

Community Fishing and the Economics of Argungu Fishing Festival in Nigeria

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Abstract: This study is examined community fishing and the economics of Argungu Fishing Festival in Kebbi State, Nigeria. Secondary data from the Kebbi State Tourism Board, Birnin-Kebbi was generated. The data were analysed using descriptive statistics such as frequency distribution, percentages and means while inferential statistics comprising regression model were also used to analyse data. The study showed that variation in the interval between successive festivals explained the largest proportion of changes in fish weight at the festival. Furthermore, variation in the number of tourists explained the largest proportion of changes in the total income from the festival. It is recommended that the interval between successive festivals should be increased in order to increase fish productivity and boost the community competitiveness at the festival. The tourism potential of the festival should be boosted so as to increase the tourist attraction of the festival with a resultant increase in the income generated from the festival. Private firm or any limited liability company should be invited to take over the total re-organization of the festival as an effective commercial venture.

Key words: Culture, economics, festival, fish weight, tourists

INTRODUCTION

The Argungu Fishing and Cultural festival is one which surrounds fish capture by a very large community. This is carried out on annual basis as deemed necessary. Given the importance of fish in the augmentation of the rural protein intake for Nigerians (Moses, 1983), the fishing festival assumes a dual prominence among a people (Nigerian) which constitute the largest concentration of the black race anywhere in the world.

Argungu Fishing Festival is probably one of the most eloquent efforts by an African people to relive and maintain a significant feature of its socio-cultural heritage. The annual festival at Argungu indeed signifies a Nigerian's people unique efforts at reasserting its basic values and beliefs, hence its relative distinctiveness vis-à-vis the other peoples around it (Yusuf, 1982). Internally, it has equally become a primary factor in local level development and inter-ethnic mixture.

The festival is probably the oldest known institution of its kind among most of the riverine people of Nigeria. In the modern context, it has become the most widely attended annual festival in Nigeria and perhaps in Africa as a whole (Yusuf, 1982). The festival has contributed significantly towards the development of Argungu town and community over the years, and as a result of the

growing popularity of the festival, Argungu district has progressively emerged out of oblivion to receive national and international recognition. The district has also been progressively identified and segregated for special infrastructural attention (Yusuf, 1982).

Argungu Fishing and Cultural Festival is an annual event that takes place in Argungu town, Kebbi State of Nigeria. About 30,000 fishermen, and villagers, participate in a week-long traditional fishing competition, which includes other cultural events (Dantata, 2007). Argungu is a small town by the Sokoto River. Traditionally, fishing and agriculture are the main economic activities of the area. The festival evolved over the years, from 1934 when the Sultan of Sokoto visited Argungu, after many years of hostilities between the two neighbours and a fishing festival was organized in honour of the visiting monarch. Since then, the fishing festival has continued as an annual event, with additional cultural and sporting activities, attracting about 500,000 spectators from all over Nigeria, and all over the world. It also attracts local and international media coverage, including the CNN and BBC (Dantata, 2007).

From a one-day traditional fishing competition Argungu has expanded to a weeklong festival of cultural and traditional sports activities. Activities include Boat Regatta, Traditional Wrestling, and Traditional Archery.

Argungu Fishing Festival is a leading cultural tourism activity in Nigeria. Supported by government, it has impacted on the local community by popularizing the name of their town and providing income for the participants. The festival has made financial impact on the local community beside the added aesthetic value in terms of infrastructural development of the festival areas; re-awakening of and sustaining traditional heritage and sports (Dantata, 2007).

However, the drawback according to Dantata (2007) is that the festival has only one season, its peak season, which lasts just a week. There is hardly a low season, for as popular as the Festival is, Argungu is forgotten until another season (next year). Therefore, a lot needs to be done to empower the local community. Areas of attention include expanding the tourism product through creation of complimentary "pre" and "post" festival events outside the main festival, thereby making Argungu an all-year destination; providing adequate and attractive incentives for both local and foreign investments in tourism infrastructure; attracting domestic and international tour operators to package Argungu; encouraging local entrepreneurship, such as fish farms, and other tourism based traditional industries. This will address the problems of poverty more directly and spread more widely the benefits of tourism in Argungu, and other communities that have popular cultural festivals (Dantata, 2007).

The Argungu Fishing Festival is an annual four day festival in north-western Nigerian state of Kebbi. The festival usually takes place in Argungu, the capital city of Argungu Emirate Council. The geo-physical nature and characteristics of the festival site in Argungu are river areas (*matanfada, mala, gamji*), irrigation, and ocherds (*lambu* in hausa). The majority of fishermen are the followers of Islam and predominantly farmers. Kanta museum is the main historical centre in Argungu for visitors across the globe. From different destinations people troop to Argungu just to witness the occasion (Wikipedia, 2009).

The festival began in the year 1934, as a mark of the end of the centuries old hostility between the Sokoto Caliphate and the Kebbi Kingdom (Wikipedia, 2009). Created as a peace-building contest between the people of Argungu and nearby Sokoto in 1934, the three-day festival culminates in an hour-long fishing frenzy, with up to 35,000 fishermen, teamed in pairs, plunging into the muddy Malan Fada River carrying hand nets and gourds for flotation. The pair that catches the largest fish in this bare-handed manner is the winner, claiming a prize equivalent to around US\$8000 plus a minibus. In most years, fish exceeding 50 kg in weight are pulled in from the river; in 2004 it took an 80 kg catfish to make catch of

the day. The fishing competition was cancelled in 2006 due to low water levels (Nigeria, 2010). In 2005, the winning fish weighed 75 kg, and needed four men to hoist it onto the scales. In 2006 the festival banned fishing due to safety concerns relating to the low water levels (BBC News, 2006). The importance of the festival to the economy has led the government to conserve fish stock by prohibiting use of gill nets and cast nets (Eyo and Ahmed, 2010). The Zauro polder project, an irrigation scheme in the Rima River floodplain to the south of Argungu, has been criticized because the reservoir threatens to flood the traditional site of the festival (Omoniyi, 2009).

On the final day of the festival, a competition is held in which thousands of men and women line up along the river and at the sound of a gunshot, all of them jump into the river and have an hour to catch the largest fish. The winner can take home as much as 7,500 US dollars. Competitors are only allowed to use traditional fishing tools and many prefer to catch fish entirely by hand (a practice also popular elsewhere and known as "noodling" in the United States) to demonstrate their prowess.

More than 30,000 fishermen had taken part in the annual Argungu fishing festival in Nigeria's Kebbi State (Mba, 2011). People from all West Africa have come to participate in the main event: the fishing contest in the waters of the river Mata Fada, using nets and traditional gourds made with calabashes, a sort of pumpkin dried and hollowed. The fisherman who takes the biggest fish wins a prize of 7000 dollars, a huge amount of money for Nigerian people (Mba, 2011).

There is a saying that Africa is the festival continent. Throughout the year in towns and villages across the continent, colorful and vibrant religious, harvest, fertility, and cultural festivals are held. Bare-hand fishing competition among thousands of fishermen, equipped with a hand net and large gourd, is the main event of the cultural extravaganza at Argungu in Kebbi State in northwestern Nigeria. The competitors splash into the stream, scouring the water for huge freshwater fish. The Argungu fishing festival (Fashin Ruwa) is a celebration of life. It is a tool of conserving natural resources, maintaining and promoting traditional life. It is the precursor of today's fishery management measure. The local people believe they have been fishermen for all time. The effective conservation of natural resources is closely linked to the use of the local knowledge and hence the life of the community. It is also part of an ancient fertility ritual which, from the point of view of the local Kebbawa people, is the most important aspect of the occasion. The festival takes place usually in February after all agricultural work is finished. It marks the end of the growing season, and it opens the fishing season with a bang (Shyllon, 2007).

The government has promised on several occasions to make the Argungu fishing festival, a self-sustaining event through the involvement of the private sector and corporate sponsorships to boost the coordination and make it bigger (Olapade, 2011). The Argungu Fishing Festival, apart from serving as an avenue for reliving the cultural heritage of the Argungu people, has for years, served as a source of fish for the augmentation of the protein intake of the Argungu people and Kebbi State at large. It has also been a source economic enrichment for the people of Argungu and Kebbi State at large. In spite of its growing significance, the Argungu Fishing Festival remains poorly documented empirically especially with respect to its socio-economic implications. This is necessary as it will guide the achievement of any meaningful development of the festival. This study is therefore designed to empirically examine community fishing and the economics of Argungu Fishing Festival in Kebbi State, Nigeria.

METHODOLOGY

The study area: Kebbi State is a state in north-western Nigeria with its capital at Birnin Kebbi. The state was formed from part of Sokoto State in 1991. Kebbi State is bordered by Sokoto State, Niger State, Dosso Region in the Republic of Niger and the nation of Benin. It has a total area of 36,800 km² (Nigerian National News, 2012).

Kebbi State was created on 27th August, 1991, out of the then Sokoto State, following the creation of nine additional states and the readjustment of geographical boundaries of the then twenty-one States by the Federal Military Government. Its headquarters is Birnin Kebbi, an ancient town dating back to the 14th Century. Located between latitude 10°8 N and 13°15 N and longitude 3°30 E and 6°02 E, the state is bounded by Sokoto State to the north and east, Niger State to the south, and Benin Republic to the west. It has a total land area of 36,129 Km².

Kebbi state has a total population of 3,238,628 people (NPC, 2007). The state has Sudan and Sahel-savannah. The southern part is generally rocky with the Niger River traversing the state from Benin to Ngaski LGA. The northern part of the state is sandy with the Rima River passing through Argungu to Bagudo LGA where it empties into the Niger. Agriculture is the main occupation of the people especially in rural areas, Crops produced are mainly grains; animal rearing and fishing are also common. Islam is the dominant religion of the people. There are 225 political wards, 3000 settlements and 1036 hard to reach settlements in the 21 Local Government Areas in the State.

Kebbi State shares boundaries with Sokoto State on the North-Eastern axis, Zamfara State on the Eastern part,

Niger state on the Southern part and Republic of Niger on the Western part. Kebbi state has an agriculturally viable environment since it is endowed with high soil fertility, vast farm lands and economically viable rivers sheltered by fine tropical climate. Owing to these factors, agriculture has remained the major source of revenue and indeed the backbone of the economy of the state. Major food crops in the area are millet, guinea-corn, maize, cassava, potatoes, rice, beans, onions and vegetables, while cash crops including wheat, soya beans, ginger, sugarcane, groundnuts and tobacco are also produced in the state. Similarly, fruits such as mango, cashew, guava and pawpaw are produced under horticulture. Kebbi state has Kebbi Agricultural Development Authority which is responsible for the implementation of its agricultural policies.

Kebbi state is endowed with economically viable rivers such as the Niger and the Rima for the development of fisheries activities. Fishing has always been one of the key occupations of the inhabitants of the state. Also environmental factors as well as the largest concentration of cattle and other animals have made the state a basic raw materials source for diary-products industries. The mineral resources in the state include limestone, salt, clay and gypsum.

One of the occupational festivals is the Argungu Fishing and cultural festival. The Argungu festival was first celebrated as a big event in 1934, when it was staged to mark the visit of the Sultan of Sokoto, Mallam Hassan Dan Muazu to Argungu. Hitherto, it was an irregular get-together of local fishermen residing in the vicinity of the fishing site of Argungu. Today, it is celebrated with a lot of pomp attracting people from both inside and outside the country.

The town of Argungu which has been hosting the annual fishing and cultural festival is located North-East of Birnin-Kebbi Town at a distance of about 58 km along the bank of River Rima or Gulbin Kebbi. Argungu is the Headquarters of both Argungu Emirate and Argungu Local Government Area. The population of Argungu Local Government area was estimated to be 195,484 (NPC, 2007).

Argungu is an undulating highly drained region blessed with numerous rivers, streams, lakes, ponds and pools. The most important rivers are the River Rima and the Gulbin Kebbi. The region has a very good flood-plain of an average of five kilometers wide. From the foregoing, it is not surprising that Argungu has become an area where intensive fishing and rice cultivation takes place. Consequently, there is a high population concentration in the Argungu region.

Argungu Local Government Area comes entirely within the Sudan/Sahel Savannah, climatic and

vegetational zone. It experiences three dominant seasons. The wet season (*damuna*) extends from June to September. Starting from August, the numerous streams, lakes and ponds, notably the Gulbin Kebbi overflow their banks. The cool season (*dari*) extends from October to January and is usually characterized by a relatively long spell of dryness and dust (Harmattan) from the Sahara. The hot season (*bazara*) starts from February and lasts until May. This period is marked by intensive heat with temperature of over 90°C.

The vegetation is generally the Sudan type characterized by open woodlands, short, tender grasslands and stunted scrubs. The trees are deciduous, and in recent times, the impact of man and soil erosion is greatly felt. The vegetation becomes sparser along the marshes where dense populations are encountered.

The long dry season has a relatively negative impact on both vegetation and human activities. However, the short rainy season and subsequent over flowing of banks significantly encourage rice cultivation and fishing industry. Paddy rice is harvested mainly during the dry, cold period; communal fishing rituals and festivals commence shortly after. Millet, corn, cassava, beans, groundnuts and maize are also grown during the short, wet season. Some pastoral activities are carried out along the banks of the river.

In general, Argungu people or the Kebbawa are noted for rice cultivation and fishing industry. Most Kebbawa are fishermen and about 75% of the districts within Argungu Emirate engage in fishing industry. Up to 1950's some three quarters of the population combine fishing with rice cultivation. The rice culture of the marshes provides the necessary nourishment for the fish within the lakes, ponds and streams. Agriculture apart, the Kebbawa has also been famous for salt and tin mining, mostly surface mining.

Data collection: Data were collected mainly from secondary sources. Secondary data were collected from Kebbi State Tourism Board, Birnin-Kebbi. Other secondary data were collected from projects, textbooks as well as the internet.

Analytical technique: Data collected for the study were analysed using descriptive statistics such as frequency distribution, percentages and means, while inferential statistics, comprising benefit-cost ratio and double logarithm regression model were also used to analyse data.

Model specification: In order to identify the determinants of fish weight at the festival double logarithm regression model was used. The regression model used was specified as follows:

$$\text{Ln}Y = \text{Ln}\alpha + \beta_1\text{Ln}X_1 + \beta_2\text{Ln}X_2 + \text{Ln}\mu \quad (1)$$

where,

Ln = Natural logarithm to base e

Y = Fish weight (in kilograms)

α = Constant factor

Ln = Natural logarithm to base e

X_1 = Number of fishermen

X_2 = Interval between successive festival seasons (in years)

β_i (i = 1, 2) are estimates of the coefficients

μ = An error term measuring variation in fish weight unaccounted for by the independent variables

The estimates of the coefficients β_i were estimates of the effect of the variables on changes in fish weight. A positive β_i was found for variables associated with increased fish weight and negative β_i was found for variables associated with decreased fish weight. Failure to reject the joint hypothesis that the estimates of the coefficients are jointly equal to zero, suggests that the change in fish weight cannot be explained by variation in the independent variables.

In order to identify the determinants of income at the festival double logarithm regression model was used. The regression model used was specified as follows:

$$\text{Ln}Y = \text{Ln}\alpha + \beta_1\text{Ln}X_1 + \beta_2\text{Ln}X_2 + \beta_3\text{Ln}X_3 + \text{Ln}\mu \quad (2)$$

where,

Ln = Natural logarithm to base e

α = Constant factor

Y = Total income (in Naira)

X_1 = Number of tourists

X_2 = Number of invited guests

X_3 = Number of officials

β_i (i = 1, 2, 3) are estimates of the coefficients

μ = An error term measuring variation in total income unaccounted for by the independent variables

The estimates of the coefficients β_i were estimates of the effect of the variables on changes in total income. A positive β_i was found for variables associated with increased total income and negative β_i was found for variables associated with decreased total income. Failure to reject the joint hypothesis that the estimates of the coefficients are jointly equal to zero, suggests that the change in total income cannot be explained by variation in the independent variables.

RESULTS AND DISCUSSION

Attendance to the festival: The result in Table 1 shows that tourists' attendance to the Argungu Fishing Festival constituted 65, 71 and 70% of total attendance to the festival in 1980, 1983 and 1995 respectively. The high percentage of tourists implies that a lot of income may have been generated from the festival. According to

Table 1: Distribution of attendance to the festival (1980-1999)

Year	Tourists	Fishermen	Farmers	Officials	Invited guest	Others	Total
1980	68,250(65)	5,250(5)	6,300(6)	9,450 (9)	11,550(11)	4,200(4)	105,000(100)
198	155,900(69.88)	4,800(6)	10,200(12.75)	3,600(4.5)	3,100(3.87)	2,400(3)	80,000(100)
1982	63,000(70)	6,300(7)	12,150(13.5)	3,150(3.5)	2,700(3)	2,700(3)	90,000(100)
1983	71,000(71)	8,000(8)	13,000 (13)	3,000(3)	2,000(2)	3,000(3)	100,000(100)
1987	66,150(63)	7350(7)	6,300(6)	9,450(9)	10,500(10)	5,250(5)	105,000(100)
1989	79,200(66)	9,600(8)	8,400(7)	7,200(6)	9,600(8)	6,000 (5)	120,000(100)
1991	88,400(68)	11,700(9)	9,100(7)	6,500(5)	9,100(7)	5,200(4)	130,000(100)
1995	105,000(70)	15,000(10)	13,500(9)	4,500(3)	4,500(3)	7,500(5)	150,000(100)
1997	91,000(70)	10,400(8)	11,700(9)	5,200(4)	5,200(4)	6,500(5)	130,000(100)
1999	75,900(69)	11,000(10)	12,100(11)	5,500(5)	5,500(5)	0(0)	110,000(100)

Adapted from Asogwa (2002)

Yusuf (1982), the festival is noted for distribution and redistribution of goods and services on essentially commercially basis. It therefore means there may have been a high demand for goods and services within the vicinity of the festival venue. Consequently the Argungu people may have become economically enriched. Besides, Kebbi State as a whole may benefit from any business transaction that may ensue between the tourists and the people of Kebbi State.

Table 1 also shows that 8, 9 and 10% of fishermen attended the festival in 1983, 1991 and 1995 respectively. Large number of fishermen attended the festival. This suggests that every household head who partook of the grand fishing would have taken home a portion of the year's catch of the grand fishing. Yusuf (1982) reported that it is almost mandatory for every household head to take home a portion of that year's catch of the grand fishing. This would go a long way to augment the protein-intake of the people of Argungu town and its environs. Moreover, fishermen would be opportuned to be exposed to the modern and improved fishing implements, which subsequently boost fish capture from the festival. The result would be the augmentation of the protein-intake of the Argungu people and Kebbi State at large.

Table 1 also shows that 12.5, 13.5 and 13% of farmers attended the festival in 1981, 1982 and 1983 respectively. This means that the festival offers many farmers at the festival the opportunity to be exposed to the modern farming methods and new equipment and to demonstrate to the tourists the vast agricultural potentials of the State. Furthermore, the agricultural fair features impressive display of fisheries and fishing implements, livestock feeds and products and agricultural machinery all designed to enlighten them during the agricultural fair at the festival. Consequently, agricultural productivity would be boosted in Kebbi State and Nigeria as a whole. As the people of Argungu are particularly farmers, the Agricultural show at the festival help in bringing technological innovations, methods and means of large scale farming to their advantage and that of the State (Yusuf, 1982).

The result in Table 1 further shows that 9, 6 and 5% officials attended the festival in 1987, 1989 and 1991 respectively, while 11, 10 and 8% invited guests attended the festival in 1980, 1987 and 1989, respectively. This

Table 2: Distribution of weight of large fish catches at the festival (1977-2009)

Year	Estimated fish weight	Percentage of total	Percentage change
1977	120	8.99	-
1978	156	11.69	30
1979	98	7.34	-37.18
1980	32	2.34	-67.35
1981	70	5.24	118.75
1982	32	2.34	-54.29
1983	35	2.62	9.38
1987	80	5.99	128.57
1989	50	3.75	-37.50
1991	48	3.60	-4
1995	68	5.094	1.67
1997	31	2.32	-54.41
1999	30	2.25	-3.23
2002	64	4.79	113.33
2003	64	4.79	0
2004	80	5.99	25
2005	75	5.62	-6.25
2007	65.95	4.94	-12.07
2008	66	4.94	0.08
2009	70	5.24	6.06
Grand total	1334.95	100	
Mean	66.7475		

Kebbi State Tourism Board (2012)

indicates that many attended the festival as supervisory officials (for various events) and invited guests, and this has cost implication on the festival.

With respect to other participants, 5, 4 and 5% attended the festival in 1989, 1991 and 1995 respectively. These participants range from various artists to numerous entertainers. The implication is that different types of cultural sidelines are displayed at the festival, which helps to make the ceremony lively and brings about the relaxation of moods in everybody. Economically, however, this result implies that much money must have been spent to cater for the welfare of these participants during the ceremony.

Fish weight: The result in Table 2 shows that between 1980 and 1981 fish weight increased by 118.75% with the percentage of total fish weight of 5.24. Furthermore, between 1983 and 1987 fish weight increased by 128.57% with the percentage of total fish weight of 5.99. Also, between 1999 and 2002 fish weight increased by 113.33% with the percentage of total fish weight of 4.79. The result in Table 2 also shows that after increase in fish weight of 30% in 1978, fish weight decreased by 37.18% in 1979

and decreased further by 67.35% in 1980 before increasing by 118.75% in 1981. Similarly, after increase in fish weight of 118.75% in 1981, fish weight decreased by 54.29% in 1982 and so on. The trend in changes in fish weight across the periods paints a picture of alternation between increase and decrease in fish weight across the periods. It also appears in most cases that higher increase in fish weight is recorded where the interval between successive festivals is longer while higher decrease in fish weight is recorded where the interval between successive festivals is shorter. This probably explains the highest increase in fish weight of 128.57% between 1983 and 1987 where the interval between successive festivals is the longest (five years). Similarly, this probably explains the highest decrease in fish weight of 67.35% between 1979 and 1980 where the interval between successive festivals is the shortest (one year), more so, sequel to a decrease in fish weight of 37.18% between 1978 and 1979. The implication of the foregoing finding is that given the increasing number of fishermen involved in the grand fishing at the festival over the years, long interval between successive festivals may have given the fish population sufficient time to regenerate and increase in weight over time. For example the 45th festival (1979) grand fishing had only 5,000 fishermen (Yusuf, 1982). This number has increased continually to about 30,000 fishermen in 2007 (Dantata, 2007). By 2009, the number of fishermen had increased to 35,000 fishermen (Nigeria, 2009). The relatively smaller number of fishermen involved in the grand fishing before the 1981 festival may have made it possible for the fish population to regenerate and increase in weight within a short time. This may explain why there was a sharp increase in fish weight (118.75%) between 1978 and 1981 even though there was a short interval between the successive festivals.

The result in Table 2 further shows that mean fish weight is 66.75 kg. This suggests that each festival season generates plenty fish for the augmentation of protein intake of the Argungu people and the neighbourhood. This confirms the observation of Asogwa (2002) that the festival season generates plenty fish, which help to augment the protein intake of the Argungu people and the neighbourhood. Yusuf (1982) noted that it is the tradition that every household has to partake of that year's catch. He further pointed out that any household head in Argungu, Birnin-Kebbi or even Sokoto Emirate who returns home at the end of a festival without the usual relic of that year's catch seriously risks facing a divorce or a serious confrontation with his wife or wives back home. In other words, it is almost mandatory for every compound head to take home a portion of that year's catch of the Grand Fishing.

Benefit-cost ratio of the festival: The result in Table 3 indicates that the 1999 festival season recorded the highest benefit-cost ratio of 0.38. This is attributable to

Table 3: Distribution of the benefit-cost ratio of the festival (1980-1999)

Year	Benefit-cost ratio
1980	0.22
1981	0.22
1982	0.26
1983	0.30
1987	0.27
1989	0.29
1991	0.29
1995	0.32
1997	0.30
1999	0.38
Grand total	2.85
Mean	0.29

Adapted from Asogwa (2002)

the fact that only the grand fishing finale was featured in the 1999 festival season while other side-attraction events were excluded thereby incurring less cost. Furthermore, among other festival seasons, the 1995 festival season recorded the highest benefit-cost ratio probably because it recorded relatively larger number of tourists compared to other festival seasons. The large influx of tourists may have contributed enormously to the income from that year's festival.

The mean benefit-cost ratio is 0.29. This indicates that at each festival season, the organizers of the festival had at least a return of 0.29 Naira per one Naira invested on the festival. This implies that the organizers could hardly have made any appreciable profit from their investment on the festival. This low mean benefit-cost ratio may be attributed to the influx of income, which is incommensurate with the high expenditure necessitated by the need to cater for the large number of employees, price winners, officials, invited guest and other numerous participants at the festival. The organizers of the fishing festival generate income from the festival mainly from accommodation of guests and tourists, sales of food and sales of tickets into the festival village. However, the income is hardly enough to cover the total cost of organizing the ceremony (Publicity Sub-Community and Argungu Fishing Festival, 1995). This is not unconnected to the fact that invited guests and officials who constitute a high percentage of those who attend the festival, do not usually pay for tickets (Yusuf, 1982; Asogwa, 2002). This was why the Festival Committee rigidly restricted the number of invited guests and supervisory officials in the 1979 festival season (Yusuf, 1982).

Determinants of fish weight: The result in Table 4 shows that at 1% level of significance, the hypothesis that the specified (selected) explanatory variables have no significant influence on fish weight is rejected by the result of the F-test, suggesting that there is a significant cause-effect relationship between fish weight and the selected explanatory variables. The model has a good fit to the data. For example, the coefficient of determination

Table 4: Determinants of fish weight at the festival

Variables	Coefficients	Standard errors	t-ratios
Constant	-19.924	105.504	-0.189
Number of fishermen (000)	22.119	14.129	1.566
Interval between festivals (years)	122.439	39.26	3.119**
R	0.898		
R ²	0.806		
Adjusted R ²	0.750		
F	14.503**		

** : t-ratio is significant at 1% level; **: F-statistics is significant at 1% level

Table 5: Determinants of total income at the festival

Variables	Coefficients	Standard errors	t-ratios
Constant	64.884	337.211	-0.192
Number of tourists (000)	19.809	3.370	5.878**
Number of invited guests (000)	-66.348	60.826	-1.091
Number of officials (000)	90.723	89.523	1.013
R	0.924		
R ²	0.855		
Adjusted R ²	0.782		
F	11.755**		

** : t-ratio is significant at 1% level; **: F-statistics is significant at 1% level

(R²) is 0.806, suggesting that the model has a high goodness of fit. This indicates that 80.6% variation in fish weight is accounted for by variations in the selected explanatory variables, suggesting that the model has high explanatory power on the changes in fish weight among the respondents. The adjusted R² also supported the claim with a value of 0.750 or 75%. This implies that the selected explanatory variables explain the behavior of fish weight during the festival at 75% level of confidence. The calculated F-statistic value of 14.503 which is greater than the critical value of 1.49 at 1% level of significance implies that there is a significant cause-effect relationship between fish weight and the selected explanatory variables.

The coefficient of interval between successive festival seasons is significant at 1% level of confidence and has a positive sign indicating that the higher the interval between successive festival seasons the higher the fish weight and vice versa. This is because long interval between successive festivals gives the fish population sufficient time to regenerate and increase in weight over time. The government has had to prohibit the use of gill nets and cast nets in order to conserve fish stock (Eyo and Ahmed, 2010). The implication of this finding is that any policy that is directed towards ensuring that the fish population is adequately conserved in the river meant for grand fishing would ensure that large weight fish are captured during the festival.

Determinants of total income: The result in Table 5 shows that at 1% level of significance, the hypothesis that the specified (selected) explanatory variables have no significant influence on total income at the festival is

rejected by the result of the F-test, suggesting that there is a significant cause-effect relationship between total income and the selected explanatory variables. The model has a good fit to the data. For example, the coefficient of determination (R²) is 0.855, suggesting that the model has a high goodness of fit. This indicates that 85.5% variation in total income is accounted for by variations in the selected explanatory variables, suggesting that the model has high explanatory power on the changes in total income among the respondents. The adjusted R² also supported the claim with a value of 0.782 or 78.2%. This implies that the selected explanatory variables explain the behavior of total income during the festival at 78.2% level of confidence. The calculated F-statistic value of 11.7555 which is greater than the critical value of 1.49 at 1% level of significance implies that there is a significant cause-effect relationship between total income and the selected explanatory variables.

The coefficient of number of tourists is significant at 1% level of confidence and has a positive sign indicating that the higher the number of tourists the higher the total income and vice versa. This is because the festival season creates a huge market (such as sales of accommodation, sales of food, sales of tickets and distribution and redistribution of other goods and services on essentially commercial basis) patronized mostly by the tourists. The implication of the foregoing findings is that any policy that is directed towards harnessing the tourism potentials and further boosting the tourist attraction of the festival would go a long way in improving the income generation from the festival.

CONCLUSION

The study revealed that the festival played an appreciable role in the augmentation of the protein intake of the Argungu people and the neighbourhood. The income generated from the festival is hardly enough to cover the total cost of organizing the ceremony. The festival has a potential for tourism and also provides an avenue for recreation.

The study also revealed that the higher the interval between successive festival seasons the higher the fish weight Hence, any policy that is directed towards ensuring that the fish population is adequately conserved in the river meant for grand fishing would ensure that large weight fish are captured during the festival. Furthermore, the study showed that the higher the number of tourists the higher the total income generated from the festival. Therefore, any policy that is directed towards harnessing the tourism potentials of the festival and further boosting the tourist attraction of the festival would go a long way in improving the income generation from the festival.

The Argungu people have become economically enriched as a result of the festival. Besides, Kebbi State as

a whole benefits from any business transaction that ensues between the tourists and the people of Kebbi State. Also, the festival offers many farmers at the festival the opportunity to be exposed to the modern farming methods and new equipment and to demonstrate to the tourists the vast agricultural potentials of the State. Furthermore, the Agricultural show at the festival help in bringing technological innovations, methods and means of large scale farming to the advantage of the Argungu people and that of the State at large.

Fish productivity at the festival should be increased by policy measure that is directed towards ensuring that the fish population is adequately conserved in the river meant for grand fishing. Efforts should be to boost the tourism potential of the festival in order to increase tourist attraction of the festival. This measure will help to generate more income from the festival.

Total expenditure at the festival should be curtailed by moderating the number of invited guests and supervisory officials during the ceremony. Furthermore, it should be ensured that only participants essential for boosting the tourist attraction of the festival should be admitted to the festival. This will also help to curtail the huge expenditure on the festival.

Considering the fact that huge expenses is usually incurred on the festival without a commensurate return from the investment, it is necessary that a private firm or any governmental limited liability company be invited to undertake the total re-organization of the festival as an effective commercial and profit oriented venture. Fortunately, the Kebbi State Government's privatization plan as regards the fishing festival at Argungu is a welcome development in this regard (Olapade, 2011).

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REFERENCES

- Asogwa, B.C., 2002. Some socio-economic and socio-cultural aspects of the argungu fishing festival in kebbi state. B.Agric. Thesis, Department of Agricultural Economics, University of Agriculture, Makurdi, pp: 63.
- BBC News, 2006. sNigeria fish festival bans fish. Retrieved 2008-02-11.
- Dantata, M., 2007. The Contribution of Argungu Fishing and Cultural Festival to Poverty reduction. The 4th IIPT African Conference on Peace through Tourism, Kampala, 20-25 May, pp: 21. Retrieved from: <http://www.iipt.org/africa2007/PDFs/Dantata.pdf>, (Accessed on: February 10, 2012).
- Eyo, A.A. and Y.B. Ahmed, 2010. Management of Inland Capture Fisheries and Challenges to Fish Production in Nigeria. Federal College of Freshwater Fisheries Technology. Retrieved from: <http://aquaticcommons.org/4088/1/624.pdf>, (Accessed on: October 09, 2010).
- Mba, N., 2011. The Argungu Fishing Festival. Retrieved from: <http://www.goodlife.com.ng/gltourism.php?gltourism=read&id=227>, (Accessed on: February 10, 2012).
- Moses, B.S., 1983. Introduction to Tropical Fisheries. Ibadan University Press, Ibadan, Nigeria, pp: 117.
- Nigeria, 2009. A Year of Festivals: February-Argungu Fishing Festival, Nigeria. Retrieved from: <http://journals.worldnomads.com/worldfestivals/story/32712/Nigeria/February-Argungu-Fishing-Festival-Nigeria>, (Accessed on: February 11, 2012).
- Nigerian National News, 2012. Kebbi State. Retrieved from: <http://nnn.com.ng/?page-id=3941>, (Accessed on: February 11, 2012).
- NPC, 2007. The 2006 Population Census Official Gazette (Extraordinary). Lagos, 94: 24, May 15.
- Olapade, W., 2011. Who is killing Argungu International Fishing Festival? Nigerian Tribune, Wednesday, 23 February 2011. Retrieved from: <http://tribune.com.ng/index.php/tourism/17927-who-is-killing-argungu-international-fishing-festival>, (Accessed on: February 11, 2012).
- Omoniyi, T., 2009. A Dam of Controversy. News watch. Retrieved from: http://www.newswatchngr.com/index.php?option=com_content&task=view&id=1636&Itemid=47, (Accessed on: February 10, 2012).
- Publicity Sub-Community and Argungu Fishing Festival, 1995. Facts about Argungu International Fishing and Cultural Festival. Atman Limited, Kaduna, pp: 8.
- Shyllon, F., 2007. Argungu fishing festival in northwestern Nigeria: Promoting the idea of a sustainable cultural festival. Int. Cultural Property Soc., 14: 329-337.
- Wikipedia, 2009. The Free Encyclopedia, Argungu Fishing Festival. Retrieved from: <http://en.wikipedia.org/wiki/Argungu-Fishing-Festival>, (Accessed on: February 10, 2012).
- Yusuf, A.B., 1982. The Past in the Present: Evolution of the Argungu Fishing Festival. John Okwesa Limited, Yaba Lagos, pp: 104.