	0%	10.2%	0%	6.9%
	East gezira	0	1	0	5	2	8
		0%	7.1%	0%	5.7%	8.0%	5.6%
	Umalgura	0	2	0	1	4	7
		0%	14.3%	0%	1.1%	15.0%	4.9%
	Total	8	14	9	88	25	144
	%	100%	100%	100%	100%	100%	100%
	S.L.	**					

S.L. ≡ Significance Level.
Pearson Chi-square ≡ 45.71
** ≡ Highly Significant Different (P ≤ 0.01)

The study was conducted in fishing areas at Gezira State localities (South gezira, Alhasahisa, Wad Medani, Alkamleen, Almnagil, Algurashi, East gezira, and Um elgura), Sudan. Influences of Number of Family Members and Students in Education on socio-economic status of Fishermen at Gezira State, Sudan. The fishermen were asked specific questions through questionnaire. A total of 12 fishing sites were visited though the proposed investigation.

The findings of the present study showed some fact on the manifesto of the education levels and age among Gezira State Localities.

Table (1), showed that, Influences of Number of Family Members on socio-economic status of Fishermen at Gezira State localities: South gezira; (2, 3, 4, more than 5 and none members) were (75.0%, 28.6%, 11.1%, 19.3%, and 12.0%, respectively. Alhasahisa; (2, 3, 4, more than 5 and none members) were (0.0%, 7.1%, 44.4%, 15.9%, and 12.0%, respectively. Wad medani (2, 3, 4, more than 5 and none members) were (25.0%, 21.4%, 11.1%, 17.0%, and 24.0%, respectively. Alkamleen (2, 3, 4, more than 5 and none members) were (0.0%, 7.1%, 33.3%, 14.8%, and 16.0%, respectively. Almanagil (2, 3, 4, more than 5 and none members) were (0.0%, 7.1%, 0.0%, 15.9%, and 12.0%, respectively. Algurashi (2, 3, 4, more than 5 and none members) were (0.0%, 7.1%, 0.0%, 10.2%, and 0.0%, respectively. East Gezira (2, 3, 4, more than 5 and none members) were (0.0%, 7.1%, 0.0%, 5.7%, and 8.0%, respectively. And Um elgura (2, 3, 4, more than 5 and none members) were (0.0%, 14.3%, 0.0%, 1.1%, and 15.0%, respectively. There were highly significant differences (P≤0.01) in number of family members among fishermen on all localities. Wad medani locality showed the highest percentage of none family member, followed by Alkamleen. Whereas South Gezira locality; showed the highest percentage of two family members. On other site, Algurashi locality showed zero percent of none family member. On the contrary Alhasahisa, Alkamleen, Almanagil, Algurashi, East Gezira and Um elgura localities showed zero percent of two family members. On the other hand, Alhasahisa locality showed the highest percent of four family members followed by Alkamleen locality. The study discovered there is wide variety of the influence of number of family numbers on socio-economic status of community at Gezira State. So, this variety might be due to daily expense of family because the more family members the more daily expense.

Table 2: The influence of number of students in education on socio-economic status of fishermen community at Gezira State, Sudan

		Number of student in education %				Total
		1 - 5	5 - 10	10 -15	none	
Localities	South gezira	12	5	1	13	31
		15.0%	20.8%	25.0%	36.1%	21.5%
	Alhashisa	14	4	0	4	22
		17.5%	16.7%	0%	11.1%	15.3%
	Wad medani	17	4	0	6	27
		21.3%	16.7%	0%	16.7%	18.8%
	Alkamleen	15	2	0	4	21
		18.8%	8.3%	0%	11.1%	14.6%
	Almnagil	7	5	3	3	18
		8.8%	20.8%	75.0%	8.3%	12.5%

	Algurashi	7	3	0	0	10
		8.8%	12.5%	0%	0%	6.9%
	East gezira	5	1	0	2	8
		6.3%	4.2%	0%	5.6%	5.6%
	Umalgura	3	0	0	4	7
		3.8%	0%	0%	11.1%	4.9%
	TOTAL	80%	24%	4%	36%	144
	%	100%	100%	100%	100%	100%
	S.L.	*				

S.L. ≡ Significance Level.
Pearson Chi-square ≡ 34.39
* ≡ Significant Different (P ≤ 0.05)

Table (2), showed that, the influence of number of student in education on socio-economic status of fishermen community at Gezira State localities: South gezira; (1 -5, 5 – 10, 10 – 15, and none students) were (15%, 20.8%, 25%, and 36.1%, respectively. Alhasahisa; (1 -5, 5 – 10, 10 – 15, and none students) were (17.5%, 16.7%, 0.0%, and 11.1%, respectively. Wad Medani; (1 -5, 5 – 10, 10 – 15, and none students) were (21.3%, 16.7%, 0.0%, and 16.7%, respectively. Alkamleen; (1 -5, 5 – 10, 10 – 15, and none students) were (18.8%, 8.3%, 0.0%, and 11.1%, respectively. Almnagil; (1 -5, 5 – 10, 10 – 15, and none students) were (8.8%, 20.8%, 75%, and 8.3%, respectively. Algurashi; (1 -5, 5 – 10, 10 – 15, and none students) were (8.8%, 12.5%, 0.0%, and 0.0%, respectively. East gezira; (1 -5, 5 – 10, 10 – 15, and none students) were (6.3%, 4.2%, 0.0%, and 5.6%, respectively. and Um elgura: (1 -5, 5 – 10, 10 – 15, and none students) were (3.8%, 0.0%, 0.0%, and 11.1%, respectively. There were significant differences (P≤0.05) in students numbers among all localities. Almanagil locality was recorded the highest percent in the students number in education in the option of (5 to 10 student). Whereas Umalgura was recorded the lowest percent in student number in education in all options. The highest percent of none educating number were showed in South Gezira locality. According to the findings; the highest number students in education in general were found in Wad Medani locality which is the capital of Gezira State.

Conclusion

The study was conducted through visits and personal interviews of fishermen using specific designed questionnaire to study the influences of number of family members and students in education on socio-economic status of fishermen community at Gezira State, Sudan. The fishermen were asked specific questions through questionnaire. A total of 12 fishing sites were visited though the proposed investigation.

The findings of the study showed that, There were highly significant differences (P≤0.01) in member of family number among fishermen on all localities. And there were significant differences (P≤0.05) in number of student in education among all localities.

Recommendations

According to the findings of the study, recommended that;
Attention should be focused on the students education of fishermen community to improve their future.

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References

1. Ahmed MM. Characteristics of socio-economic, fishermen, Jebel Aulia dam. 2017. 183 p.
2. Alban F, Le Floc'h P, Boncoeur J. The impact of economic and regulatory factors on the relative profitability of fishing boats: A case study of the seaweed harvesting fleet of Northwest Brittany (France). Aquat Living Resour. 2004;17:185-93.
3. Baticados DB. Fishing cooperatives participation in managing near shore resources: the case in Capiz, central Philippines. Fish Res. 2004;67:81-91.
4. Berkes F. Alternatives to conventional management: lessons from small-scale fisheries. Environments. 2003;31:5-19.
5. Brookfield K, Gray T, Hatchard J. The concept of fisheries-dependent communities A comparative analysis of four UK case studies: Shetland, Peterhead, North Shields and Lowestoft. Fish Res. 2005;72:55-69.
6. Dominguez-Toreiro M, Freijeiro-Alvarez AB, Iglesias-Malvido C. Co-management proposals and their efficiency implications in fisheries management: the case of the Grand Sole fleet. Mar Policy. 2004;28:213-9.
7. European Commission. Green Paper on the future of the Common Fisheries Policy, COM (2001) 135. Brussels: European Commission; 2001. 40 p.
8. Food and Agriculture Organization. The state of world fisheries and aquaculture. Rome: FAO Fisheries Department; 1995. 57 p.
9. Freire J, Garcia-Allut A. Socioeconomic and biological causes of management failures in European artisanal fisheries: the case of Galicia (NW Spain). Mar Policy. 2000;24:375-84.
10. Jacquet J, Pauly D. Funding Priorities: Big Barriers to Small-Scale Fisheries. Conserv Biol. 2008;22:832-5.
11. Jentoft S. The Community: A Missing Link of Fisheries Management. Mar Policy. 2000;24:53-9.
12. Kent G. Fisheries, Food Security, and the Poor. Food Policy. 1997;22:393-404.
13. Khalid A, Farah OM, Ali SM. Aquatic Resources of

Sudan Possibility of Their Utilization. In: Proceedings of the First Scientific Conference; 2008; Khartoum. p. 141-8.
14. Mardle S, Pascoe S, Boncoeur S, Le Gallic B, García-Hoyo JJ, Herrero I, *et al*. Objectives of fisheries management: case studies from the UK, France, Spain and Denmark. Mar Policy. 2002;26:415-28.
15. McClanahan T, Allison EH, Cinner JE. Managing Fisheries for Human and Food Security. Fish Fish. 2015;16:78-103.
16. Mishrigi SY. Identification Study for Sudan Red Sea Fisheries. Khartoum: Republic of Sudan, Ministry of Economic Planning and Investment (MEPI), Project Preparation Unit; 1993.
17. Mozumder MMH, Shamsuzzaman MM, Rashed-Un-Nabi M, Harun-Al-Rashid A. Socio-Economic Characteristics and Fishing Operation Activities of the Artisanal Fishers in the Sundarbans Mangrove Forest, Bangladesh. Turk J Fish Aquat Sci. 2018;18:789-99.
18. Olsen E, Axelsen BE, Moland E, Utne-Palm AC, Elamin EM, Mukhtar MA, *et al*. Distribution and Diversity of Fish Species along the Sudanese Red Sea Coast Based on Three Combined Trap and Gillnet Surveys. Fish Res. 2021;242:106032.
19. Panayotou T. Management concepts for small-scale fisheries: economic and social aspects. FAO Fisheries Technical Paper No. 228. Rome: FAO; 1982. 53 p.
20. Reed W. Red Sea Fisheries of Sudan. Khartoum: Government Printing Press; 1964.
21. Salas S, Chuenpagdee R, Seijo JC, Charles A. Challenges in the assessment and management of small-scale fisheries in Latin America and Caribbean. Fish Res. 2007;87:5-16.
22. SPSS Inc. Statistical Package for Social Science, SPSS for windows Release 14.0.0. Chicago: SPSS Inc.; 2006.
23. Tzanatos E, Dimitriou E, Katselis G, Georgiadis M, Koutsikopoulos C. Composition, temporal dynamics and regional characteristics of small-scale fisheries in Greece. Fish Res. 2005;73(1-2):147-58.
24. Virtanen J, Ahvonen A, Honkanen A. Regional socio-economic importance of fisheries in Finland. Fish Manage Ecol. 2001;8:393-403.
25. Whitmarsh D, Pipitone C, Badalamenti F, D'Anna G. The economic sustainability of artisanal fisheries: the case of the trawl ban in the Gulf of Castellammare, NW Sicily. Mar Policy. 2003;27:489-97.
26. Witherell D, Pautzke C, Fluharty D. An ecosystem approach for Alaska groundfish fisheries. ICES J Mar Sci. 2000;57:771-7.