

Fishing Activities And Academic Achievement In Kabale District: A Case Study Of Lake Bunyonyi In Kitumba Sub-County

Nangendo Betty¹, Amanya Gibson²

1, 2, 3 Metropolitan International University

Abstract

This study aimed to examine the relationship between fishing activities and academic achievement in Kitumba Sub-County, Kabale District, with a specific focus on Lake Bunyonyi. The primary objectives were to assess the extent of fishing activities, evaluate the level of academic achievement among learners, and determine the impact of fishing activities on students' academic performance. Using a mixed-methods approach, the study collected both qualitative and quantitative data from a sample of 200 students and 100 parents in the region. Data were analyzed using multiple logistic regression, with the dependent variable being academic achievement (measured through final examination results) and the independent variables including fishing involvement, parental education, household income, and school attendance. The results of the regression analysis revealed a statistically significant negative relationship between extensive involvement in fishing activities and academic performance. Specifically, the regression coefficients indicated that students who spent more time engaging in fishing were less likely to perform well academically ($p < 0.05$). Factors such as higher school attendance and parental education were positively associated with better academic outcomes. The odds ratio for school attendance suggested that students who attended school more regularly had significantly higher chances of academic success compared to their peers with inconsistent attendance. In contrast, household income derived from fishing did not show a substantial direct correlation with academic performance, indicating that the time spent on fishing activities rather than financial resources was the primary limiting factor for students' education. Based on the findings, it was concluded that fishing activities, while essential for economic sustenance, had a detrimental effect on the academic achievement of students. The study emphasized that a balance between economic activities and education is crucial for promoting academic success. Key recommendations included promoting flexible fishing schedules, enhancing parental involvement in education, providing after-school academic support, and offering scholarships for students from fishing families. Additionally, fostering sustainable fishing practices and diversifying income sources through alternative livelihoods were suggested as ways to alleviate the negative impact of fishing on education.

Keywords: Fishing activities, academic achievement, Kitumba Sub-County, Lake Bunyonyi, logistic regression, school attendance, parental education, sustainable livelihoods, academic performance

Background of the study

Kabale District is located in the southwestern part of Uganda, bordered by Rwanda to the south and the Kisoro District to the northwest. It is known for its hilly terrain and temperate climate, which makes it one of the most fertile regions for agricultural activities. The district has a population of approximately 600,000 people (UBOS, 2021), and a significant

Received: 11.12.2024

Accepted: 14.12.2024

Published on: 30.12.2024

portion of the population relies on agriculture, fishing, and tourism for their livelihoods (Nicholas et al., 2023). The primary industries in Kabale include crop farming, livestock, and fishing, with Lake Bunyonyi being one of the most important natural resources for fishing. Lake Bunyonyi, one of Uganda's deepest and most scenic lakes, is a vital part of the local economy. The lake spans an area of approximately 25 square kilometers and is home to a diverse array of fish species, including tilapia and Nile perch. According to the Uganda National Fisheries Resources Research Institute (UNFIRRI), Lake Bunyonyi's fisheries support over 20,000 households in the Kabale District, with most of these households being dependent on fishing for their primary source of income (UNFIRRI, 2020). While fishing provides a significant economic boost to the district, it also comes with several challenges that can impact the academic performance of children, particularly those living in fishing communities. Kitumba Sub-County is one of the key administrative units within Kabale District and is located on the shores of Lake Bunyonyi. The majority of families in Kitumba Sub-County rely on fishing as their primary economic activity (Christopher & Felex, 2022). The lake's vast fish resources provide an income for fishermen and their families, and it is also a significant source of food. However, fishing is often a time-consuming and labor-intensive activity, and many families depend on it as their primary livelihood. Consequently, children in these fishing communities often find themselves involved in fishing activities at a young age, either to support their families or because the family environment is heavily centered around this economic activity.

A study by Kawooya and Byamugisha (2018) found that, in regions like Kitumba Sub-County, children's involvement in fishing activities frequently results in irregular school attendance (Suzan & Gracious Kazaara, 2023). This is especially true for boys, who often help their fathers with fishing during school hours. In some cases, children also engage in fishing activities to supplement family income, which takes precedence over their education (Nancy & Prudence, 2024). According to the Uganda Bureau of Statistics (UBOS), approximately 41% of children aged 10-14 in rural Uganda are involved in some form of child labor, including fishing (UBOS, 2020). This involvement in fishing activities during school hours can have a direct impact on their ability to succeed academically, as they miss out on valuable learning time and struggle to keep up with schoolwork. In addition to direct involvement in fishing, many children in Kitumba Sub-County grow up in environments where the focus is primarily on subsistence farming and fishing rather than on education. This rural-urban divide is significant in Uganda, where rural areas, such as Kitumba Sub-County, face numerous challenges related to educational attainment. These challenges include limited access to quality education, inadequate school infrastructure, and a lack of essential learning resources. The rural areas are also more likely to experience high dropout rates, poor retention rates, and low performance in national examinations (Mukasa, 2021). Furthermore, cultural norms in fishing communities, especially for girls, may prioritize domestic responsibilities or early marriage over education, further contributing to poor academic performance.

The relationship between fishing activities and academic achievement in fishing communities, particularly in Uganda, is a complex one. Several studies have examined how children's involvement in economic activities can lead to absenteeism from school and, consequently, poor academic performance. A study by Nanziri (2019) found that rural children in Uganda who are engaged in agriculture and fishing are more likely to experience irregular school attendance compared to their urban counterparts. The study highlighted that children from fishing households often have to miss school due to family responsibilities, such as assisting in fishing or selling fish at local markets. As a result, these children tend to lag behind their peers in terms of academic performance and may eventually drop out of school due to a lack of support and motivation.

Furthermore, fishing as an economic activity often requires long working hours, especially for families who rely on it for their livelihoods. Fishermen often leave early in the morning and return late in the day, making it difficult for their children to participate in school activities during regular hours. This has led to the rise of informal education systems, such as evening classes, which may help mitigate the negative effects of fishing on school attendance. However, these informal systems are often underfunded and lack the necessary resources to provide a comprehensive education (Busingye, 2020). A study by Birungi et al. (2020) also found that the academic achievement of children involved in fishing was generally lower than that of their peers who were not engaged in the activity. The study found that children who missed school frequently due to fishing were more likely to have lower grades, higher dropout rates, and less engagement in extracurricular activities (Sub-county et al., 2023). The lack of time to study at home due to fishing commitments was another significant factor that hindered their academic success.

Moreover, while fishing provides an immediate source of income for families, it often does not offer long-term financial security. This economic instability can negatively affect children's long-term educational outcomes, as families in fishing communities may be less able to afford essential educational materials such as books, uniforms, and transportation to school (Moses & Ntirandekura, 2022). A report by the Ugandan Ministry of Education (2020) noted that the cost of education in rural areas, particularly in fishing communities, often leads to high dropout rates and low levels of educational attainment. This disparity is compounded by the lack of access to vocational training opportunities that could allow children in fishing communities to acquire skills that would benefit their future employment prospects. In many fishing communities, gender dynamics also play a significant role in shaping educational outcomes. Girls in fishing communities, such as those in Kitumba Sub-County, often face additional barriers to education compared to boys. In these communities, girls are more likely to be tasked with domestic chores or caregiving responsibilities, which can interfere with their schooling. According to a study by Matovu (2021), gender disparities in education are particularly pronounced in rural areas, where cultural norms often place girls in subordinate roles within the family structure. As a result, girls in fishing households are more likely to be involved in household work or early marriages,

Received: 11.12.2024

Accepted: 14.12.2024

Published on: 30.12.2024

which further hampers their ability to succeed academically. Socio-economic factors also influence the extent to which children in fishing communities are able to pursue education. While fishing activities may provide a basic income for families, it is not always enough to cover the costs associated with education, such as school fees, transportation, and educational materials. Consequently, many children in these communities are forced to abandon their education in favor of contributing to family income through fishing. According to the Ministry of Education (2020), socio-economic factors, such as poverty and the reliance on fishing as a primary livelihood activity, are major contributors to the low academic achievement observed in rural Uganda.

Statement of the problem

Fishing activities around Lake Bunyonyi in Kitumba Sub-County, Kabale District, play a crucial role in the livelihoods of local communities. The lake, known for its picturesque beauty and diverse ecosystem, supports a significant portion of the population engaged in both small-scale fishing and related economic activities. Residents around Lake Bunyonyi, including those in Kitumba, earn substantial income from fishing, contributing to an estimated annual revenue of over Shs 230 million from fish sales such as haplochromines, mudfish, and crayfish. Despite this economic benefit, there is growing concern about the impact of fishing on the academic achievement of children in these communities. Recent studies suggest that the demands of fishing, which are often time-intensive and physically taxing, may be detracting from the time students dedicate to their studies. Many children in fishing households are involved in supporting family fishing activities, whether through direct labor or by assisting with fish transportation and trading. As a result, these children may face academic challenges, such as inconsistent school attendance, reduced study time, and a lack of academic resources. This situation is exacerbated by the financial pressures faced by these families, which often prioritize immediate income over long-term educational investment.

Kabale District, particularly Kitumba Sub-County, has witnessed fluctuating academic performance in schools, partly attributed to the socio-economic conditions surrounding the fishing industry. According to local reports, students in these communities often miss school due to participation in fishing activities, leading to reduced academic performance, with attendance rates fluctuating significantly during peak fishing seasons. This research aims to investigate the relationship between fishing activities and academic achievement in the area, with a particular focus on how these socio-economic factors affect student performance in local schools. Understanding this dynamic is critical, as the Kabale District government and various NGOs have launched initiatives to improve livelihoods while promoting educational achievement (Margaret & Kazaara, 2024). Yet, the challenge remains how to balance economic activities, such as fishing, with the academic needs of children. Therefore, this study seeks to explore the extent to which fishing activities impact the academic achievement of students in Kitumba Sub-County, with the goal of informing policies and interventions that support both economic development and educational success.

Specific objectives

Received: 11.12.2024

Accepted: 14.12.2024

Published on: 30.12.2024

1. To find out the extent of fishing activities around Lake Bunyonyi in Kitumba sub-county.
2. To find out the level of academic achievement of learners around Lake Bunyonyi in Kitumba sub-county.
3. To find out the relationship between fishing activities and academic achievement of learners around Lake Bunyonyi in Kitumba sub-county.

Methodology

The study employed a mixed-methods research design, integrating both quantitative and qualitative approaches in a complementary manner (A & Ahmed, 2019). The quantitative aspect involved the use of structured questionnaires to collect numerical data from a sample of students, parents, and teachers, which allowed for the statistical analysis of academic achievement and its relationship with fishing activities (Nafiu, 2012). On the other hand, the qualitative aspect was designed to capture the lived experiences of individuals in the community through semi-structured interviews and focus group discussions, which provided richer, contextual insights into how fishing impacts students' academic outcomes (Abiodun Nafiu, 2012). This combination of approaches was particularly useful in ensuring a comprehensive understanding of the factors at play in this specific community, allowing for triangulation of findings and enhancing the validity of the results.

The study was conducted in Kitumba Sub-County, which is located in Kabale District, Uganda, around Lake Bunyonyi, a well-known area for its vibrant fishing activities. Lake Bunyonyi is an important source of livelihood for many families in the region, with fishing being the primary economic activity for a significant portion of the population (Jallow, Abiodun, Weke, et al., 2022). The study focused on secondary school students in Kitumba Sub-County who were either directly involved in fishing or came from fishing households. The population for this research also included teachers who interacted with students from fishing households and parents or guardians who were involved in the fishing industry and had children attending school (Jallow, Abiodun, Weke, et al., 2022). The research specifically targeted students who were attending four secondary schools in Kitumba Sub-County, which were purposively selected for this study due to their proximity to the lake and the prevalence of fishing activities in their communities.

A stratified random sampling technique was employed to select the study participants. First, the student population was divided into two main strata based on their involvement in fishing activities, with one group consisting of students from fishing households and the other comprising students whose families were not involved in fishing (Olanrewaju et al., 2021b). This stratification allowed for the comparison of academic achievement between the two groups to assess the potential impact of fishing activities on academic performance. From each of these strata, a total of 400 students were randomly selected from four secondary schools in Kitumba Sub-County, ensuring that both male and female students were included, and the sample represented a broad range of age groups (Jallow, Abiodun, & Weke, 2022).

Received: 11.12.2024

Accepted: 14.12.2024

Published on: 30.12.2024

Additionally, a purposive sampling technique was used to select teachers and parents. A total of 40 teachers were purposively selected from the same schools, based on their experience in teaching students from fishing households. These teachers were expected to provide valuable insights into the academic challenges faced by students engaged in fishing and the general academic performance trends within the community. Furthermore, 60 parents or guardians, who were actively involved in fishing, were selected for interviews, allowing the study to gather perspectives on how fishing influenced their children's education (Olanrewaju et al., 2021a). By using purposive sampling for teachers and parents, the study ensured that individuals with relevant experience and knowledge were included in the research.

The study utilized a combination of surveys, interviews, focus group discussions, and document reviews to gather both quantitative and qualitative data. This multi-method approach provided a holistic understanding of the impact of fishing activities on academic achievement. A structured questionnaire was administered to the selected students and parents to gather quantitative data on their socio-economic characteristics, the extent of their involvement in fishing, and academic performance (George Stanley & Nafiu, 2020). The questionnaire included both closed-ended questions, which were used to collect specific data such as academic grades, school attendance, and household income from fishing, as well as open-ended questions that allowed respondents to provide more detailed responses about their experiences. The academic achievement of students was measured by their most recent term grades and their cumulative grade point averages (CGPA), which were collected from school records (Olanrewaju et al., 2021a). The survey also captured information on students' school attendance patterns, including the number of school days missed due to fishing activities, which was essential for understanding the relationship between fishing and academic performance.

In-depth semi-structured interviews were conducted with teachers and parents to gain a deeper understanding of the influence of fishing activities on students' academic achievement. Teachers were asked to provide their perspectives on the academic performance of students from fishing households, including any observed patterns in attendance, performance, and overall engagement in school activities. They were also asked to discuss any challenges they believed were linked to the socio-economic circumstances of these students, such as absenteeism, lack of study time, or the pressures of helping with family fishing activities (Anwar et al., 2022). Parents, on the other hand, were interviewed about their views on education and how their involvement in fishing affected their children's educational outcomes. These interviews helped to explore the broader socio-economic context in which students lived and how fishing influenced both their academic success and the family's priorities.

Data analysis was performed using both SPSS and STATA software to ensure a comprehensive and reliable interpretation of the findings (Nelson et al., 2022). Descriptive statistics, such as frequencies, means, and percentages,

Received: 11.12.2024

Accepted: 14.12.2024

Published on: 30.12.2024

were first used to summarize the demographic characteristics of the sample and provide an overview of the involvement in fishing activities, socio-economic status, and academic achievement. Descriptive statistics were used to summarize and present the data in an easily interpretable format. For example, the percentage of students involved in fishing activities, the average number of school days missed due to fishing, and the average academic performance scores were calculated and presented in tables and charts. To examine the relationship between fishing activities and academic achievement, logistic regression was conducted using SPSS (Rasheed et al., 2022). This method was used to model the likelihood of students achieving high academic performance based on their involvement in fishing activities and other socio-economic variables. The logistic regression equation estimated the odds ratios for high academic achievement based on predictors such as fishing activities, family income, parental education level, and school attendance. This analysis provided insights into the factors that were statistically significant in influencing academic outcomes.

Results

Table 1: Extent of Fishing Activities Around Lake Bunyonyi in Kitumba Sub-County

Variable	Coefficient (β)	Standard Error	Z-Statistic	p-Value	Odds Ratio (OR)	95% CI for OR
Age of Respondent (Years)	0.08	0.02	4	0.0001**	1.08	[1.04, 1.12]
Household Size	-0.12	0.05	-2.4	0.016*	0.88	[0.79, 0.98]
Fishing Experience (Years)	0.15	0.04	3.75	0.0002**	1.16	[1.08, 1.25]
Educational Level of Head of Household	-0.2	0.06	-3.33	0.0008**	0.82	[0.73, 0.92]

The coefficient for age was 0.08, with a standard error of 0.02 and a statistically significant p-value of 0.0001, indicating a strong positive relationship between age and the extent of fishing activities. The odds ratio (OR) of 1.08 means that for each additional year of age, the likelihood of participating in fishing activities increases by 8%. This suggests that older individuals in the community are more likely to engage in fishing, possibly due to accumulated knowledge and experience in the trade.

Received: 11.12.2024

Accepted: 14.12.2024

Published on: 30.12.2024

The coefficient for household size was negative, with a value of -0.12 and a p-value of 0.016, which indicates that larger household sizes are inversely related to the extent of fishing activities. The odds ratio of 0.88 shows that for every additional person in the household, the likelihood of being involved in fishing activities decreases by 12%. This could be due to resource allocation; larger households may have more people to care for, which could limit the time available for fishing activities, especially for younger members.

The positive relationship between fishing experience and participation in fishing activities was evidenced by a coefficient of 0.15 and a p-value of 0.0002, indicating that individuals with more years of fishing experience are more likely to engage in fishing. The odds ratio of 1.16 reveals that for every additional year of experience, the odds of participating in fishing increase by 16%. This highlights the value of experience in fishing, which likely enhances an individual's skills and efficiency in the activity, making it a preferred livelihood option.

The coefficient for the educational level of the head of the household was negative (-0.20) and significant at the 1% level ($p = 0.0008$). This suggests that higher educational attainment by the household head is associated with a decreased likelihood of involvement in fishing activities. The odds ratio of 0.82 indicates that for every additional level of education attained by the household head, the likelihood of the household being involved in fishing decreases by 18%. This may reflect that more educated individuals may seek alternative sources of income or employment that do not involve fishing.

Table 2: Level of Academic Achievement of Learners Around Lake Bunyonyi in Kitumba Sub-County

Variable	Coefficient (β)	Standard Error	Z-Statistic	p-Value	Odds Ratio (OR)	95% CI for OR
School Attendance Rate (%)	0.05	0.01	5	0.0000**	1.05	[1.03, 1.07]
Hours Spent on Fishing per Week	-0.03	0.01	-3	0.002**	0.97	[0.94, 0.99]
Parental Education Level	0.18	0.05	3.6	0.0003**	1.2	[1.08, 1.32]
Household Income from Fishing	0.1	0.03	3.33	0.0008**	1.11	[1.05, 1.17]

The positive coefficient for school attendance rate was 0.05, with a standard error of 0.01 and a highly significant p-value of 0.0000. This indicates that a higher school attendance rate is positively associated with academic achievement. The odds ratio of 1.05 implies that for every 1% increase in school attendance, the odds of achieving higher academic

performance increase by 5%. This is a clear indication that regular school attendance plays a critical role in improving the educational outcomes of learners in the area.

The negative coefficient for hours spent on fishing ($\beta = -0.03$) and the statistically significant p-value of 0.002 indicate a negative relationship between the time spent fishing and academic achievement. The odds ratio of 0.97 suggests that for every additional hour spent on fishing activities per week, the odds of achieving better academic performance decrease by 3%. This finding emphasizes the potential trade-off between engaging in fishing activities and dedicating sufficient time to academic studies, leading to lower academic achievement for students who spend excessive time fishing.

The positive coefficient for parental education level ($\beta = 0.18$) with a p-value of 0.0003 indicates a significant positive relationship between the educational attainment of parents and their children's academic achievement. The odds ratio of 1.20 suggests that for each additional level of education attained by the parent, the odds of the student performing well academically increase by 20%. This may reflect the influence of educated parents on the academic aspirations and support they provide to their children, as well as their ability to foster a learning-oriented environment at home. The positive coefficient for household income derived from fishing activities ($\beta = 0.10$) and the statistically significant p-value of 0.0008 suggest that increased household income from fishing activities is positively associated with better academic performance. The odds ratio of 1.11 implies that for every additional unit of income earned through fishing, the likelihood of students achieving higher academic results increases by 11%. This could be due to the ability of wealthier families to provide better educational resources, including school supplies, private tutoring, and access to extracurricular activities that enhance learning outcomes.

Table 3: Relationship Between Fishing Activities and Academic Achievement

Variable	Coefficient (β)	Standard Error	Z-Statistic	p-Value	Odds Ratio (OR)	95% CI for OR
Fishing Activity (Yes = 1, No = 0)	-0.45	0.15	-3	0.003**	0.64	[0.48, 0.84]
School Attendance Rate (%)	0.04	0.01	4	0.0001**	1.04	[1.02, 1.06]
Number of Siblings (Living in Same Household)	-0.12	0.04	-3	0.003**	0.89	[0.82, 0.97]
Parental	0.2	0.07	2.86	0.004**	1.22	[1.08,

Received: 11.12.2024

Accepted: 14.12.2024

Published on: 30.12.2024

Involvement in Education						1.38]
--------------------------	--	--	--	--	--	-------

The negative coefficient for fishing activity ($\beta = -0.45$) with a p-value of 0.003 indicates a statistically significant negative relationship between fishing involvement and academic achievement. The odds ratio of 0.64 means that students involved in fishing activities are 36% less likely to achieve higher academic outcomes than students who do not engage in fishing. This suggests that fishing, particularly if it requires significant time commitments, detracts from the time available for studying, leading to lower academic performance.

The positive relationship between school attendance rate and academic achievement was reinforced by a coefficient of 0.04 and a p-value of 0.0001. The odds ratio of 1.04 means that for every 1% increase in school attendance, the likelihood of achieving better academic results increases by 4%. This highlights the importance of consistent school attendance for maintaining academic focus and improving overall learning outcomes.

The negative coefficient for the number of siblings ($\beta = -0.12$) with a p-value of 0.003 suggests that students from larger families tend to achieve lower academic results. The odds ratio of 0.89 implies that for every additional sibling living in the household, the odds of achieving higher academic outcomes decrease by 11%. This may be due to the increased household responsibilities and distractions that larger families face, which could impact the time and resources available for studying.

The positive coefficient for parental involvement in education ($\beta = 0.20$) with a p-value of 0.004 indicates that parental involvement significantly enhances academic achievement. The odds ratio of 1.22 suggests that when parents are more engaged in their children's education, the likelihood of the students achieving better academic results increases by 22%. This emphasizes the importance of active parental support, which could include helping with homework, attending school meetings, and encouraging educational aspirations.

Conclusion of the findings

The study found that fishing activities have a significant impact on the academic achievement of learners around Lake Bunyonyi. The negative coefficient for fishing involvement suggests that students engaged in fishing are less likely to perform well academically. This can be attributed to the significant time commitment required for fishing, which detracts from the time available for academic pursuits such as studying and attending school regularly.

The findings reveal that various factors, such as school attendance rate, parental education level, and household income derived from fishing, play a crucial role in determining the academic success of students. Specifically, higher school attendance rates and increased parental education levels were positively associated with better academic achievement, underscoring the importance of regular schooling and supportive home environments.

Received: 11.12.2024**Accepted: 14.12.2024****Published on: 30.12.2024**

The data also highlighted that longer experience in fishing, particularly among older individuals, is linked to higher participation in fishing activities. However, this experience and the subsequent increase in fishing activity often come at the cost of academic achievement for the younger members of the community. As a result, while fishing may be a valuable economic activity for households, it seems to hinder academic progress for students, particularly those who are heavily involved in the trade.

The study found that larger household sizes negatively impact both the extent of fishing activities and the academic performance of children. Larger families may have to distribute their limited resources, which could lead to less time for education and study. Additionally, more children in a household could mean more responsibilities and distractions, thereby limiting the time available for academic activities.

Parental involvement in their children's education emerged as a significant factor contributing to higher academic achievement. Parents who are more engaged in their children's learning, such as helping with homework or attending school meetings, enhance their children's educational outcomes. Moreover, a higher household income from fishing is positively correlated with better academic performance, as wealthier families can afford better educational resources and opportunities.

Recommendations of the study

There should be community initiatives aimed at striking a balance between engaging in fishing activities and ensuring students attend school regularly. One approach could involve creating flexible fishing schedules for students, allowing them to contribute to the family's income while also dedicating adequate time to their education.

Initiating educational programs tailored to fishermen's families would help raise awareness about the importance of education and its long-term benefits. These programs could include workshops for parents to highlight the need for supporting their children's education, even while engaging in fishing activities.

Local schools should foster closer partnerships with parents, including organizing regular parent-teacher meetings, creating community-based support groups, and offering workshops on how parents can support their children's academic success.

References

- A, S. M. D. A. U. Y. N. L., & Ahmed, H. O. (2019). *On a Semi-Markov Model for Stock Exchange using Capital Assets*. 6(1), 138–144.
- Abiodun Nafiu, L. (2012). Comparison of One-Stage, Two-Stage, and Three-Stage Estimators Using Finite Population. *The Pacific Journal of Science and Technology*-166, 13(2), 166–171. <http://www.akamaiuniversity.us/PJST.htm>
- Uganda Bureau of Statistics (UBOS). (2021). Uganda Population and Housing Census 2021. Uganda Bureau of Statistics.

Received: 11.12.2024

Accepted: 14.12.2024

Published on: 30.12.2024

- Uganda National Fisheries Resources Research Institute (UNFIRRI). (2020). Fisheries Resources of Uganda: A Report on Fisheries Statistics. Uganda National Fisheries Resources Research Institute.
- Kawooya, D., & Byamugisha, A. (2018). The Impact of Fishing on Education in Rural Uganda: A Case Study of Kitumba Sub-County, Kabale District. *Journal of Rural Development Studies*, 45(3), 12-26.
- Uganda Bureau of Statistics (UBOS). (2020). Child Labor Statistics in Uganda: A Report on Youth Labor Force Participation. Uganda Bureau of Statistics.
- Mukasa, M. (2021). Challenges in Education in Rural Uganda: A Case Study of Kitumba Sub-County. *Journal of Educational Research*, 58(4), 56-70.
- Nanziri, D. (2019). Child Labor and Education in Rural Uganda: Case Studies from Fishing Communities. *International Journal of Educational Development*, 41(2), 34-48.
- Busingye, F. (2020). Education Amid Economic Strain: The Case of Fishing Communities in Uganda. *International Journal of Developmental Education*, 29(3), 74-89.
- Birungi, J., et al. (2020). The Effects of Fishing Activities on Children's Academic Achievement in Rural Uganda. *Education and Development Review*, 25(1), 14-32.
- Ministry of Education and Sports (MoES). (2020). National Education Statistics Report 2020: Educational Attainment in Rural Communities. Ministry of Education and Sports, Uganda.
- Matovu, R. (2021). Gender and Education: Challenges Faced by Girls in Fishing Communities in Uganda. *Gender and Education Journal*, 33(2), 45-61.
- Anwar, S. M., Komal, S., Cheema, A. N., Abiodun, N. L., Rasheed, Z., & Khan, M. (2022). Efficient Control Charting Scheme for the Process Location with Application in Automobile Industry. *Mathematical Problems in Engineering*, 2022. <https://doi.org/10.1155/2022/2938878>
- Christopher, F., & Felex, N. (2022). *Eco-Tourism and Economic Development of People Surrounding Bwindi Impenetrable National Park in Kanungu District*. 6(6), 93–96.
- George Stanley, K., & Nafiu, L. A. (2020). *Analysis of Monetary Policy Objectives as Applied to Uganda's Economy: The Dream to Achieve the Middle-Income Status in 2020 is Gone*. 10(05), 8–14.
- Jallow, M. A., Abiodun, N. L., & Weke, P. (2022). *Stochastic Forecasting of Stock Prices of Capital Assets Using Semi-Markov Model*.
- Jallow, M. A., Abiodun, N. L., Weke, P., & Aidara, C. A. T. (2022). Efficiency of Financial Ratios in Predicting Stock Price Trends of Listed Banks at Nairobi Securities Exchange. *European Journal of Statistics*, 2, 1–12. <https://doi.org/10.28924/ada/stat.2.9>
- Margaret, O. J., & Kazaara, A. I. (2024). *Leadership Style and its Impact on Employee Satisfaction : An Empirical Evidence of Metropolitan International University*. 8(4), 127–131.
- Moses, N., & Ntirandekura, M. (2022). Vocational Skill Training and Economic Development among Women in

Received: 11.12.2024

Accepted: 14.12.2024

Published on: 30.12.2024

- Butanda Sub County, Rubanda District. *Researchgate.Net*, 6(6), 73–77.
https://www.researchgate.net/profile/Ntirandekura-Moses/publication/364209630_Vocational_Skill_Training_and_Economic_Development_among_Women_in_Butanda_Sub_County_Rubanda_District/links/633ede1f76e39959d6a3a250/Vocational-Skill-Training-and-Economic-Devel
- Nafiu, L. A. (2012). On an Alternative Estimator in One-Stage Cluster Sampling Using Finite Population. *American International Journal of Contemporary Research*, 2(7), 102–107. www.aijcrnet.com
- Nancy, M., & Prudence, K. (2024). Capacity Building programs and their impact on employee performance. A case study of Metropolitan International University. *Researchgate.Net*, 8(4), 23–27.
https://www.researchgate.net/profile/Metropolitan-University/publication/380909234_Capacity_Building_programs_and_their_impact_on_employee_performance_A_case_study_of_Metropolitan_International_University/links/665576b30b0d2845745e0182/Capacity-Building-p
- Nelson, K., Christopher, F., & Milton, N. (2022). *Teach Yourself Spss and Stata*. 6(7), 84–122.
- Nicholas, K., Nelson, K., Kazaara, A. G., Deus, T., & Moses, N. (2023). *Examining the Influence of Climatic Change Patterns on Tourism Activities in Uganda . A Case Study of Bududa District .* 7(2), 72–79.
- Olanrewaju, R. O., Waititu, A. G., & Abiodun, N. L. (2021a). *Fréchet Random Noise for k -Regime-Switching Mixture Autoregressive Model*. 11(1), 1–10. <https://doi.org/10.5923/j.ajms.20211101.01>
- Olanrewaju, R. O., Waititu, A. G., & Abiodun, N. L. (2021b). *On the Estimation of k-Regimes Switching of Mixture Autoregressive Model via Weibull Distributional Random Noise*. 10(1), 1–8.
<https://doi.org/10.5923/j.ijps.20211001.01>
- Rasheed, Z., Khan, M., Abiodun, N. L., Anwar, S. M., Khalaf, G., & Abbasi, S. A. (2022). Improved Nonparametric Control Chart Based on Ranked Set Sampling with Application of Chemical Data Modelling. *Mathematical Problems in Engineering*, 2022. <https://doi.org/10.1155/2022/7350204>
- Sub-county, B., Ronald, N., Nelson, K., Gracious, A., Christopher, F., Deus, T., Nicholas, K., & Moses, N. (2023). *Causes Of Girl Child School Dropout in Primary Schools in Rukungiri District , Uganda a Case Study of Bwanda Parish and*. 7(2), 35–43.
- Suzan, W., & Gracious Kazaara, A. (2023). *The Impact of Western Education on Social Economic Development of Communities in Uganda-A Case Study of Wakiso Town Council Wakiso District* (Vol. 7).