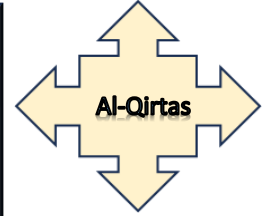


Exploring the students' academic performance in flood affected areas at primary level in district Rajanpure



Dr. Hina Munir
Tehseen Satter
Mehvish Muhammad Ali

Assistant professor Department of Education, The Women University Multan at hina.munir@wum.edu.pk
MPhil scholar The Department of Education, The Women University Multan, at shoaibtehseen56@gmail.com
PhD Scholar the Department of Education, The Women University Multan, at muhammadalimehvish@gmail.com

Abstract

The health, nutrition, school attendance, sanitation, safety, and social security of children are all profoundly impacted by the increasing frequency and severity of floods, which put community infrastructure at risk. The potential impact of flood disasters on children's access to quality education in Pakistan is examined in this post, along with quantitative and qualitative data. To explore the students' academic performance in flood affected areas at primary level in district Rajan pure. To investigate the problems of students in flood affected areas at primary level, raise awareness among students after flood situation at primary level. The purpose of the research study was to examine how the floods affect the academic performance of primary school students in the designated district Rajanpur. Population 300 study selected 200 pupils from the Jampur and Ruhjan tehseels in the Rajanpur district using a basic random selection technique. (30) items made up the survey utilized in this study, and grades were determined using a five-point Likert scale. Data were entered on SPSS sheet after the completion of data collection. Various statistical methods were applied to obtain the findings about the students' reactions like % mean, frequency, standard deviation and t-test was used to apply and examine the student's academic performance. Following a flood, students must overcome many challenges to make up for lost instruction and assignments. The disruption caused by floods often impedes access to vital educational resources such as libraries and computer labs, compounding the difficulties faced by students. Recognizing the significance of these experiences, students strongly advocate for improved flood preparedness plans in schools to minimize the impact on their education. They emphasize the importance of integrating flood education and awareness into the curriculum, empowering them to comprehend the risks associated with floods and equipping them with essential knowledge and skills to effectively navigate such situations. To suggest that there is a statistically significant gender gap in the variable "students," it can be observed that female students exhibit a significantly higher average score compared to their male counterparts in this specific context.

KEY WORDS: Flood effected areas, student's academic performance and primary level

Introduction

Because floods are becoming more common and more destructive, they endanger community infrastructure and have far-reaching effects on children's health, nutrition, school attendance, sanitation, safety, and social security. This article summarised the possible impacts of flood catastrophes on the accessibility of high-quality education for children in Pakistan using quantitative and qualitative evidence. Flooding, caused by abrupt changes in weather patterns, is the most prevalent type of natural disaster. As a result of global warming, floods are becoming more common, and Pakistan is not immune (Sanjrani Manzoor et al., 2022). Many individuals in South Asia were exposed to financial harm and other dangers due to floods, one of the most common natural disasters (Rentschler et al., 2022). Extreme weather and over-topping are two of the most common causes of floods, while man-made dam collapse is also a regular factor. It is essential to enhance the land use pattern while taking flood potential into account. It is indeed the position taken by Shah et al. (2020). Children are the most vulnerable to the effects of a public health emergency since flood disasters have such catastrophic effects on individuals of all ages (Munro et al., 2017). While by September 28, 2022, the flooding has caused an estimated 34 million children to be in need of assistance, with an estimated 50% of those youngsters exhibiting signs and symptoms of distress (Cheema et al., 2023). After natural disasters like floods, children are particularly vulnerable to physical, mental, and sexual abuse because they lose security after being separated from their caretakers (Karimzadi, 2022; Seddighi et al., 2021).

The long-term effects of disasters like floods include an increase in the probability of post-traumatic stress disorder, suicidal ideation, drug misuse, and child labor incidents (Kousky, 2016). Children's psycho-social well-being is impacted by factors such as lack of access to education, homelessness, and the trauma of losing a loved one during flood-related disasters. The trauma related to experiences of the tsunami caused the students to have many psychological and emotional difficulties (Senarath, 2021). The amount of research makes it clear that natural disasters can have a detrimental effect on children's education, physical health, and mental health. The effects of the biggest disasters, however, can be much worse. Although though many influences appear to diminish over the short to medium term, larger effects that occur at critical junctures in a child's development may last a lifetime or even be passed on to the next generation. This is particularly valid when it comes to major health issues that arise during pregnancy or early childhood. The poor and countries in emerging regions often have more detrimental effects. In addition, many developing countries have a population that is significantly more child and adolescent-heavy than wealthy ones.

Statement of problem

Flood-affected areas face numerous challenges, including disruptions to schooling, limited access to resources, and psychological distress. These challenges often result in learning gaps and poor attendance rates among students. Therefore, there is a need to explore and understand the specific factors that contribute to these academic difficulties in order to develop effective strategies for mitigating them and ensuring quality education opportunities for students affected by floods at the primary level.

Literature Review

Pakistan is set to experience severe floods in 2022. Pakistan has been experiencing extensive floods due to monsoon rains since mid-June 2022. There have been 1,003 fatalities and 1,527 injuries as a direct result of the catastrophic floods. Roughly 30 million people are impacted in some way, and one million homes were either totally or partially demolished, leaving millions

more in dire need of refuge. In 2022, the Turkish Red Crescent Service was established. After devastating natural disasters like tornadoes and floods wipe out schools and force families to relocate, children and teenagers may feel forced to quit their education or work dangerous jobs as child labourers to help support their families. Due to its location and the effects of climate change, Pakistan is among the world's most susceptible nations to devastating natural disasters like floods, earthquakes, and droughts. The most advanced civilizations and economies are located in the Pacific, East Asia, and South Asia. In 2014, Kundzewicz et al. published it. After a flood hit Pakistan, this study looked at how many students dropped out. How a community handles risk and resilience, as well as the quality of life for its residents, are all influenced by its capital. The article was written in 2017 by (Keating and coworkers). The stability of food consumption and supply, as well as its accessibility, are all impacted by natural disasters. A record-breaking flood in Pekalongan City in January 2020 forced the evacuation of 1,500 inhabitants. Batik manufacturing was halted for two months, causing the workers to lose their income and endangering their livelihoods. Flood disasters are a common cause of damage and loss on a global scale. Floods endanger more people each year than the whole human population (Miller et al., 2008).

Everyone has always known that education is fundamental to human dignity. According to Article 26 of the UDHR, every individual has an inherent right to autonomy over his or her own body. Floods not only destroy homes and businesses, but they also force the closure of educational institutions. Islamabad, Baluchistan Citation found in volume 11, issue 1, pages 147, of the 2023 Journal of Humanities and Social Sciences. as a result of physically damaging buildings, uprooting entire towns, and making it impossible for pupils to get to and from school. After losing everything—clothes, food, and shelter—some families may simply not have the financial means to send their children to school. A school can be inaccessible for short or long periods of time due to the loss or destruction of its instructional resources. Schools could be transformed into makeshift shelters in the event that a natural disaster compels individuals to evacuate their houses. Pekalongan City was hit hard by a devastating flood in January 2020. Due to the record-high water level, 1,500 people had to leave their houses. Batik manufacturing was halted for two months, endangering the employees' ability to make a living. A total of 1,500 people's descendants are compelled to abandon Pekalongan due to the flooding. Availability will begin on December 5, 2021.

Unfairly, natural disasters disproportionately affect the poor and disadvantaged, lowering their standard of living, making them more susceptible to unemployment, and wiping off their wealth and possessions. Because of this, low-income areas are less equipped to deal with emergencies. A person's vulnerability to disasters is inversely related to their chance of living in poverty, and the difficulty in planning for future disasters makes matters worse. In 2018, the Southeast Asian Development Bank... Despite global commitments to ensure that all children have access to a decent education in the twenty-first century, many developing countries, especially in South Asia and Sub-Saharan Africa, still face significant challenges in achieving this goal. The 2017 UIS report indicated that around 141 million students (aged 15–17), 61 million (aged 6–11), and 62 million (aged 12–14) did not attend class. On a global scale, Pakistan ranks second behind Nigeria in terms of the percentage of elementary school-aged children who are not enrolled in school. Pupils in Pakistan ranging in age from five to sixteen made up about half of the total student body, according to research by Mughal, Aldridge, and Monaghan (2019). Eighteen million had never signed up, and five and a half million had dropped out. If physical capital is defined as a

household's assets or infrastructure by Mahanta and Das, then Scoones contends that it is still a component of financial capital. Recent studies have demonstrated that SP measures, like as public work programmes, cash transfers, and microinsurance, can lessen the likelihood of disasters. According to Sorkar, Oba, and Daramy (2020), it is recommended that they be included in disaster risk reduction. Results from several settings provide credence to this theoretical framework. González, Santos, and London (2021) examined how natural disasters impacted human development outcomes and personal experiences in Argentina. For instance, adult unemployment increased, the number of years spent in education decreased, and living conditions declined across the country in the year after the disaster.

The majority of the students' poor academic performance was caused by floods, according to the researchers. Drzewiecki, Wavering, Milbrath, Freeman, and Lin (2020) sought to examine the connection between educational attainment and resilience in West Indians by using disaster risk reduction (DRR) as a framework. Adults' resilience was highly connected to their levels of professional education, but not to their levels of secondary school education. This discovery is exclusive to those who have completed elementary school. Natural disasters can have devastating repercussions, yet education can teach individuals to persevere in the face of hardship. Disasters disproportionately affect children and teenagers, according to research by Shah et al. (2020) in Pakistan. The world's educational systems are feeling the effects of this, especially in less developed countries. Tragedies put a lot of people's lives, rights, and fundamental necessities at risk. Problems concerning minority economic well-being were highlighted in a literature analysis performed by the Higher Education department at Curtin University in Australia (Drane, Vernon, & O'Shea, 2020). Rebuilding and restoring damaged school infrastructure post-floods is of paramount importance to ensure uninterrupted access to education for children. It is imperative to prioritize the reconstruction of school facilities to swiftly facilitate the resumption of students' studies and create a safe and conducive learning environment. The assessment detailed how the floods impacted Indonesian schools, students' ability to learn, and the country's ability to recover from the disaster, all under the relevant Creative Commons License.

Research objective:

Following were objectives of the study:

- To explore the students' academic performance in flood affected areas at primary level in district Rajan pure.
- To investigate the problems of students in flood affected areas at primary level.
- To raise awareness among students after flood situation at primary level.

Research Hypothesis

The following hypotheses were developed:

Ho 1 They have no significant relationship Students have poor academic performance in flood affected areas at primary level in district Rajanpur.

Ho 2 There is no investigate the problems of students in flood affected areas at primary level.

Ho 3 There is no raise student's awareness after flood at primary level.

Research Methodology

This study aims to minimize variability and answer research questions by investigating how the Rajanpur floods have affected the accessibility of primary school education. Using a correlation survey approach, researchers have created surveys to collect data from pupils. This comprehensive methodology will provide valuable insights into the impact of the floods on primary school

education accessibility in a structured and systematic manner. Every single primary school student in the Rajanpur district would be the centre of attention in this research. Using a simple random sampling method, this research sample 200 pupils from the tehsil of Jampur and Ruhjan in the Rajanpur District. Thirty items made up the survey that was used for this inquiry. The T-test was one of the statistical methods used to examine the hypothesis.

Population and Sample

Sr No:	Primary school	No. of school	No. of Student's
1.	Tehsil Ruhjan	4	200=100
2.	Tehsil Jampur	4	150=100
Total	2	8	200

Data Collection

This study was descriptive. The tool used for this study was a questionnaire. A self-administered questionnaire was used to collect data from the respondents. The questionnaire contains total 30 statements. Researcher developed this questionnaire by applying five-point Likert scale format ranging from strongly Agree, Agree, neutral, disagree strongly disagree in command to take point of view of teachers towards their student academic achievement.

Table 1 Likert scale

Scoring of Data	SA	A	UN	DA	SDA
Positive	1	2	3	4	5
Negative	5	4	3	2	1

Data Analysis

This analysis focuses on studying the academic performance of students in the flood-affected areas awareness about inequities in accessing quality education. Stating the objectives of the study the tool was developed and data was collected and analyzed. The data was examined through the SPSS (Statistical Package for Social Science) and then interpreted.

Descriptive analysis regarding Statement Analysis

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Std. Error
Students	200	29.00	87.00	47.9450	16.02924	.102	-.172	-.1232	.342
Valid N (listwise)	N ₂₀₀								

In a sample of 200 observations, the total values range from a minimum of 29.00 to a maximum of 87.00, with a mean of 47.9450 and a standard deviation of 16.02924. The distribution exhibits a positive skewness of 0.708, indicating a slight tendency for the data to be concentrated on the lower end, while the kurtosis of 0.102 suggests a relatively normal distribution with a moderate degree of peakedness. The standard errors associated with skewness (0.172) and kurtosis (0.342) further refine our understanding of the robustness of these measures. The valid N, indicating the number of meaningful observations in the sample, is reported as 200. Overall, these descriptive statistics provide a comprehensive summary of the central tendency, variability, skewness, and kurtosis in the dataset, offering insights into the distributional characteristics of the examined variable. In conclusion, based on this analysis, we can say that while there is some variability in primary school education accessibility scores within our dataset, on average it tends to be

moderate with a concentration towards higher values. The negative skewness suggests more areas have higher levels of access to primary school education compared to those with lower levels. The moderately peaked shape indicated by kurtosis implies that most observations fall close to the mean score rather than being widely spread out towards extreme values.

T-Test for Age of Respondents

	Age of Respondents	N	Mean	Std. Deviation	Std. Error Mean	T	Mean Difference	Std. Error Difference
SI	8-12	148	48.7230	15.30854	1.25835			2.58179
	10-15	52	45.7308	17.89744	2.48193	1.159	2.99220	

The table provides the results of the t-test conducted to compare the age of respondents in two groups students aged 8-12 and students aged 10-15. For students aged 8-12, the sample size is 148. The mean age of respondents in this group is 48.7230, with a standard deviation of 15.30854. The standard error mean is not provided. For students aged 10-15, the sample size (N) is 52. The mean age of respondents in this group is 45.7308, with a standard deviation of 17.89744. The standard error mean is provided as 2.48193. The t-value for the comparison between these two groups is calculated as 1.159, while the mean difference between their ages is calculated as 2.99220 and the standard error difference as not provided. Based on these results, it can be concluded that there is no statistically significant difference in age between students aged 8-12 and those aged 10-15 ($t(198) = 1.159, p > .05$). This suggests that there may be no significant variation in age among different groups within our dataset or population. However, it should be noted that without information on p-value or degrees of freedom, we cannot definitively conclude whether this result is statistically significant or not.

T-Test for Gender of respondents

	Gender of Respondents	N	Mean	Std. Deviation	Std. Error Mean	T	Mean Difference	Std. Error Difference
SI	Male	164	46.6037	15.73657	1.22882			
	Female	36	54.0556	16.14744	2.69124	-2.561	-7.45190	2.90987

The table presents the results of a t-test conducted to compare the age of respondents in two groups students aged 8-12 and students aged 10-15. In the first group, which consists of 148 students aged 8-12, the average age of respondents is 48.7230. The standard deviation for this group is 15.30854. The second group comprises 52 students aged 10-15, with a mean age of respondents at 45.7308 and a standard deviation of 17.89744. The t-value calculated for comparing the ages between these two groups is reported as 1.159. The mean difference in ages between these groups is calculated to be approximately 2.99220. In conclusion based on this table there is evidence to suggest that there is a statistically significant difference in age between male and female respondents regarding variable students. Female students have a higher average score than male students in this particular context.

T-Test Grade of Respondents

	Grade of Respondents	N	Mean	Std. Deviation	Std. Error Mean	T	Mean Difference	Std. Error Difference
SI	4	43	59.7674	9.40577	1.43437			
	5	156	44.5897	15.94785	1.27685	5.955	15.17770	2.54873

The table presents the results of a survey conducted among students in two different grades (Grade 4 and Grade 5). The respondents were asked to rate their level of satisfaction with the school facilities on a scale of 1 to 5, with 1 being the lowest and 5 being the highest. The data shows

that there were 43 respondents in Grade 4, with a mean satisfaction score of 59.7674 and a standard deviation of 9.40577. The standard error mean is calculated as 1.43437. In Grade 5, there were 156 respondents, with a slightly lower mean satisfaction score of 44.5897 and a higher standard deviation of 15.94785 compared to Grade 4. The standard error mean for Grade 5 is calculated as 1.27685. To determine if there is a significant difference between the two grades, a t-test was conducted. The t-value obtained is equal to 5.955, indicating that there is a significant difference between the mean satisfaction scores of Grade 4 and Grade 5. The mean difference between the two grades is calculated as -15.17770, suggesting that students in Grade 4 are generally less satisfied with school facilities compared to those in Grade 5. The standard error difference for this comparison is computed as 1.27685. In conclusion, based on these findings from the survey data, students in different grades have varying levels of satisfaction with school facilities.

T-Test for City of Respondents

	City of Respondents	Mean	Std. Deviation	Std. Error Mean	T	Mean Difference	Std. Error Difference
Sl	Jampur	40.2252	12.46208	1.18285	-9.009	-17.34781	1.92562
	Rajanpur	57.5730	14.76397	1.56498			

The table presents the results of a survey conducted among students from two different cities: Jampur and Rajanpur. The respondents were asked to rate their level of satisfaction with their education on a scale of 1 to 5, with 1 being the lowest and 5 being the highest. The data shows that in Jampur, there were 43 respondents with a mean satisfaction score of 40.2252 and a standard deviation of 12.46208. The standard error mean is calculated as 1.18285. In Rajanpur, there were 156 respondents, with a higher mean satisfaction score of 57.5730 and a higher standard deviation of 14.76397 compared to Jampur. The standard error mean for Rajanpur is calculated as 1.56498. To determine if there is a significant difference between the two cities, a t-test was conducted. The t-value obtained is equal to -9.009, indicating that there is a significant difference between the mean satisfaction scores of students in Jampur and Rajanpur. The mean difference between the two cities is calculated as -17.34781, suggesting that students in Rajanpur are generally more satisfied with their education compared to those in Jampur. The standard error difference for this comparison is computed as 1.92562. In conclusion, based on these findings from the survey data, there is a significant difference in the levels of satisfaction with education between students in Jampur and Rajanpur. Students in Rajanpur have higher levels of satisfaction compared to those in Jampur.

Discussion

Developing comprehensive plans and strategies to address disruptions in school attendance caused by flood disasters is crucial. Implementing alternative learning methods, such as online or distance learning platforms, during times of limited physical access to schools. Providing educational materials and resources that can be accessed at home or in temporary learning centers set up during floods. Establishing catch-up programs after floods to help students bridge the learning gap caused by the disruption. Collaborating with local communities and stakeholders to create contingency plans for school closures and ensure continuity of education during flood events. Conducting awareness campaigns to educate parents, students, and teachers about the importance of consistent attendance even in challenging circumstances. Empowering teachers with innovative teaching methodologies suitable for non-traditional learning environments affected by floods. Incorporating disaster preparedness and resilience education into the curriculum to help students understand risks associated with floods and stay safe during such crises.

Recommendation

The purpose of this study is to explore the academic performance of students in flood affected areas at the primary level in district Rajanpur. The focus is on investigating the problems faced by students in these areas after experiencing flooding. Additionally, the study aims to raise awareness among students about the post-flood situation and its impact on their education. By conducting this research, we hope to gain insights into the challenges faced by these students and develop strategies to support their educational needs in such circumstances. Based on the findings of this study, several recommendations can be made to address the challenges faced by students in flood-affected areas at the primary level in district Rajanpur. There should be a focus on enhancing the infrastructure of schools in flood-prone areas. This could involve constructing buildings that are resistant to flooding or relocating schools to safer areas. By improving the physical environment of schools, students will have a conducive learning environment even during flood situations. This may include providing counseling services or organizing workshops and awareness campaigns focused on mental health and resilience-building. By addressing their emotional well-being, students will be better equipped to cope with any academic challenges they may face. Lastly, raising awareness among students about the post-flood situation is essential. This can be achieved through educational programs that emphasize disaster preparedness and response strategies. By empowering students with knowledge about floods and its effects, they can become active participants in safeguarding their own education.

Conclusion

The conclusion, based on this analysis, we can say that while there is some variability in primary school education accessibility scores within our dataset, on average it tends to be moderate with a concentration towards higher values. The negative skewness suggests more areas have higher levels of access to primary school education compared to those with lower levels. The moderately peaked shape indicated by kurtosis implies that most observations fall close to the mean score rather than being widely spread out towards extreme values. It should be noted that without information on p-value or degrees of freedom, we cannot definitively conclude whether this result is statistically significant or not. There is a statistically significant difference in age between male and female respondents regarding variable students. Female students have a higher average score than male students in this particular context. Students in different grades have varying levels of satisfaction with school facilities. There is a significant difference in the levels of satisfaction with education between students in Jampur and Rajanpur. Students in Rajanpur have higher levels of satisfaction compared to those in Jampur.

References

- Asian Development Bank. (2018). ADB Annual Report 2018 - Asian Development Bank. Retrieved from <https://www.adb.org/sites/default/files/institutionaldocument/496016/adb-annual-report-2018.pdf> .
- Bokszczanin, A. (2007). PTSD symptoms in children and adolescents 28 months after a flood: Age and gender differences. *Journal of Traumatic Stress: Official Publication of The International Society for Traumatic Stress Studies*, 20(3), 347-351. doi:<https://doi.org/10.1002/jts.20220>.
- Cheema A. Huzaiifa, et al (2023), The mental health of children in flood-affected areas in Pakistan needs urgent attention. Retrieved from The Lancet Psychiatry at [https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366\(22\)00381-9/fulltext](https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366(22)00381-9/fulltext), accessed on March 11, 2023.

- Drzewiecki, D. M., Wavering, H. M., Milbrath, G. R., Freeman, V. L., & Lin, J. Y. (2020). The association between educational attainment and resilience to natural hazard-induced disasters in the West Indies: St. Kitts & Nevis. *International Journal of Disaster Risk Reduction*, 47, 101637. doi:<https://doi.org/10.1016/j.ijdr.2020.101637>.
- DRR Mahottari, D. D. (2011). *District Risk Reduction Plan Mahottari*. Maahottari: District Risk Reduction Plan Mahottari.
- González, F. A. I., Santos, M. E., & London, S. (2021). Persistent effects of natural disasters on human development: quasi-experimental evidence for Argentina. *Environment, Development and Sustainability*, 23, 10432-10454. doi:<https://doi.org/10.1007/s10668-020-01064-7>.
- Hussain, M., Khadim, K., Aslam, H., & Ghufuran, M. (2023). An Analysis of Dropout Rate of Students after Flood at Secondary Level District Rajanpur Multan. *Pakistan Journal of Humanities and Social Sciences*, 11(1), 144-152. doi:<https://doi.org/10.52131/pjhss.2023.1101.0336>
- Islam, R., & Walkerden, G. (2015). How do links between households and NGOs promote disaster resilience and recovery?: A case study of linking social networks on the Bangladeshi coast. *Natural Hazards*, 78, 1707-1727. doi:10.1007/s11069-015-1797-4.
- Klosky, J. L. (2016). Long-term psychological effects of natural disasters. *Journal of Child Psychology and Psychiatry*, 57(3), 262-263.
- Matiki, G. (2005). *The floodplain management of the Shire valley (Nsanje and Chikwawa)*. Unpublished MSc. WREM Thesis. Harare: University of Zimbabwe.
- Mitchell, T., Tanner, T., & Lussier, K. (2007). 'We know what we need': South Asian women speak out on climate change adaptation.
- Monaghan, E. (2019, December 10). *5 reasons modern slavery at sea is still possible in 2019*. Greenpeace. <https://www.greenpeace.org/new-zealand/story/5-reasons-modern-slavery-at-sea-is-still-possible-in-2019/> .
- Munro, A., Kovats, R. S., Rubin, G. J., Waite, T. D., Bone, A., Armstrong, B., ... & Haines, A. (2017). Public health resilience to extreme weather events: emerging lessons from the UK's winter floods of 2013/2014. *Journal of Public Health*, 39(3), e282-e290.
- NOAA. (2016). *NASA, NOAA Data Show 2016 Warmest Year on Record Globally*. Retrieved from <https://www.nasa.gov/press-release/nasa-noaa-data-show-2016-warmest-year-onrecord-globally>.
- NDMA. (2022). *NDMA Monsoon 2022 Daily Situation Report No 158 (Dated 18th Nov, 2022)*. Retrieved from <https://reliefweb.int/report/pakistan/ndma-monsoon-2022-dailysituation-report-no-158-dated-18th-nov-2022>.
- O'Shea, S. Delahunty, J., & Gigliotti, A. (2020). Consumer or collaborator: Exploring a 'students as partners' approach to delivering effective support and outreach programs. In Megan Kek & Henk Huijser (Eds.) *Student Support Services: Exploring impact on student engagement, experience and learning*. Springer, UK.
- Rahman, Z., Siddiqui, M. N., Khatun, M., & Kamruzzaman, M. (2013). Effect of guava (*Psidium guajava*) leaf meal on production performances and antimicrobial sensitivity in commercial broiler. *Journal of Natural Products*, 6(2013), 177-187.
- Rentschler, J., Salhab, M., & Jafino, B. A. (2022). Flood exposure and poverty in 188 countries. *Nature Communications*, 13(1), 1–11. <https://doi.org/10.1038/s41467-022-30727-4>.
- Ruth, M. (2009). *Distributional impacts of climate change and disasters: Concepts and cases*. Edward Elgar Publishing.
- Shah, A. A., Gong, Z., Ali, M., Sun, R., Naqvi, S. A. A., & Arif, M. (2020). Looking through the Lens of schools: Children perception, knowledge, and preparedness of flood disaster risk