

# Prime University Journal



**Prime University**

**Centre for Research, HRD and Publications  
Prime University**

114/116, Mazar Road, Mirpur-1, Dhaka-1216

E-mail : pucrhp@gmail.com  
primeuniversity\_crhp@yahoo.com

Website: [www.primeuniversity.edu.bd/crhp](http://www.primeuniversity.edu.bd/crhp)

Published and copyright protected by:  
**Prime University**

**Price:** BDT 250.00  
US\$ 5.00

# **Prime University Journal**

Volume-15, Number-1  
January-June: 2021

# Management for Publication of Prime University Journal

## Patrons:

Engineer Md. Towhidur Rahman Chairman, Board of Trustees	Patron
Md. Ashraf Ali Secretary General, Board of Trustees	Patron
Mir Shahabuddin Member, Board of Trustees	Patron
Sajjatuz Jumma Member, Board of Trustees	Patron

## Editorial Board:

Prof. Dr. M. Jahangir Alam Vice Chancellor, Prime University	Chief Editor
Prof. Dr. Mohammad Arshad Ali Dean, Faculty of Arts and Social Sciences, Prime University	Executive Editor
Prof. Dr. Jahangir Alam, D. Engg Dean, Faculty of Engineering, Prime University	Member
Prof. Dr. Abdur Rahman, Dean, Faculty of Law, Prime University	Member
Prof. Mahboob Ul Alam, Department of Bangla, Prime University	Member
Prof. Dr. Md. Shafi Uddin Miah Department of Civil Engineering, Prime University	Member
Prof. Dr. M. Shahinoor Rahman Department of English, Islamic University	Member
Prof. Dr. Jamila A. Chowdhury Department of Law, University of Dhaka	Member
Prof. Dr. Zinnat Ara Begum Department of Management Studies, University of Rajshahi	Member

## Advisors:

Prof. Dr. Mahesh Gandhi Chief Advisor, Sambalpur University, Burla
Dr. Md. Hamid Uddin Head of Business Programs, The University of Southampton, Malaysia
Prof. Dr. Rajat Kumar Pal Department of CSE, University of Calcutta
Prof. Dr. A.H.M Asadul Huq Department of Electrical and Electronic Engineering, University of Dhaka
Prof. Dr. Anika Yunus Department of Water Resources Engineering, BUET

## Editorial Note

Prime University Journal (PUJ) is a peer-reviewed International Journal. It publishes research based articles, case studies, book reviews of different disciplines such as literature, culture, business, arts, social science, law, technology, science, engineering and allied disciplines. It has an Editorial Board involving the national and international scholars of different disciplines.

Seven research papers on different disciplines have been selected for publication in the current issue reviewed by academics of different reputed universities.

In the *first* article, thin film solar cell of highly-efficient Antimony Trisulfide ( $\text{Sb}_2\text{S}_3$ ) has been simulated and investigated using SCAPS-1D software to deal with the influence of the thickness of absorber layer and buffer layer on the performance of solar cells.

The *Second* article attempted to present the real scenario of remittance inflow to Bangladesh during Covid-19 pandemic and suggested possible post-Covid-19 strategies to have a continuous remittance flow towards Bangladesh

The *third* one aimed at understanding the social myths of women caused by religion, society and culture through an analysis of the two great fictional works of Ngugi wa Thiong'o and Nathaniel Hawthorne of two continents.

The *fourth* paper attempted to identify the predominant types of suicidal behaviour adopted or committed by secondary school students and to identify the responsible agents in this regard.

The *fifth* one evaluated different scenarios of harmful industrial gas dispersion and their influence on the surrounding ecosystem.

The *sixth* article aimed to find out the preferences of readers between online and offline newspapers and relate it with the uses and gratification theory.

The *last* paper has tried to show whether the learners of EFL (English as a foreign language) in Bangladesh lack emotional intelligence and has tried to see whether emotional intelligence could be utilized in the context of Bangladesh in learning a foreign language like English.

The book review section includes the review of the book ‘Constitutional Law of Bangladesh’ written by Mahmudul Islam. This book will be helpful to students, academics, lawyers, judges, policymakers, political and legal historians, as well as regular readers.

I would like to express my deep gratitude to the Patrons of the Journal for their support. My sincere thanks to all the members of the Editorial Board and the distinguished reviewers as well. I hope that this volume will be of great benefit to the students, researchers, academics and the society.

**Prof. Dr. M. Jahangir Alam**  
Chief Editor

# Contents

## **Design and Simulation of Cadmium Free Antimony Tri-sulfide Based Solar Cells with Zinc Selenide Buffer Layer Using SCAPS-1D**

Md. Shafiqul Islam  
Sunirmal Kumar Biswas  
Md. Abdul Halim  
Md. Mostak Ahmed 8

## **Remittance Inflow to Bangladesh: Post Covid-19 Strategies**

B. M. Sajjad Hossain  
Abdur Rahman 23

## **Wanja in *Petals of Blood* and Hester Prynne in *The Scarlet Letter* as Symbols for Breaking Social Myths about Women**

Mohammad Arshad Ali  
Md. Abdul Awal 39

## **Suicidal Behaviour among the Secondary Level Students of Dhaka: Types and Responsible Agents**

Rahul Chandra Shaha  
Ankhi Rani 50

## **Risk Analysis of the Accidental Release of Hydrogen Sulfide from a Petroleum Refinery**

M. G. Toufik Ahmed  
Galib Hassan Khan  
Ahosan Habib Rakib 61

## **Readers' Preference for the Online and Offline Newspaper: A Case Study on University Students**

Prashanta Kumar Shill 72

## **Utilizing Emotional Intelligence in English Language Teaching in the Context of Bangladesh**

Sayeef Ahmed 93

## **Book Review**

**Constitutional Law of Bangladesh** written by Mahmudul Islam, Mullick Brothers, Dhaka, 2002, 3<sup>rd</sup> edn, Pages 1140, ISBN 984-32-01-0126-4  
Md. Mostafijur Rahman 104

## Design and Simulation of Cadmium Free Antimony Tri-sulfide Based Solar Cells with Zinc Selenide Buffer Layer Using SCAPS-1D

Md. Shafiqul Islam<sup>1</sup>, Sunirmal Kumar Biswas<sup>2</sup>, Md. Abdul Halim<sup>3</sup>  
and Md. Mostak Ahmed<sup>4</sup>

**Abstract:** In this research, highly-efficient Antimony Trisulfide ( $Sb_2S_3$ ) thin film solar cell has been simulated and investigated using SCAPS-1D software. Antimony Trisulfide has emerged as a promising material for thin-film solar cells due to its non-toxicity, earth abundance, low cost and availability. The optical properties such as band gap of 1.62 eV approximately, high absorption coefficient greater than  $10^4 \text{ cm}^{-1}$  etc. which satisfy the quality of an ideal absorber layer. This paper deals with the influence of the thickness of absorber layer and buffer layer on the performance of solar cells. This article tried to avoid cadmium for solar cell generation due to its high toxic influence on the environment. Using ZnSe as a buffer layer various photovoltaic parameters have been calculated. In this work the Efficiency ( $\eta$ ), Fill Factor (FF), Open-circuit Voltage (Voc) and Short-circuit current (Jsc) have been measured by varying thickness of absorber layer in the range of  $0.5 \mu\text{m}$  to  $4 \mu\text{m}$  and by varying thickness of buffer layer in the range of  $0.05 \mu\text{m}$  to  $0.1 \mu\text{m}$ . The optimized solar cell shows an efficiency of 20.03% when the absorber layer thickness is  $4 \mu\text{m}$  and buffer layer thickness is  $0.08 \mu\text{m}$ . The defect density C-V and temperature effect on  $Sb_2S_3$  thin film solar cell has also been investigated in this work.

**Keywords:** Antimony Tri-sulfide, SCAPS-1D, Defect Density, I-V Measurement, C-V Curve, Temperature, Resistance

### Introduction

In today's world, there is a desire for a sustainable, renewable, cost-effective, and clean energy to address the primary challenges of global warming. Renewable energy sources include wind, geothermal, biomass, and solar energy. Solar energy, among all the ambient renewable energy sources, has a lot of potential in a wide range of applications. The materials are crucial things for the generation of high efficient solar cell. Some researchers have found out some solar energy materials which are based on high light absorption and suitable physical properties to improve

---

<sup>1</sup>Lecturer, Dept. of EEE, Prime University, Dhaka, Bangladesh.  
E-mail:shuvo5684@gmail.com

<sup>2</sup>Senior Lecturer, Dept. of EEE, Prime University, Dhaka, Bangladesh.  
E-mail:sujan.ru.apee@gmail.com

<sup>3</sup>Senior Lecturer, Dept. of EEE, Prime University, Dhaka, Bangladesh.  
E-mail:halimabdul552@gmail.com

<sup>4</sup>Associate Professor, Dept. of EEE, Prime University, Dhaka, Bangladesh.  
E-mail:mostakahmedpu@gmail.com



the efficiency of solar cell. A few materials explored for solar cell application is SnS (Nair, Garcia-Angelmo & Nair, 2016), Cu<sub>2</sub>O (Li, Ni Feng, 2019), Cu<sub>2</sub>SnS<sub>3</sub> (Berg et al. 2012), Cu<sub>2</sub>GeS<sub>3</sub> (Jin et al. 2017), GeSe (Xue et al. 2017), Sb<sub>2</sub>S<sub>3</sub> (Moon et al. 2010), Sb<sub>2</sub>Se<sub>3</sub> (Liu et al. 2017) etc. These materials have shown appropriate physical properties suitable for PV cells. Among these, Sb<sub>2</sub>S<sub>3</sub>, Sb<sub>2</sub>Se<sub>3</sub> absorber based solar cells have shown comparatively better PV efficiency about 6.5% which has drawn a significant attention by scientific society.

The Antimony Tri-sulfide (Sb<sub>2</sub>S<sub>3</sub>) is a semiconductor material composed of antimony and sulfur. These materials are crucial for terrestrial applications because of their high efficiency, satisfactory performance for long time and low price. These semiconductors exhibit p-type conductivity, a high absorption coefficient, and a direct band-gap that makes them appropriate for usage as a thin film absorber layer material (Jackson et al. 2016) (Basak & Singh, 2021). Compared to wafer based crystalline a thin film solar cells with polycrystalline Sb<sub>2</sub>S<sub>3</sub> absorber layers shows better performance and give good efficiency. The Sb<sub>2</sub>S<sub>3</sub> based solar cells provide better radiation hardness; strong stability and highest efficiencies and superb film factor (Repins et al. 2008) (Lindahl et al. 2013) (Chirilă et al. 2011)s. The Sb<sub>2</sub>S<sub>3</sub> is a compound semiconductor material which lessens the necessity of extensive minority carrier diffusion length of solar cells. Due to the high absorption coefficient this p type semiconductor material is the most promising materials now a days for thin film photovoltaic technology. An intermediate layer call buffer layer has been used in this simulation based work in between absorber layer and window layer. Window layer has been used for a specific reason which means it provide structural stability for the device and to fix the electrostatic conditions inside the absorber layer. The prominent compound materials CdS could be used as buffer layer in the solar cells. But due to its bad impact on environment author used Zinc Selenide (ZnSe).

A thin film of Antimony Tri-sulfide (Sb<sub>2</sub>S<sub>3</sub>) based solar cells has been presented in this work using SCAPS to evaluate photovoltaic parameters such as  $\eta$ , FF, Jsc and Voc at 300K. The impact of absorber layer and buffer layer on the performance of Sb<sub>2</sub>S<sub>3</sub> solar cells has been simulated using SCAPS.

### **Mathematical Modeling and Material Parameters**

A compound Antimony Tri-sulfide (Sb<sub>2</sub>S<sub>3</sub>) based solar cell consisting of p-type absorber layer Sb<sub>2</sub>S<sub>3</sub> and n-type buffer layer using ZnSe has been shown in Fig.1 (a). i-ZnO has been used as a window layer in this solar cell configuration. The band diagram of Sb<sub>2</sub>S<sub>3</sub> solar cell has been shown in

Fig.1(b). To simulate and analyze the  $Sb_2S_3$  based solar cell, the author used Solar Cell Capacitance Simulator Structures (SCAPS-1D) (Basak and Singh, 2021). SCAPS is a one dimensional solar cell device simulator invented by University of Gent, which is available for the PV research community freely all over the world.

Basic semiconductor equations, the continuity equation and the Poisson equation can be solved by SCAPS easily for electron and holes (Movla, 2014).

$$\frac{d^2}{dx^2} \Psi(x) = \frac{e}{\epsilon_0 \epsilon_r} (p(x) - n(x) + N_D - N_A + \rho_p - \rho_n) \dots \dots \dots (1)$$

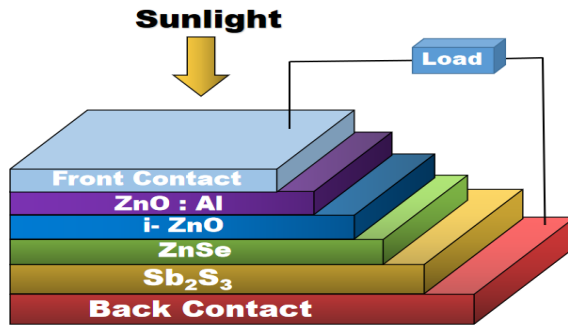


Fig.1 (a): Schematic diagram of  $Sb_2S_3$  based solar cell

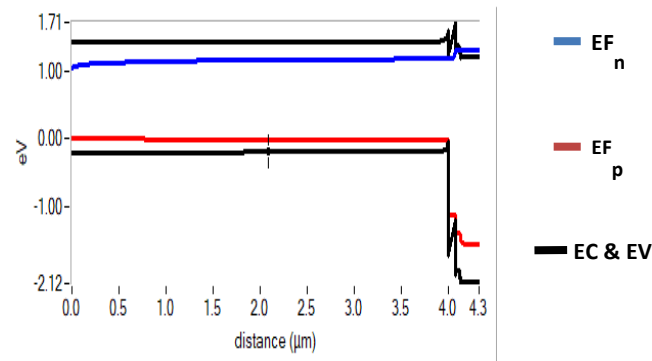
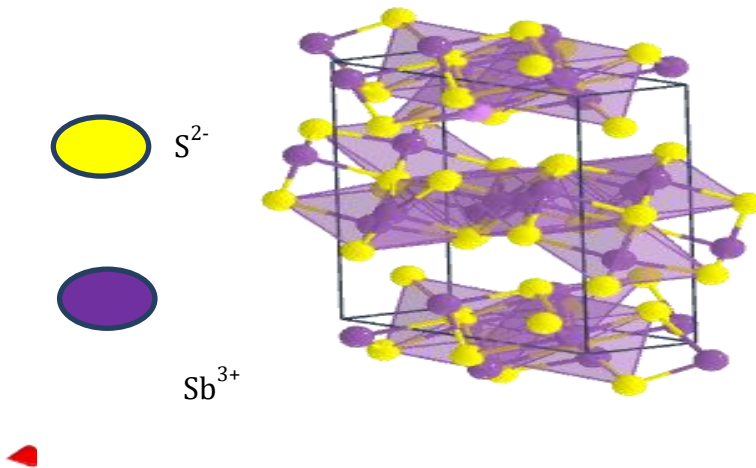


Fig.1(b): Energy band diagram of  $Sb_2S_3$



**Fig. 1 (c): Crystal structure of Sb<sub>2</sub>S<sub>3</sub>**

Sb<sub>2</sub>S<sub>3</sub> is Stibnite structured and crystallizes in the orthorhombic Pmn2<sub>1</sub> space group. The structure is two-dimensional and consists of two Sb<sub>2</sub>S<sub>3</sub> sheets oriented in the (0, 0, 1) direction. Fig.1(c) shows the crystal structure of Sb<sub>2</sub>S<sub>3</sub> using VESTA software. The lattice parameter of Sb<sub>2</sub>S<sub>3</sub> crystal structure a= 3.87Å°, b= 11.23 Å°, c= 12.13 Å° and angle α=β=γ=90°.

From equation 1 it can easily be said that Ψ is electrostatic potential, e is electrical charge, ε<sub>0</sub> is the vacuum permittivity, ε<sub>r</sub> is the relative permittivity, p and n are hole and electron concentrations, N<sub>D</sub> is charged impurities of donor and N<sub>A</sub> is acceptor type. There are also holes and electrons distribution ρ<sub>p</sub> and ρ<sub>n</sub> in this equation.

The following equations 2 and 3 are the continuity equations for electrons and holes:

$$\frac{dJ_n}{dx} = G - R \dots \dots \dots (2)$$

$$\frac{dJ_p}{dx} = G - R \dots \dots \dots (3)$$

J<sub>n</sub> and J<sub>p</sub> represents the electron and hole current densities, R represent the recombination rate and G is the generation rate. Carrier transportation

happened by drift and diffusion in the semiconductor and can be expressed in the following equations

$$J_n = D_n \frac{d_n}{d_x} + \mu_n n \frac{d\phi}{d_x} \dots \dots \dots (4)$$

$$J_p = D_p \frac{d_p}{d_x} + \mu_p p \frac{d\phi}{d_x} \dots \dots \dots (5)$$

**Table-1: The Parameters for the Sb<sub>2</sub>S<sub>3</sub> Based Solar Cell at 300K**

Parameters	Sb <sub>2</sub> S <sub>3</sub> [17]	ZnSe [16]	ZnO:Al [16]	i-ZnO [17]
E <sub>g</sub> (eV)	1.62	0.08	3.5	3.3
ε <sub>r</sub>	7.08	10	9	9
χ(eV)	3.7	2.9	4.2	4.5
μ <sub>n</sub> (cm <sup>2</sup> V <sup>-1</sup> S <sup>-1</sup> )	9.8	50	10 <sup>2</sup>	10 <sup>2</sup>
μ <sub>p</sub> (cm <sup>2</sup> V <sup>-1</sup> S <sup>-1</sup> )	10	20	25	25
N <sub>D</sub> (cm <sup>-3</sup> )	0	1.5×10 <sup>18</sup>	2.2×10 <sup>18</sup>	1×10 <sup>18</sup>
N <sub>A</sub> (cm <sup>-3</sup> )	5.7×10 <sup>15</sup>	0	1.8×10 <sup>19</sup>	1×10 <sup>17</sup>
V <sub>i</sub> (cm/s)	1×10 <sup>7</sup>	1×10 <sup>7</sup>	1×10 <sup>7</sup>	1×10 <sup>7</sup>
V <sub>i</sub> (cm/s)	1×10 <sup>7</sup>	1×10 <sup>7</sup>	1×10 <sup>7</sup>	1×10 <sup>7</sup>

The solution of the basic equations of semiconductors has been done using SCAPS in 1 dimension and steady state conditions. The parameters used in this Sb<sub>2</sub>S<sub>3</sub> based solar cells are shown in table-1.

**Result and Discussion**

The main goal of this study is to see how changing parameters of the absorber layer affect the light conversion efficiency of Sb<sub>2</sub>S<sub>3</sub> based thin film solar cells. The use of the optimized data will allow us to establish a set of criteria for real-time solar photovoltaic device design with the highest efficiency. This in-depth investigation allowed us to measure the Efficiency (η), Fill Factor (FF), Open-circuit Voltage (Voc) and Short-circuit current (Jsc) in the Sb<sub>2</sub>S<sub>3</sub> -based thin film solar cell, allowing the research community to develop more efficient solar cell devices (Sunny et

al. 2021). In this paper  $\text{Sb}_2\text{S}_3/\text{ZnSe}/i\text{-ZnO}/\text{ZnO}:\text{Al}$  thin film solar cell we found the efficiency 20.03% as shown in table-2.

**Table-2: Photovoltaic Parameters for the  $\text{Sb}_2\text{S}_3$  Based Solar Cell**

Device Structure	$V_{OC}(\text{V})$	$J_{SC}$ ( $\text{mA}/\text{cm}^2$ )	FF (%)	$\eta$ (%)
ZnO:Al/i-ZnO/ZnSe/ $\text{Sb}_2\text{S}_3$	1.13	23.89	73.98	20.03

***Effect of absorber layer and buffer layer thickness on efficiency in  $\text{Sb}_2\text{S}_3$  based solar cell***

The analysis of the simulated results shows that best photovoltaic parameters are found by using ZnSe as a buffer layer. To achieve the best performance of the  $\text{Sb}_2\text{S}_3$  based solar cell, absorber layer and buffer layer thickness of the cell should be optimized. The impact of absorber layer thickness on solar cell parameters such as open circuit voltage ( $V_{oc}$ ), short circuit current ( $I_{sc}$ ), fill factor (FF), and efficiency (%) is thoroughly investigated in this work. Simulated characteristics can be seen in Fig.2 (a, b); 3(a, b); 4(a, b) and 5 (a, b) for absorber layer from 0.5  $\mu\text{m}$  to 4  $\mu\text{m}$  and buffer layer from 0.02  $\mu\text{m}$  to .14  $\mu\text{m}$ .

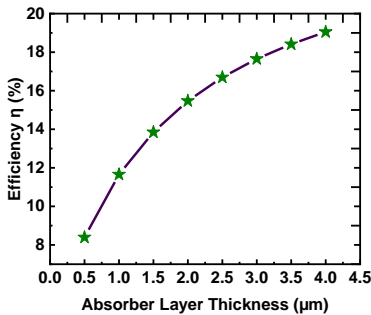


Fig. 2 (a)

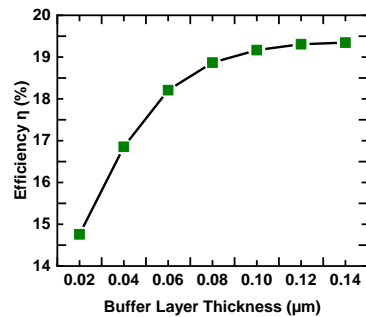


Fig. 2(b)

**Fig.2 (a, b): Effect of absorber layer and buffer layer thickness on efficiency**

The increase of efficiency with increasing thickness represents the increase in the generation of the electron hole pairs in the absorber layer. The efficiency gradually improves as recombination lowers and the extraction rate of electron and hole pairs increase. The rise in optical density is the fundamental cause for the increase in efficiency with increasing thickness.(Mandadapu, et al, 2017).

This paper attempted to take values of different parameters by changing the values of thickness of absorber layer in the range from 0.5  $\mu\text{m}$  to 4  $\mu\text{m}$ . In this paper found efficiency 20% when the absorber layer thickness is 4 $\mu\text{m}$  shown in Fig. 2 (a). and buffer layer thickness is 0.08 $\mu\text{m}$  which is shown in Fig. 2 (b). Fig. 2 (b) indicates that, as the thickness of the buffer layer is increased, the efficiency begins to rise. This is because a thinner buffer layer collects the majority of the produced carriers. Short-wavelength photons are absorbed at a greater distance between the window and the absorber junction as the thickness increases (Chelvanathan, Hossain and Amin, 2010). According to the simulation results, if the absorber layer is too thin, it will not be able to absorb all of the incoming light, resulting in low efficiency. Similarly, when the thickness is greater than the optimum value, the photo produced carrier's travel path is too long, resulting in higher recombination of the generated carrier. When the absorber layer thickness is increased, the carrier recombination rate increases in comparison to the carrier generation rate, resulting in a constant efficiency.

### ***Effect of absorber layer and buffer thickness on Fill Factor in $\text{Sb}_2\text{S}_3$ based solar cell***

As shown in Fig. 3 (a). the fill factor for  $\text{Sb}_2\text{S}_3$  solar cells improves as the thickness of the absorber layer increases. When the absorber layer thickness is increased, the internal resistance rises.

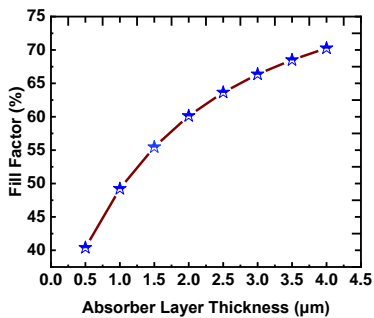


Fig. 3 (a)

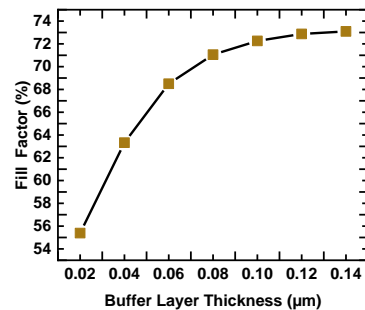


Fig. 3 (b)

**Fig.3 (a, b): Effect of absorber layer and buffer layer thickness on Fill Factor**

As resistance rises, depletion rises as well so the fill factor leads to constant. In  $\text{Sb}_2\text{S}_3$  based solar cells, the use of a ZnSe as buffer layer is required for a reliable and effective hetero-junction. In Fig. 3 (b) the effect of buffer layer thickness on fill factor has been shown. It can be seen that maximum fill factor has been found when the buffer layer thickness is 0.08 $\mu\text{m}$ . After 0.08 $\mu\text{m}$  fill factor tends to constant.

### ***Effects of absorber layer and buffer thickness on Current Density in $\text{Sb}_2\text{S}_3$ based solar cell***

The carrier recombination rate increases as the absorber layer thickness grows in comparison to the carrier generation rate, as shown in Fig.4 (a). The current increases from 0.5  $\mu\text{m}$  to 4  $\mu\text{m}$  thickness of absorber layer, however the current tends to saturate after 4  $\mu\text{m}$  thickness of absorber layer. The current density starts to increase with the increase in  $\text{Sb}_2\text{S}_3$  thickness because the thicker  $\text{Sb}_2\text{S}_3$  layer will absorb more photons and generates more electron–hole pairs (Sunny et al. 2021). The effect of buffer layer thickness on current density has been shown in Fig.4 (b). Maximum current density 23.7  $\text{mA}/\text{cm}^2$  has been found when the buffer layer thickness is 0.02  $\mu\text{m}$ . But the current density is 23.5  $\text{mA}/\text{cm}^2$  when the buffer layer thickness is 0.14  $\mu\text{m}$ . The decrease in current density results due to the less production of electron–hole pair as less number of electron–hole pair can reach the absorber layer with increase in buffer layer thickness (Azzouzi, 2014).

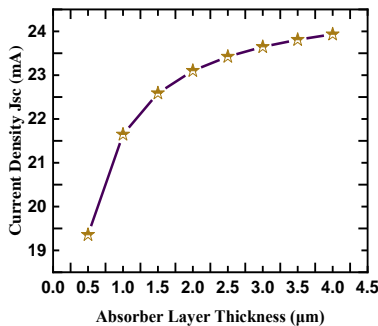


Fig. 4 (a)

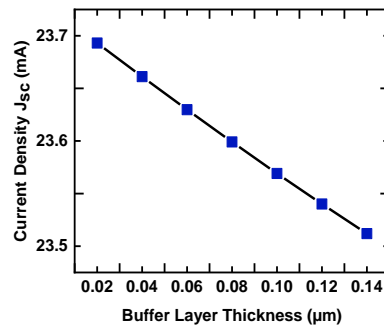


Fig. 4 (b)

**Fig.4 (a, b): Effect of absorber layer and buffer layer thickness on current density**

### ***Effect of absorber layer and buffer thickness on Open Circuit Voltage in $\text{Sb}_2\text{S}_3$ based solar cell***

As shown in Fig.5 (a). The change in  $V_{oc}$  increases as the absorber layer thickness increases due to the effective enhancement of holes mobility. In Fig.5 (b). the effect of buffer layer thickness on open circuit voltage has been shown. Fig.5 (a, b) shows that open circuit voltage starts increasing with the increase in buffer layer thickness. The thickness of the absorber and buffer layers increases, the open circuit voltage increases, and the open circuit voltage finally reaches saturation.

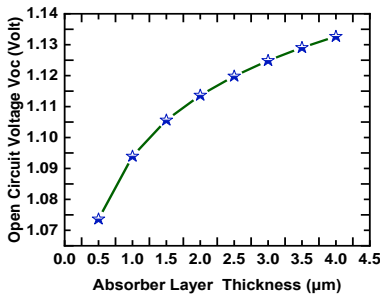


Fig. 5 (a)

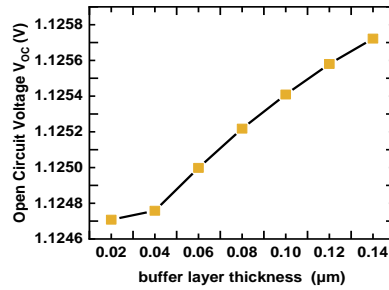


Fig. 5 (b)

Fig.5 (a,b): Effect of absorber layer and buffer layer thickness on open circuit voltage

**Effect of variation in the concentration of defect density**

Defect density is another key component that has a direct impact on solar cell performance metrics. The absorber layer generates the majority of the photo-generated current. Hence the increase in the defect density leads to an increase in carrier recombination which in turn affects the device efficiency.

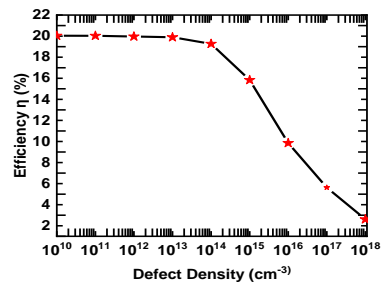
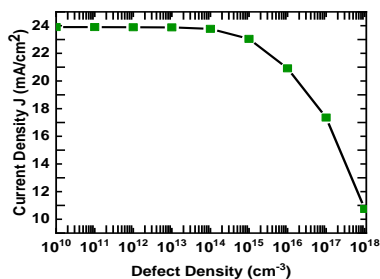
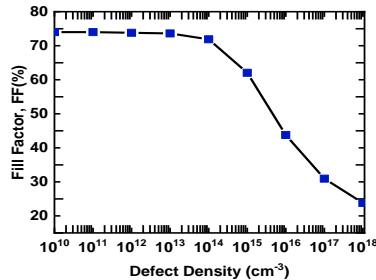
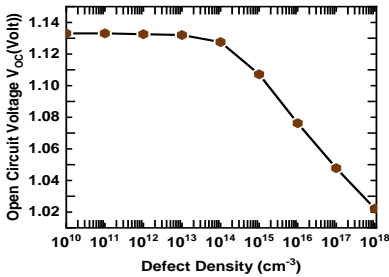


Fig. 6: Effect of defect density on photovoltaic parameter of Sb<sub>2</sub>S<sub>3</sub> solar cell

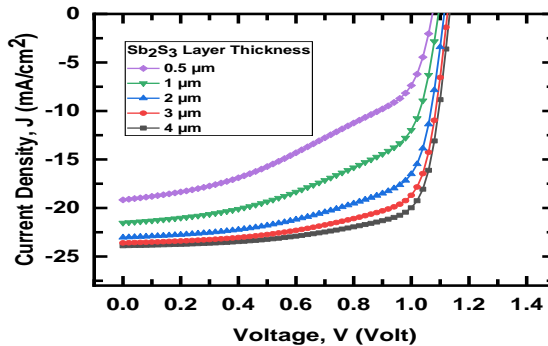
In this paper to study the effect of the defect density, it is varied in the range of 10<sup>10</sup> cm<sup>-3</sup> to 10<sup>18</sup>cm<sup>-3</sup>. The defect density is shown to have a



considerable impact on the solar cell's output parameter, as illustrated in Fig. 6. It is observed from Fig. 6 that with the increase in defect density above  $10^{14} \text{ cm}^{-3}$  and  $10^{15} \text{ cm}^{-3}$  for the  $\text{Sb}_2\text{S}_3$  thin film solar cell the efficiency starts decreasing. Chen et al, (2017) reported the values of defect density which are in good agreement with the values obtained during the simulation. The open circuit voltage and short circuit current for  $\text{Sb}_2\text{S}_3$  decreases with the high values of defect density as shown in Fig. 6. The fill factor value is also decreasing with an increase in the value of defect density. The increase in the defect density, carrier recombination rate increases which in turn decrease the carrier lifetime and diffusion length. So the overall performance of the device decreases (Li, Ni & Feng, 2019).

### ***I-V Characteristics Curves of $\text{Sb}_2\text{S}_3$ based solar cell***

Fig.7 depicts the simulated I-V characteristics of a solar cell based on  $\text{Sb}_2\text{S}_3$ . The four photovoltaic parameters of a  $\text{Sb}_2\text{S}_3$  based solar cell  $I_{sc}$ ,  $V_{oc}$ ,  $\eta$  and FF has been found from this I-V characteristics curve.

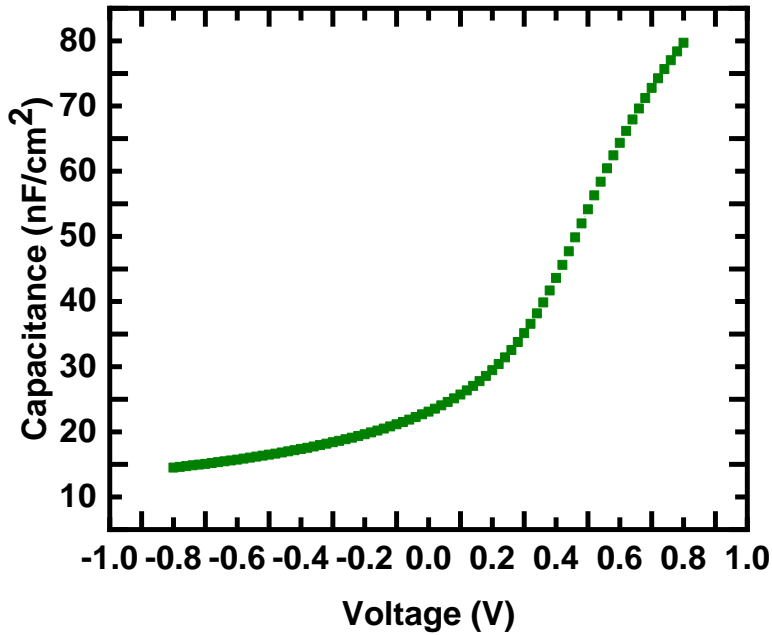


**Fig 7: I-V Characteristics Curve of  $\text{Sb}_2\text{S}_3$  based solar cell**

According to the diagram, solar cells containing ZnSe as a buffer layer have high conversion efficiency.

### ***Voltage and Junction Capacitance Characteristics Curves of $\text{Sb}_2\text{S}_3$ based solar cell***

An ideal Schottky diode's capacity increases with the bias voltage and is frequency independent. The relationship between capacitance  $C$  and polarization voltage  $V$  to the Schottky diode is shown in Fig.8. for several types of solar cell architectures where there is a jump capacity after  $V = 0.7 \text{ V}$ , with shift curves to higher order capacities containing the superior performance structures.

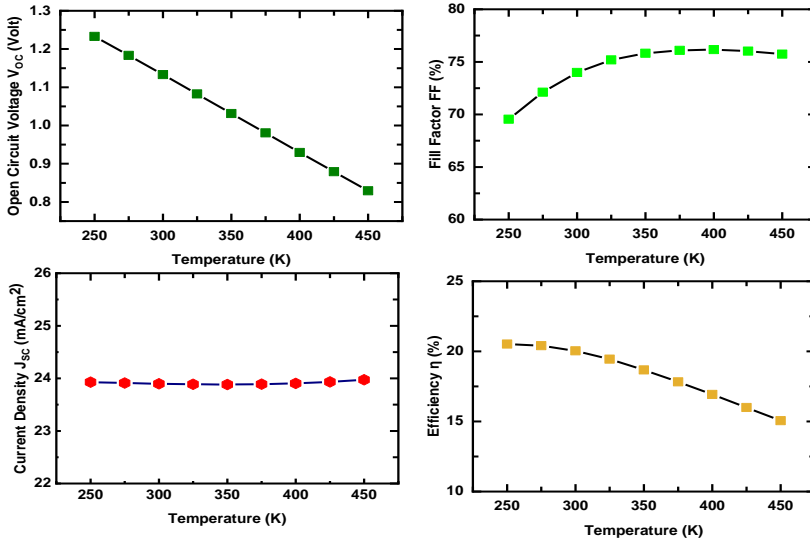


**Fig 8: Voltage vs Junction Capacitance Characteristics Curve of  $Sb_2S_3$  based solar cell**

***Effect of temperature on photovoltaic parameters of  $Sb_2S_3$  based solar cell***

As shown in Fig.9, the influence of operation temperature on the photovoltaic performance of the proposed Cd-free  $Sb_2S_3$  -based Solar Cell is explored when the buffer layer thickness is  $0.08 \mu m$  with an absorber layer thickness of  $4.0 \mu m$ . To achieve the stability of the Cd-free  $Sb_2S_3$  -based Solar Cell, the working temperature has been changed from 250K to 450K. Figure 9 illustrates the relationship between operating temperature and the total efficiency of  $ZnSe/Sb_2S_3$  solar cells. Efficiencies of 20.52% at temperature 250K have been fallen to 15.05% at temperature 450K which is shown in Fig.9. A solar cell device's testing temperature is usually  $300^\circ K$ , however the working temperature is higher than  $300^\circ K$  in real-world situations (Simya, Mahaboobatcha & Balachander, 2015). An increase in temperature modifies the density of intrinsic carriers in photoactive semiconductor materials to retain its balanced relationship with the absorption coefficient and shoots up the velocity of charged carriers that acts as a reason of reduction of the bond energy (kuddus et al. 2020). Because there are fewer free carriers in the cell due to the increase in the recombination rate of photo generated carriers, such as electrons and

holes, the performance of the cell as a whole decrease at higher temperatures.



**Fig 9: Effect of temperature on photovoltaic parameter**

## Conclusion

The performance of  $Sb_2S_3$  based solar cell has been investigated in this research work using SCAPS-1D. The thickness of the absorber in relation to the buffer layer has a significant impact on the efficiency and other photovoltaic parameters of the solar cell, according to the findings. The effect of variation in concentration of defect density has been investigated in this paper. In this simulation based work the Efficiency ( $\eta$ ), Fill Factor (FF), Open-circuit Voltage ( $V_{oc}$ ) and Short-circuit current ( $J_{sc}$ ) have been investigated. The optimized efficiency of  $Sb_2S_3/ZnSe/i-ZnO/ZnO:Al$  solar cell to 20.03% with  $V_{oc}$  of 1.13V,  $J_{sc}$  of 23.89(mA/cm<sup>2</sup>), FF of 73.98%, respectively. The researchers will be able to enhance better efficiency of  $Sb_2S_3$  based solar cell which is based on a simulation analysis and optimized parameters.

## Acknowledgements

We thankfully acknowledge to Dr. Marc Burgelman of the University of Gent in Belgium who has generously provided the SCAPS simulation program.

## References

- AZZOUZI, G. (2014) Study of silicon solar cells performances using the impurity photovoltaic effect (Doctoral dissertation).
- Basak, A. & Singh, U. P. (2021) ‘Numerical modelling and analysis of earth abundant  $\text{Sb}_2\text{S}_3$  and  $\text{Sb}_2\text{Se}_3$  based solar cells using SCAPS-1D’, *Solar Energy Materials and Solar Cells*, p. 230, available at: <https://doi.org/10.1016/j.solmat.2021.111184>
- Berg, D. M., Djemour, R., Gütay, L., Zoppi, G., Siebentritt, S. & Dale, P. J. (2012) ‘Thin film solar cells based on the ternary compound  $\text{Cu}_2\text{SnS}_3$ ’, *Thin Solid Films*, vol.520, issue 19, pp. 6291–6294, available at: <https://doi.org/10.1016/j.tsf.2012.05.085>
- Chelvanathan, P., Hossain, M. I. & Amin, N. (2010) ‘Performance analysis of copper-indium-gallium-diselenide (CIGS) solar cells with various buffer layers by SCAPS’, in *Current Applied Physics*. available at: <https://doi.org/10.1016/j.cap.2010.02.018>
- Chen, C., Bobela, C. David, Yang, Y., Lu, S., Zeng, K., Ge, C., Yang, B., Gao, L., Zhao, Y., Beard, C. Matthew & Tang, J. (2017) ‘Characterization of basic physical properties of  $\text{Sb}_2\text{Se}_3$  and its relevance for photovoltaics’, *Frontiers of Optoelectronics*, vol.10, Issue1, pp. 18–30, available at: <https://doi.org/10.1007/s12200-017-0702-z>
- Chirilă, A., Buecheler, S., Pianezzi, F., Bloesch, P., Gretener, C., Uhl, R. Alexander, Fella, C., Kranz, L., Perrenoud, J., Seyrling, S., Verma, R., Nishiwaki, S., Romanyuk, E. Yaroslav, Bilger, G., Tiwari, N. Ayodhya (2011) ‘Highly efficient  $\text{Cu}(\text{In,Ga})\text{Se}_2$  solar cells grown on flexible polymer films’, *Nature Materials*, vol.10 issue11, pp. 857–861, available at: <https://doi.org/10.1038/nmat3122>
- Jackson, P., Wuerz, R., Hariskos, D., Lotter, E., Witte, W. & Powalla, M. (2016) ‘Effects of heavy alkali elements in  $\text{Cu}(\text{In,Ga})\text{Se}_2$  solar cells with efficiencies up to 22.6%’, *Physica Status Solidi - Rapid Research Letters*, vol.10, issue 8, pp. 583–586, available at: <https://doi.org/10.1002/pssr.201600199>
- Jin, X., Zhang, L., Jiang, G., Liu, W. & Zhu, C. (2017) ‘High open-circuit voltage of ternary  $\text{Cu}_2\text{GeS}_3$  thin film solar cells from combustion synthesized Cu-Ge alloy’, *Solar Energy Materials and Solar Cells*, vol.160, pp. 319–327, available at: <https://doi.org/10.1016/j.solmat.2016.11.001>

Kuddus, A., Rahman, M. F., Hossain, J. & Ismail, A. B. M. (2020) 'Enhancement of the performance of CdS/CdTe heterojunction solar cell using TiO<sub>2</sub>/ZnO bi-layer ARC and V<sub>2</sub>O<sub>5</sub> BSF layers: A simulation approach', *The European Physical Journal Applied Physics*, vol. 92, issue 2, p.20901.

Li, Z. Q., Ni, M. & Feng, X. D. (2019) 'Simulation of the Sb<sub>2</sub>Se<sub>3</sub> solar cell with a hole transport layer', *Materials Research Express*, vol.7, no.1, available at: <https://doi.org/10.1088/2053-1591/ab5fa7>

Lindahl, J., Zimmermann, U., Szaniawski, P., Törndahl, T., Hultqvist, A., Salomé, P., Platzer-Björkman, C. & Edoff, M. (2013) 'Inline Cu(In,Ga)Se<sub>2</sub> co-evaporation for high-efficiency solar cells and modules', *IEEE Journal of Photovoltaics*, vol.3, issue 3, pp. 1100–1105, available at: <https://doi.org/10.1109/JPHOTOV.2013.2256232>

Liu, X., Xiao, X., Yang, Y., Xue, D., Li, D., Chen, C., Lu, S., Gao, L., He, Y., Beard, M. C., Wang, G., Chen, S. & Tang, J. (2017) 'Enhanced Sb<sub>2</sub>Se<sub>3</sub> solar cell performance through theory-guided defect control', *Progress in Photovoltaics: Research and Applications*, vol.25, issue.10, pp. 861–870, available at: <https://doi.org/10.1002/pip.2900>

Mandadapu, U., Vedanayakam, V. & Thyagarajan, K. (2017) 'Simulation and Analysis of Lead based Perovskite Solar Cell using SCAPS-1D', *Indian Journal of Science and Technology*, vol.10, issue 1, pp. 1–8, available at: <https://doi.org/10.17485/ijst/2017/v11i10/110721>

Moon S-J, Itzhaik Y, Yum J-H, Zakeeruddin S M, Hodes G & Grätzel M, (2010) 'Sb<sub>2</sub>S<sub>3</sub>-Based mesoscopic solar cell using an organic hole conductor', *Journal of Physical Chemistry Letters*, vol.1, issue10, pp. 1524–1527, available at: <https://doi.org/10.1021/jz100308q>

Movla, H. (2014) 'Optimization of the CIGS based thin film solar cells: Numerical simulation and analysis', *Optik*, vol.125, issue 1, pp. 67–70, available at: <https://doi.org/10.1016/j.ijleo.2013.06.034>

Nair, P. K., Garcia-Angelmo, A. R. & Nair, M. T. S. (2016) 'Cubic and orthorhombic SnS thin-film absorbers for tin sulfide solar cells', *Physica Status Solidi (A) Applications and Materials Science*, vol.213, issue 1, pp. 170–177, available at: <https://doi.org/10.1002/pssa.201532426>

Repins, I., Contreras, M. A., Egaas, B., DeHart, C., Scharf, J., Perkins, L. C., To, B. & Noufi, R., (2008) '19.9%-efficient ZnO/CdS/CuInGaSe<sub>2</sub> solar cell with 81.2% fill factor', *Progress in Photovoltaics: Research and Applications*, vol.16, issue. 3, pp. 235–239, available at: <https://doi.org/10.1002/pip.822>

Simya, O. K., Mahaboobbatcha, A. & Balachander, K. (2015) ‘A comparative study on the performance of Kesterite based thin film solar cells using SCAPS simulation program’, *Superlattices and Microstructures*, vol. 82, pp. 248–261, available at: <https://doi.org/10.1016/j.spmi.2015.02.020>

Sunny, A., Rahman, S., Khatun, M. M. & Ahmed, S. R. A. (2021) ‘Numerical study of high performance HTL-free CH<sub>3</sub>NH<sub>3</sub>SnI<sub>3</sub>-based perovskite solar cell by SCAPS-1D’, *AIP Advances*, vol.11, issue no.6, available at: <https://doi.org/10.1063/5.0049646>

Xue, D., Liu, S., Dai, C. Chen, S., He, C., Zhao, Lu., Hu, J. & Wan, L. (2017) ‘GeSe thin-film solar cells fabricated by self-regulated rapid thermal sublimation’, *Journal of the American Chemical Society*, vol.139, issue 2, pp. 958–965, available at: <https://doi.org/10.1021/jacs.6b11705>

# Remittance Inflow to Bangladesh: Post Covid-19 Strategies

B. M. Sajjad Hossain<sup>1</sup> and Abdur Rahman<sup>2</sup>

**Abstract:** Bangladesh is one of the top renowned workforce exporter countries in the world. Since it has a vast population, it has been sending manpower to the rest of the world, especially in the middle-east nations since 1976. The migrated laborers have been sending a large share of financial support called ‘remittance’ to Bangladesh, which have a direct and indirect impact on its socio-economic development over the decades. In recent years, the migrated laborers and their dependents living in their home countries have been in a socially vulnerable and economically difficult situation due to the critical impacts of Covid-19 since the virus was found in China by the year-end of 2019. The migrant workers face difficulties during the pandemic, such as unemployment, underemployment, isolation, hunger, discrimination, mental pressure, etc. Nonetheless, the dependent family members in their home countries are facing financial crises due to the limited or reduced cash flow from abroad. As a nation, Bangladesh is also observing a reduced amount of remittance flow during this period which is considered a great external source of financial inflow. In this research, all the data had been collected and analyzed from secondary sources. This paper attempted to present the real scenario and suggest possible post-Covid-19 strategies to have a continuous remittance flow toward Bangladesh.

**Keywords:** Bangladesh economy, manpower export, remittance inflow, pandemic economy, post-Covid-19 strategies in Bangladesh

## Introduction

Generally, remittance means a transfer of money by a foreign worker to his or her home country. ‘Remittance-Man’ is the historical use of this word in today’s ‘remittance’ (Colombo, 2006). It was coined to mean the person who would receive financial support from his friends or family for living as an emigrant, but in modern use; it is totally the opposite of that concept.

Remittances are the transfer of money by migrant workers back to his/her family and friends staying in another country. Remittances facilitate economic growth all across the world. Money sent home by migrants constitutes the most significant financial inflow to many developing countries, exceeding international aid (Karp, 2008). The global remittance flow is USD \$719 billion in 2019 and a total of \$548 billion (76.22 percent) was account for low and middle-income countries (WB, 2021).

---

<sup>1</sup> PhD, Assistant Professor, Department of Social Science, American International University- Bangladesh, Dhaka, Bangladesh. Email: bmsajjad@aiub.edu

<sup>2</sup> PhD, Professor, Department of Business Administration, Prime University, Dhaka, Bangladesh. Email: drahman1963@gmail.com

Remittance is any form of money transfer or payment from a migrant worker's working country to their home country. Usually, the currencies and the banks are different; hence, while remitting, the sender need to look for the best currency exchange rate and time taken for the transfer.

Remittances contribute not only to nation-building but also to the livelihoods of oppressed people worldwide. Moreover, remittance transfers can also promote access to financial services for the sender and recipient, raising financial and social inclusion. Remittances have become the medium for the relationship between two or more nations and created more economic dependency on the global economy.

International migration of labor has become an integral part of the global economy. Almost all countries are involved in the migration process as labor-sending, receiving, or transit countries. The migrant flow has a positive relation with remittances inflow too. Global figures show that official remittances have increased from less than US\$ 2 billion in 1970 to US\$ 70 billion in 1995, which does not include informal transfers (ILO, 2000).

### **Literature Review**

Between the 18<sup>th</sup> and 19<sup>th</sup> centuries, the development impact had been observed positively in the case of economic and social sectors for both receiving and sending countries as well as migration which had more boosted after WWII. Besides, the remittances made macro-level changes, especially in the sending countries, and the amount of the flow of migrant remittances from sending to receiving countries was continuously growing (Siddiqui, 2004). Global figures state that official remittances have increased from less than US\$ 2 billion in 1970 to US\$ 80 billion in 2000 (ILO, 2002). Nonetheless, about sixty percent of the total global remittance flow is toward developing nations (Sorensen, 2004).

As Bangladesh is a huge labor surplus country, it belongs to the supply side of the global labor market. About 2,50,000 people every year from 1995 to 2003 migrated for overseas employment. The flow of migrant workers is associated with the growing flow of remittance to Bangladesh. In 2002, it accounted for 2% of the global remittance transfer and 12% of the official remittance to South Asia (Orozco, 2003 & WB, 2002). Since the late 1990s, the Governments of Bangladesh, realizing the importance of remittance to the economy, have undertaken different macro-economic reforms to encourage the official flow of remittance and created 'Expatriates' Welfare and Overseas Employment (EWOE)" to ensure efficient management and development of this sector rapidly (Siddiqui, 2004).

Remittances reached up to 35 percent of total export earnings and became the single largest source of foreign currency earner for Bangladesh from



1978 to 1998. This helped to make payment for the import of capital goods and raw materials for industrial development. In the year 1998-99, 22 percent of the official import bill was financed by remittances (Afsar et. al, 2000; Murshed, 2000; Khan, 2003). It continues to grow year by year (Habib, et. al. 2021; Hossain & Hossain, 2014; Hossain, 2015).

The amount of remittance flows to developing countries has already surpassed that of official resource inflows. Since 1999, workers' remittances have been the second-largest resource flowing into developing countries after foreign direct investment (Aggarwal, 2006).

International labor migration has attracted attention in the discussions of reasons for increasing international trade in services and demographic shifts observable in many parts of the world. The roots of cross-border labor migration are related to, among other factors, divergences in economic performance between countries and regions, uneven technological change, and the integration of markets and societies (IMF, 2009).

Adams and Page (2005) and the IMF's World Economic Outlook (2005) attempted to capture the impact that remittances have on poverty due to the increases in per-capita income, and the changes they trigger in income inequality. The results suggest that remittances tend to reduce poverty to a larger extent in Latin America than elsewhere in the developing world, partly because they lead to less income inequality, while the opposite is observed for other regions.

López et al. (2008) discussed the possibility that when remittance flows are huge relative to the size of the receiving economies, they may also bring the undesired consequence of a loss of external competitiveness derived from an appreciation of the real exchange rate. The mechanism would operate through the increased consumption levels of recipients, which would raise the relative prices of non-tradable goods and services (for which competition is likely to be somewhat limited) relative to those of their tradable counterparts. Thus a few additional macroeconomic effects may have resulted from this exchange rate appreciation associated with remittance flows. It may include (i) adverse effects on the tradable sector of the economy; (ii) widening of the current account deficit; and (iii) weaker monetary control, inflationary pressures, and sectoral misallocation of investment, etc.

Now it is the age of globalization, and has led to widening disparities in employment opportunities, incomes, living standards, and human security across the globe very clearly and equally (ILO, 2004; Wickramasekara, 2006). Nonetheless, Bangladesh is also playing a vital role in the international labor market as a supplier.

Karim et al. (2020) stated that migrant workers play a significant role in the economy of Bangladesh, pumping approximately USD 15 billion into the economy that, directly contributes to the socio-economic development of Bangladesh every year. So far, no studies have been conducted to clarify the scenario of workers export and remittance earnings during the covid-19 pandemic or forecast for the post-pandemic period/s. However, considering this research gap, it tried to discover the covid-19's impacts on migrant workers from Bangladesh and related issues. It suggested further policy actions/ strategies to overcome pandemic challenges in the shorter possible period.

### **Objectives of the Study**

The remittance flow in Bangladesh was positive and increased over the decades. After a recent incident, a negative trend of remittance flow had been observed due to the Covid-19 pandemic. This is now a concerning issue for academic experts, economists as well as policymakers. The objective of this paper is to present the actual scenario of remittance inflow during the Covid-19 pandemic period in Bangladesh with some policy-level advice to overcome the Post-Covid-19 challenges to boost its economy as it was activated for the last few decades. A few other specific objectives of this study are –

- To investigate the status of Bangladesh in terms of remittance earning scenario,
- To discover the global picture of remittance inflow and outflow,
- To identify the concern issues associated due to Covid-19 pandemic in Bangladesh, and
- To have a proposal on how to overcome the Post-Covid-19 challenges to get more remittance inflow towards Bangladesh.

### **Methodology**

The international labor market is a complex research arena where several countries' rules, policies, and regulations have an impact on every step. In this research, all the data has been collected from secondary sources, and a simple percentage technique was used to analyze them. A few government agencies in Bangladesh and some renowned international organizations are involved and monitoring intentional labor migration, monetary transactions, and related issues as such World Bank, International Monetary Fund, United Nations, and International Labor Organization, etc. Reports published by those organizations, newspaper articles, books, policy papers, working papers, journal articles, etc were selected as the data sources for this study. A simple table and graphs have been prepared using the MS Excel Spreadsheet program to present the data and ease

understanding of the scenario. This paper considered March 2020 to December 2021 as the Covid-19 period when the spreading coronavirus was huge and locked-down strategies by government in many nations was common, and before and after the period has been considered as pre-covid-19 and post-covid-19 period respectively. It concluded with a few policy-level proposals.

## Discussion

Many developing countries are highly dependent on remittance support. It played a vital role in the growth and development of many developing nations as the maximum share of the total remittance had been sent to those labor exporter countries. Ten percent of the population around the globe is directly involved with remittances (IFAD, 2007; UN, 2019).

In the year 2000, remittance flow was over the US \$72 billion and the developing countries represent a large proportion of world financial flows and the amount was substantially more than global official development assistance, more than capital market flows and more than half of foreign direct investment flows to these countries (Hossain, 2015). The importance of remittance for the developing world is evident due to the fact that it was estimated that 61 percent of global remittances were towards developing countries in the year 2000. Lower middle-income countries receive the largest amounts, but remittances may constitute a much higher share of the total international capital flow to low-income countries (INAFI, 2006).

In the year 1995, the share of the global remittances sent to developing nations was only 57 percent but ten years later in the year 2005; it had risen to 72 percent and again after ten years it increased to 82 percent in 2016 (see Table 01).

**Table-01: Remittances sent to developing countries**

<b>Year</b>	<b>Amount (in billions)</b>	<b>Share in total remittance</b>
1980	US\$ 47	42 percent
1990	US\$ 49	50 percent
1995	US\$ 57	57 percent
2000	US\$ 102	61 percent
2005	US\$ 167	72 percent
2010	US\$ 321	75 percent
2013	US\$ 404	79 percent
2016	US\$ 516	82 percent

Source: McKenzie, 2014

India, China, and Mexico, those three countries are the top remittance earner in the world (see Table 02). Bangladesh is listed in the eighth position. The United States of America is the largest amount of remittances providing nation, with more than \$31 billion of remittances traveling across the globe every year since 2010.

**Table-02: World Top remittance recipients in 2020  
(in billion US dollars)**

Sl	Country	Amount
1	India	83.1
2	China	59.5
3	Mexico	42.9
4	Philippines	34.9
5	Egypt	29.6
6	Pakistan	26.1
7	France	24.5
8	Bangladesh	21.8
9	Germany	17.9
10	Nigeria	17.2

Source: World Bank, 2021

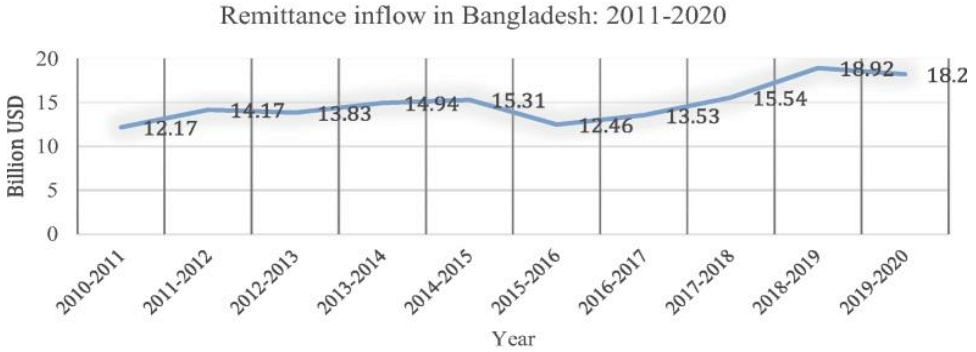
As a share of GDP for FY2019-20, the top five recipients would be smaller economies, including Tonga (40%), Haiti (38%), Lebanon (36%), South Sudan (35), and Tajikistan (26%) (WB, 2020).

#### **A. Remittance inflow towards Bangladesh (before Covid-19 pandemic)**

Bangladesh has been sending migrant workers officially since the year 1972 on a very small scale and it boosted up after 1976. Bangladesh Manpower, Export, and Training (BMET, 2021) recorded that the number of migrant labors had increased rapidly after 1989, when more than 0.1 million people were sent from Bangladesh for the first time in its history.

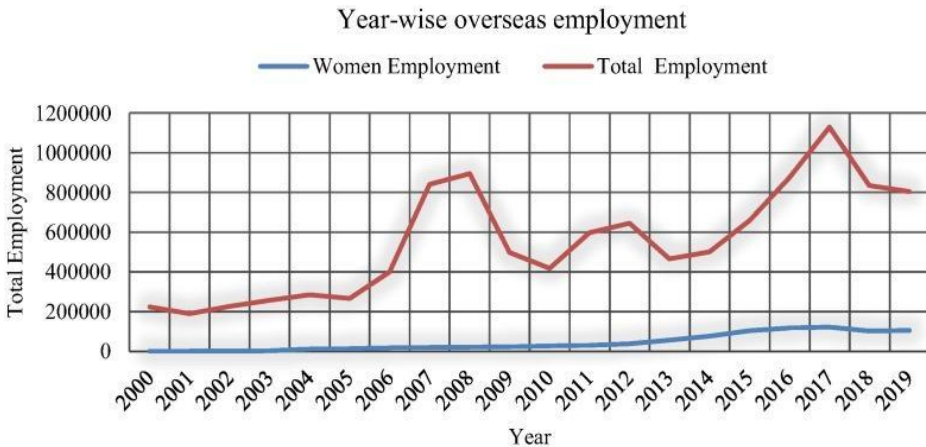
Later on, it increased between 0.2 to 0.3 million from the year 1991 to 2005. Then the number reached 0.8 and 0.9 million by the years 2007 and 2008 respectively. On average, the number of migrant labors from Bangladesh was about 0.6 million per year between 2008 and 2016. Bangladesh made a record by sending huge number of migrant labors in 2017, which was over a million in number. Then in next two years, in 2018 and 2019, more than 0.7 million labors were sent each year from this country. That means, about one hundred Bangladeshi labors were going abroad every hour as remittance-fighter.

However, over the years, the remittance inflow in Bangladesh continued to increase as evident the figure 01 that shows the remittance inflow in the last 10 years (2011–2020) in Bangladesh.



**Figure-01: Remittance inflow in Bangladesh (2011-2020)**  
**Source: BMET, 2020**

Asian Development Bank has recorded that the outflow of migrant workers from Bangladesh has increased by about 22 percent annually (ADB, 2016). The last twenty year data shows that the trend of migrant workers going abroad is increasing, except for a few years (see figure 02), and the overall growth rate is found to be positive.



**Figure-02: Overseas employment (2000–2019) from Bangladesh**  
**Source: BMET, 2020**

Figure 02 represents that a large number of female workers have started to move abroad as migrant labors and their number is increasing year by year as well. So, the graphs prove that the relationship between remittance inflow and migrant labor outflow is positively correlated.

## **B. Impact of Covid-19 on remittance flow towards Bangladesh (during the pandemic)**

Corona-virus disease (Covid-19) is an infectious disease caused by the SARS-CoV-2 virus, found in Wuhan city, Hubei Province, China, in December 2019 and spread within a week in China and in the whole world in a few months. The world observed a restricted mode of human movement in China by December 2019 and implemented it across the globe after January 2020. Hence, as one of the top manpower supplier counties in the world, Bangladesh has undergone a tremendous pressure on its socioeconomic drivers as such remittance earnings and labor migration process. It is recorded that the labor migration rate in only one year (2020) had come down to 70 percent lower compared to the average numbers of earlier periods. Besides, more than 0.5 million migrated labor came back to Bangladesh after facing difficulties maintaining livelihoods abroad (ILO, 2021).

Many migrant labors were coming back after facing difficulties abroad and many of them did not get back to their workplace due to visa problems or not being allowed to enter host countries that imposed shutdowns or travel bans (RMMRU, 2020). The overseas job market was almost locked during the pandemic for migrant workers of many nations including Bangladesh. Low paid labors such as taxi drivers, restaurant workers, day laborers, and construction workers lose their jobs and could not send any financial assistance in their home countries.

A significant number of migrant workers were sent back to Bangladesh, and many were in constant fear of being sent back due to the impacts of Covid-19 in their host countries. Covid-19 has dealt a heavy blow to all migrant workers' job prospects and to Bangladesh's overseas job market and consequently reduced the remittance inflow during the pandemic period (Palma, 2020).

All the months of 2020, it was about locked down and shut down games. People had to stack inside their homes. All types of social and economic activities were stopped except only the emergency services. The situation started to improve after October 2019.

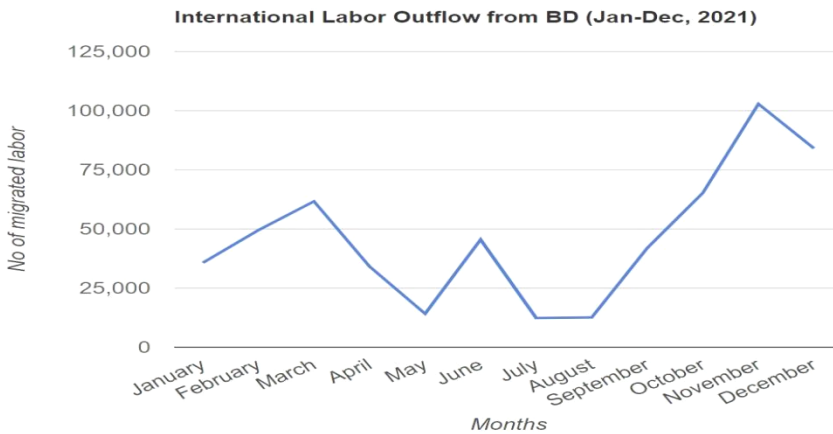
**Table-03: The migrant labor flow from Bangladesh in 2021**

<b>Month</b>	<b>No. of migrant labor</b>
January	35,732
February	49,510
March	61,653
April	34,145
May	14,200
June	45,567

Month	No. of migrant labor
July	12,380
August	12,604
September	42,000
October	65,233
November	1,02,863
December	84,084*
<b>Total</b>	<b>4,57,108</b>

(\*predicted data using simple average methods of recent two periods)  
 Source: BMET, 2021

Table 03 states the migrant labor outflow from Bangladesh in the post-Covid-19 period in 2021. April, May, July, and August have observed that the number of labor outflow from Bangladesh was poor due to locked-down the implementation of those months. Otherwise, the rate of outflow sounded good, and rising trends after August 2021 (figure 03). Proper policy and management support are highly required to overcome this Covid-19-related global crisis.



**Figure 03: International labor outflow from Bangladesh (January-December, 2021)**  
 Source: BMET, 2021

Figure 03 clearly states that Covid-19 intensifies numerous socio-economic crises such as joblessness that create a lower labor migration process. It made multidimensional trouble for the lower-class and middle-class populations. Many people had finished their reserve funds on their own or by family members for daily life consumption purposes. On the broader scene, a nation observed the shrinking of the country’s overall remittance inflow. In this situation, the most urgent and essential need is to give financial security and social safety to the workers abroad and those

who have returned to Bangladesh. The labor outflow is on a rising trend after August 2021.

### **C. Post-Covid-19 challenges of remittance inflow towards Bangladesh**

As the Covid-19 pandemic and economic crisis continue to spread, the amount of money that migrant workers send home is projected to decline by 14 percent during the pandemic periods (2020-onwards) compared to the pre-Covid-19 levels in 2018-19 (World Bank, 2020). It is also projected that remittance flows to low and middle-income countries (LMICs) might decline by 7 percent. In this situation, the migrant-host countries are facing weak economic growth and employment levels, weak oil prices; and depreciation of the currencies of remittance-source countries against the US dollar.

As a result, remittances to supplier countries are to be declined. According to World Bank (2020), remittances to South Asia may decline by around 4 percent. In Pakistan and Bangladesh, the impact of the global economic slowdown has been somewhat countered by the diversion of remittances from informal to formal channels due to the difficulty of carrying money by hand under travel restrictions. Pakistan also introduced a tax incentive whereby withholding tax was exempted from July 1, 2020, on cash withdrawals or the issuance of banking instruments/transfers from a domestic bank account. Bangladesh registered a significant increase in remittance inflows after July 2021. To send migrant laborers to host countries is difficult, as a return to get remittance as the pre-Covid-19 flow becomes very perplexing.

### **D. Post-Covid-19 strategies for Bangladesh to overcome crisis on remittance flow**

A lot of issues are related to the international labor migration process. A government is always a key role player with respect to making policy and controlling the agencies related to the migration process and other national and international parties.

Providing small financial support the needy worker may be a short-term strategy to overcome hardships during the pandemic still for a long-run solution, it is needed to design a comprehensive plan. These strategies can mitigate the impacts of Covid-19 at present and address migration-related problems in the future.

The governments of the migrant workers' host countries have undertaken various initiatives to reduce the effects of Covid-19 on migrant workers. In spite of those initiatives, migrant workers are still at risk and vulnerable



due to the cascading effects of Covid-19 in the socioeconomic systems of the host countries.

To minimize the risk and vulnerability of the migrant workers the following strategies can be taken:

- a) **Flight support:** Make a list of the migrant workers those who could not return to the host countries and arrange their rapid transfer by the government until the world returns to normalcy. Bangladesh stopped sending workers abroad in late March 2019, with the closure of international flights, following the detection of the first Covid-19 positive cases in the country (Mahmud, 2020). That is why it is essential to find out the remaining passengers and support them on a one to one basis for easy flying.
- b) **Document waive:** In the case of a remittance transaction, both the receiver and the sender require proper documents as such passports, national identification cards, licenses, etc. Developing countries like Bangladesh are still lack a 100 percent issuance of those proofs. Habib et al. (2021) coined that a large number of remittance has been transferred globally via illegal channel for many reasons. So, to solve this problem, providing some extra monetary incentives on inflow remittances and documents waiving that are required for sending or receiving money via proper channels may enhance the remittance flow via proper/legal channels.
- c) **Financial support:** The overseas workers who did not get back to host-countries during the pandemic and now living in Bangladesh require humanitarian support from government and non-government agencies involve them in income-generating activities (Chowdhury & Chakraborty, 2021). Short-term and long-term loans may be suitable for these workers to pursue income-generating activities, particularly agriculture, who could not get back to the host country and decided not to go there in the near future.
- d) **Technological upgradation:** ILO (2020) reported that although 164 million migrant workers of the 258 million international migrants worldwide contribute fully to the economies of their host and home countries, migrant workers are often excluded from social protection coverage. However, hosts and suppliers in both countries may have to maintain a proper database. For better support, as a supplier country, Bangladesh needs to update the database management system to trace and track all migrant workers for legal support anywhere in the world and prevent all types of illegal migration. Nonetheless, a holistic approach needs to develop to support a one-stop mode for the stacked migrant workers in Bangladesh.

- e) **Training and development programs:** Hossain and Hossain (2014) stated that 56 percent of migrant labor from Bangladesh is unskilled and semi-skilled. That is why a major portion of Bangladeshi labors are less-paid off in the host countries. After the pandemic periods, options will be open for more labor access opportunities while the economic cycle runs in full swing. For this reason, Bangladesh needs to send trained/skilled manpower to host countries. More training center needs to be setup up immediately to upgrade the level of labor, both technical and language skills.
- f) **Support service staff's enchantment:** Bangladeshi migrant workers used to face problems in host countries, which has increased greatly during pandemics. Migrated labors claimed that they did not get service from foreign high commissions (Palma, 2021). Diplomatic efforts and networks should be utilized more to secure the jobs, health, and social life of the Bangladeshi migrant workers in host countries. Concatenation needs not only to send skilled labor forces but also to send expert professionals to handle those laborers. In this regard, professional expert officers should be appointed in Bangladesh's foreign mission to deal with foreign countries as well as can address migrant workers' problems with care and empathy to solve them in a proper manner. So, before sending labor to a foreign/host country, support service staff as such officials for foreign missions must be sent very carefully by considering those issues.

## Conclusion

Remittances play a vital role in the development process of many countries. It has contributed to economic growth and the livelihoods of less prosperous people, except the poorest of the poor. Remittances to Bangladesh have been growing steadily over the last decade (BMET, 2021). Recognizing the economic importance, the government for years has had legislation, policies, and an institutional structure in place to facilitate the migration of its citizens (Hossain, 2015). Over the years, Bangladesh has observed that the absolute and the relative volumes of migrant workers and their remittances are increasing. They have shown a steady increase over the few decades. It can be counted as fast cash transfers from overseas without having a high cost to recipient countries.

The importance of foreign remittances in the economy of Bangladesh is widely recognized and requires little reiteration (CPD, 2008). The ready-made garment (RMG) sector, non-agriculture service sector, and remittances, those three have been identified as the critical factors for poverty alleviation in Bangladesh (Osmani, 2004).

For sustainable remittance flow in Bangladesh, there is only one way to continuously supply more labor in the international market. As part of the post-Covid-19 strategy, strong social and financial support for migrant workers at home and abroad is essential. Enhancing this sector requires more training in nursing, healthcare technology, hospitality, food, and beverage management must be initiated, especially for those workers who have returned during the pandemic.

Remittances have become the most powerful means to maintain relationships with migrants in their societies of origin (Beasley, 2011). People took migration decisions to change their destiny but it also contributes to their families and own country (Hossain & Hossain, 2014). Over the years, remittance has emerged as an important source of development in Bangladesh. Nevertheless, the volume of remittances earned in Bangladesh exceeded USD 6.5 billion in 2007, and it became three times higher by the year 2020, that had accounted for 21.75 billion. South Asian migrant laborers are the greatest victims of the economic effects of the recent pandemic (Budhathoki, 2020). For non-returning migrant laborers and their families in their home countries, agriculture may be the alternative option to generate employment as well as livelihood. The returning migrant workers who have experience from abroad may contribute local labor market.

As remittance receivers often have a higher propensity to own a bank account, remittances promote access to financial services for the sender and recipient, an essential aspect of leveraging remittances to promote economic development, even in remote areas. That means it has an indirect impact on society to have more financial inclusions and related services.

Attention is needed for those migrant workers who became illegal during the Covid-19 pandemic. They should be taken care of under proper supervision and surveillance. The government of Bangladesh must devise long-term security strategies for persons who work in other countries so that Bangladesh can sustain its foreign reserve and address the economic shock as well (Karim, et al. 2020). Unless sending more skilled labor, it may not possible to keep the market demand for Bangladeshi laborers as it is today and enjoy remittance inflow at an expected measure.

## References

Adams, R. & Page, J. (2005) 'Do international migration and remittances reduce poverty in developing countries?' *World Development*, vol. 33, pp. 1645–69.

Afsar, R., Yunus, M. & Islam, S. (2000) *Are migrants chasing after the golden deer: A study on cost benefit analysis of overseas*, Bangladesh Bank, Dhaka.

ADB (Asian Development Bank). (2016) *Overseas Employment of Bangladeshi Workers: Trends, Prospects, and Challenges*, ADB Briefs-16, accessed, 10 May 2020, [www.adb.org/publications/overseas-employment-bangladeshi-workers](http://www.adb.org/publications/overseas-employment-bangladeshi-workers)

Aggarwal, R. (2006) *Do Workers' Remittances Promote Financial Development*, World Bank, Washington DC.

Beasley, A. (2011) 'Impact of remittance on macroeconomic performance: bangladesh perspective', *American Journal of Law and Public Policy*, vol. 1, no. 2.

BMET (Bureau of Manpower, Employment and Training), (2020, 2021) *Overseas Employment and Remittance Report*, accessed, 11 November 2021, <http://www.old.bmet.gov.bd/BMET/statisticaldataaction>

Budhathoki, A. (2020) *Middle East Autocrats Targets South Asian Worker*, accessed, 12 December 2021, <https://foreignpolicy.com/2020/04/23/middle-east-autocrats-south-asian-workers-nepal-qatar-coronavirus>

CPD (Centre for Policy Dialogue), (2008) *The Micro Level Impact of Foreign Remittances on Incomes in Bangladesh : A Measurement Approach Using the Propensity Score*, CPD, Dhaka.

Chowdhury, M. B. & Chakraborty, M. (2021) 'The impact of COVID-19 on the migrant workers and remittances flow to Bangladesh', *South Asian Survey*, vol. 28, no. 1, pp. 38–56. <https://doi.org/10.1177/0971523121995365>

Colombo, J. R. (2006) *Remittance Man*, viewed, 10 June 2021, <https://www.thecanadianencyclopedia.ca/en/article/remittance-man>

Habib, A. H., Hossain, B., M. S. & Molla, K. (2021) 'Upholding economic development through remittance: a case study in Bangladesh', *International Research Journal of Education and Technology*, vol. 03 no. 04, pp. 26-31.

Hossain, B. M. S. & Hossain, M. D. (2014) 'Role of remittance in the economic development of Bangladesh', *Prime University Journal*, vol. 08, no. 02.

Hossain, B. M. S. (2015) 'Remittance and development: a sensitivity analysis on Bangladesh', *Manarat International University Studies*, vol. 5, no. 1.

Khan, I. K. (2002) 'Migration of workers from Bangladesh: Opportunities, challenges and policies, employment and labour market dynamics', *Review of Bangladesh's Development*, CPD & UPL, Dhaka.

Mahmud, J. (2021) 'Migration: Labour migration in slow lane', viewed, 10 September 2021, <https://www.thedailystar.net/news/bangladesh/news/labour-migration-slow-lane-2171886>

McKenzie, D. (2014) *Development Research Group Paper*, World Bank, Washington DC.

Murshed, K. A. S., Iqbal, K. & Ahmed, M. (2000) 'A study on remittance inflows and utilization', *IOM*, Dhaka.

International Fund for Agricultural Development (IFAD), (2007) *Sending Money Home: Worldwide Remittance Flows to Developing and Transition Countries*, IFAD, Rome.

ILO (International Labor Organization), (2000) *Annual Report-2000*, ILO, Geneva.

ILO (International Labor Organization). (2002) *Migrant Workers, Labour Education 2002/4, No. 129, Geneva. International Organization for Migration (IOM)-2000*, World Migration Report, ILO, Geneva.

ILO (International Labor Organization). (2004). *Towards a fair deal for migrant workers in the global economy*, Report VI, ILO Conference, Session-92, ILO, Geneva.

ILO (International Labor Organization), (2021) *5 lakh migrant workers return Bangladesh amid Covid pandemic*, viewed, 11 December 2021, <https://apmigration.ilo.org/news/5-lakh-migrant-workers-return-bangladesh-amid-Covid-pandemic>

IMF (International Monetary Fund), (2005) *World Economic Outlook, IMF*, Washington DC.

IMF (International Monetary Fund), (2009) *International Transactions in Remittances: Guide for Compilers and Users*, IMF, Washington DC.

INAFI (International Network of Alternative Financial Institutions), (2006) 'Harnessing remittances for economic development of Bangladesh', (Paper presented with the request of INAFI Asia and INAFI Philippines at INAFI Asia International Conference on Migration and Development), 23-27 May, 2006, no. 1, Development Academy of the Philippines, Tagaytay City.

Karim, M. R., Islam, M. T. & Talukder, B. (2020) 'Covid-19's impacts on migrant workers from Bangladesh: In search of policy intervention'. *World Development*, vol. 136, no. 105123, <https://doi.org/10.1016/j.worlddev.2020.105123>

Karp, J. (2008) *Top Countries Receiving Remittance Money*, viewed, 11 December 2021, [https://ezinearticles.com/expert/Jason\\_Karp/224112](https://ezinearticles.com/expert/Jason_Karp/224112)

López, J. H., Molina, L. & Bussolo, M. (2008) *Remittances, the Real Exchange Rate, and the Dutch Disease Phenomenon, Chapter -7, Remittances and Development Lessons from Latin America*, World Bank, Washington DC.

Orozco, M. (2003) 'Workers' Remittance in an International Scope', *Working Paper commissioned by the Multilateral Investment Fund of the Inter*, American Development Bank, Washington DC.

Osmani, S. R. (2004) *The Impact of Globalisation on Poverty in Bangladesh*, ILO, Geneva & Dhaka.

Palma, P. (2020) 'Coronavirus pandemic: a big blow to overseas jobs', viewed, 14 April 2021, <https://www.thedailystar.net/frontpage/news/coronavirus-pandemic-big-blow-overseas-jobs-1889365>

Palma, P. (2021) 'Migration: Bangladeshi workers in Malaysia: pandemic puts them in trouble', viewed 12 August 2021, <https://www.thedailystar.net/nrb/migration/news/bangladeshi-workers-malaysia-pandemic-puts-them-trouble-2142456>

RMMRU. (Refugee and Migratory Movements Research Unit), (2020) *Protection of Migrants during Covid-19 Pandemic Situation Analysis of RMMRU and Tasks Ahead*, RMMRU, Dhaka.

Siddiqui, T. (2004) *Efficiency of Migrant Workers' Remittance: The Bangladesh Case*, Asian Development Bank, Manila.

Sorensen, N. N. (2004). 'The development dimension of migrant remittance; Danish institute for development studies', *IOM Working Paper*, no. 1.

UN (United Nations) (2019) 'Remittances matter: 8 facts you don't know about the money migrants send back home', viewed, 11 December 2021, <https://www.un.org/development/desa/en/news/population/remittances-matter.html>

Wickramasekara, P. (2006) 'Globalization, international labour migration and rights of migrant workers', ILO, Geneva, [http://www.ilo.org/public/english/protection/migrant/download/pws\\_new\\_paper.pdf](http://www.ilo.org/public/english/protection/migrant/download/pws_new_paper.pdf)

WB (World Bank) (2002) *World Development Indicators*, WB, Washington DC.

WB (World Bank) (2020) *World Development Data Bank*, WB, Washington DC.

WB (World Bank) (2021) *Migration and Development Brief-34*, World Bank, Washington DC.

## **Wanja in *Petals of Blood* and Hester Prynne in *The Scarlet Letter* as Symbols for Breaking Social Myths about Women**

**Mohammad Arshad Ali<sup>1</sup> and Md. Abdul Awal<sup>2</sup>**

**Abstract:** The article aims at understanding the social myths of women caused by religion, society and culture through an analysis of the two great fictional works of Ngugi wa Thiong'o and Nathaniel Hawthorne of two continents. It attempts to present women as the other in family and society and as passive, submissive and unresisting victims of domestic violence in Ngugi's *Petals of Blood* and Hawthorne's *The Scarlet Letter*. It displays the position of women by illustrating how Ngugi and Hawthorne pave the ways for breaking the social myths about women to promote the timid male-dominated women through the passage of gaining self-motivation against patriarchy. It investigates the resistance of various individuals such as Wanja and Hester Prynne to support women to be self-enthusiastic rather than to be restricted and dominated under the system of patriarchy. This qualitative research has used a number of concurrent approaches and secondary sources to develop various aspects of the paper for the proper comprehension and exact interpretation of the feminist and comparatist standpoints. The study intends to employ a qualitative methodology for textual analysis from evaluative and analytical angles to clarify the social myths about women. Thus, the focal point of this article is to show how the two authors break myths about women by the actions of the protagonists of the mentioned works under scrutiny promoting egalitarianism.

**Keywords:** Domination, discrimination, myth busting, patriarchy and representation.

### **Introduction**

The subject of the paper is to display the standing of women in Ngugi wa Thiong'o's *Petals of Blood* and Nathaniel Hawthorne's *The Scarlet Letter* by elucidating how these two myth busters promote the male-dominated women through the passage of gaining self-motivation against patriarchy "in which men dominate, oppress and exploit women" (Walby, 1990, p. 20). In this process, this study highlights the performances of women characters such as Wanja and Hester Prynne in the light of feminist philosophy. The discursive narratives on *Petals of Blood* and *The Scarlet Letter* offer an understanding of breaking myths about women in the backdrop of globalisation, neo-colonization, neo-imperialism, neo-Marxism, nuclear-politics, corporatization and objectification of women.

---

<sup>1</sup> PhD, Professor, Department of English, Prime University, Dhaka, Bangladesh.  
E-mail: arshadalimohammad54@gmail.com

<sup>2</sup> PhD, Associate Professor, Department of English, Prime University, Dhaka, Bangladesh.  
E-mail: awalnanny@yahoo.com

These two literary works echo cultural paradigms and outlooks of their respective eras concerning women, their positions, their roles and their expectations. Ngugi and Hawthorne have argued for equal rights for women as a way to overcome the barriers of the age-old patriarchal bias. Researchers have to go through other relevant literary works with a view to making a clear understanding of women's vulnerability. For example, Woolf (1929, p. 36) logically points out, "It is fatal for a woman to lay the least stress on any grievance; to plead even with justice any cause; in any way to speak consciously as a woman". *Petals of Blood* and *The Scarlet Letter* show that many injustices still need to be corrected, but equally compulsory is a down-to-earth, tolerant and compassionate view of fellow human beings. The two eminent writers have progressively become subtle comparatively in their retort to the male-dominated society. Despite their great contributions, women have been marginalised in family, society and state in the context of power, leadership and equality.

### **Research Problem**

Women are mothers, daughters, sisters and mistresses but they are not equal in a family. A woman shoulders a lot of work for her family minutely without demanding any wages but she is treated merely as a plaything and "an ideal of woman in her eternal essence is portrayed when in actual social life subjugation is woman's common lot" (King, 1980, p. 181) owing to the physical strength of male members of the family. Though women are addressed as honey, baby, darling, sweetheart, doll and so on through media and cultural representation, they are lowered down to the state of domestic animals in the society as Simon de Beauvoir proclaims, "He is the Subject, he is the Absolute—she is the other" (King, 1980, p.160). Men play the roles of guardians and policymakers in society but compel women to be obliged with the subjugated roles involving servitude. A man is the lord and master of the house while "she is a vessel in which all sorts of spirits and forces are coursing and flashing perpetually" (Woolf, 1929, p. 57). Though there have been significant advances for women in many parts of the world concerning health, education and employment over the past decades, it is still a matter of great regret that women in many parts of the world are suffering the stigma of the social myths about them. Besides, indications for breaking myths about women and their empowerment have emerged to the researchers from Ngugi's and Hawthorne's portrayal of women in *Petals of Blood* and *The Scarlet Letter* respectively.

### **Background of the Study**

Patriarchy assumes that a "woman was made for [a] man, yet she was higher, was also made for herself" (Wollstonecraft, 1792, p. 11). Women resist and challenge patriarchal injustice and outlook. They present their status in



literature and media in a proper manner by blurring the social myths about women ultimately to their real life. They are inspired by the roles played by women in the classics. Indian classics represent women protagonists with superimposed role types such as beautiful, curious, sensual, embodied, protective and so on. For example, Savitri, Surpanakha, Ahalya, Mandodari, Urmila, Draupadi, Lakshmi, Sita, Satyawati, Amba, Abhaya, Shakuntala, Menaka and so on. In Greek classics Pandora, Atalantam, Medea, Penelope, Eve, Lilith, Arachne, Ariadne, Danae, Daphne, Andromeda, Eurydice, Leto, Calypso, Circe, Antigone, Clytemnestra and so on are excellent portrayals in accomplishing their tasks. The women of Ngugi and Hawthorne “ensure that hymns” to make the patriarchal outlook changed” (Woolf, 1929, p. 9).

### **Objective of the Study**

The paper aims at promoting timid women to be self-motivated rather than to be restricted and dominated under the system of patriarchy through investigating the roles of various individuals such as Wanja and Hester. The study displays the common reasons for the comparison of these two characters tracing their self-confidence, self-determination and self-perception of emancipation from subjugation. It uncovers the truth that the oppression of women is laid beneath the structure of the society and points out how they are marginalised. Researchers attempt at making inactive women aware and empowered for the overall progress of society.

### **Theoretical Framework**

This study resorts to the feminist theories as core concepts to analyse *Petals of Blood* and *The Scarlet Letter*. As researchers emphasize feminist philosophy as the interdisciplinary analysis in the cultural presentation of female characters, the related knowledge offers to be useful for breaking the social myth about women. “Feminist critique necessarily spans the broad spectrum of classical, religious, literary, psychoanalytic, media and other myths that have chronicled women’s existence” (Sellers, 2001, p. 7). The study explores the background of women’s resistance in literature and media for denying the roles of servitude. The research utilizes in the discussion various kinds of actions, attitudes and ideas of the female protagonists of the mentioned books for “a set of basic individual rights” (Wagner, 2012, p. 18). The study analyses and evaluates Hester Prynne’s and Wanja’s resistance against patriarchal ideologies to achieve equal opportunities for them in every aspect of social life. The study presents how they subvert the norms of patriarchal domination by identifying their primary source of oppression. Accordingly, this study highlights the actions of the mentioned female characters by revisiting the fictional world of Ngugi and Hawthorne to challenge the male-dominated society. In drafting the paper, the authors have adopted the MLA 8th edition format as the referencing style.

## Literature Review

A large number of critics worldwide have studied both Ngugi Wa Thiong'o and Nathaniel Hawthorne keeping in view their comprehensions about women in literature and media. Anfal (2019) in his *Victimisation of Women in Ngugi's Petals of Blood* discusses the victimisation of women in neo-colonial Kenya and the patriarchal structure of African society. Roos (2002) in "Re-Historicizing the Conflicted Figure of Women in Ngugi's *Petals of Blood*" marks Ngugi's growing interest in strong women characters like Wanja who succeeds in areas where women literary figures traditionally do not. The article presents Wanja as a female figure facilitated extensively with agency and power and hope for African women. Alazzawi (2018) in "Feminist Perspective in Ngugi Wa Thiong's Novel *Petals of Blood*" also analyse how women characters in the novel are the victims of the patriarchal structure of the African society on the basis of race, class and gender. In 1963, Ngugi declares, "Violence in order to change an individual, unjust social order is not savagery, it purifies man. Violence to protect and preserve an unjust oppressive social order is criminal and diminishes man". Sakshi (2015) says:

We see women portrayed as victims of colonialism, patriarchy, oppressed figures, mothers, and also freedom fighters. The women have pitted against the unjust social, economical and political order and play their positive roles for the establishment of a new order. (p. 377)

By examining Hawthorne's fictional portrayal of Hester Prynne in *The Scarlet Letter* Li Guanghua in "On Hawthorne's Feminist Ideas Reflected in *The Scarlet Letter*" (2019) makes a subversive woman the spokesperson of his feminist ideas and refuses the concept of manhood and masculinity of his day. Crain (2000) in *The Story of A The Alphabetization of America from The New England Primer to The Scarlet Letter* mentions that Hawthorne by contrast insists on the artificiality of the alphabet and its practices in his antimimetic, hermetic letter, A which focuses on the uniquely persistent cultural role of Hester Prynne against patriarchy. Baymonce says, "The question of women is the determining motive in Hawthorne's work" (1982, p. 1) to subvert gender or sexual difference. Mohanty (1984) remarks, "The assumption of women as an already constituted coherent group with identical interests and desires, regardless of class, ethnic or racial location, implies a nation of gender or sexual difference or even patriarchy which can be applied universally" (pp. 336-337). The myth of women "is nothing but a gender role difference in the sociocultural context" (Sharma, 2018, p. 35). In "Myth and Fairy Tale in Contemporary Women's Fiction" (2001) Sellers focuses on the contemporary women's rewritings of myth highlighting the theoretical interests of feminist mythographers. In *The Beauty Myth: How Images of*

*Beauty Are Used Against Women* (2002) Wolf redefines the myths of women through the relationship between beauty and female identity. *The Mommy Myth: The Idealization of Motherhood and How It Has Undermined* (2004) by Douglas and Michaels breaks the myth of women through media images.

Though there have been plenty of studies about women on *Petals of Blood* and *The Scarlet Letter* separately related to gender roles and gender discriminations, there is hardly any specific discussion on breaking social myths about women by the characters of both the works in a single attempt. This paper is going to engage a general approach to comprehend how these two masterpieces of world literature encounter the notion of breaking myths about women and analyse the attitudes and actions of the characters to formulate a pattern of similitude in their responses to the same.

### Discussions

The following facts of Ngugi wa Thiong'o and Nathaniel Hawthorne would facilitate the understanding of their wonderful and excellent literary works. Ngugi wa Thiong'o is an East African leading novelist. His original name is James Thiong'o Ngugi. He was born on 5 February 1938 in Limuru, Kenya. Ngugi received his first bachelor's degree from Makerere University, Kampala, Uganda in 1963 and the second one from Leeds University, England in 1964. He served as a lecturer in English at University College, Nairobi, Kenya. From 1972 to 1977 he was the Senior Lecturer and Chairman of the Department of Literature at the University of Nairobi. He was a visiting professor of English at Northwestern University, U.S. His notable works are; *Weep Not, Child* (1964), *The River Between* (1965), *A Grain of Wheat* (1967), *The Black Hermit* (1968), *Homecoming* (1972), *The Trial of Dedan Kimathi* (1976), *I Will Marry When I Want* (1977), *Petals of Blood* (1977), *Devil on the Cross* (1980), *Writers in Politics* (1981), *Barrel of a Pen* (1983), *Decolonising the Mind* (1986), *Moving the Centre* (1993), *Wizard of the Crow* (2004), *Dreams in a Time of War* (2010), *In the House of the Interpreter* (2012), *Birth of a Dream Weaver: A Writer's Awakening* (2016), etc. Ngugi claims that British colonialism became responsible for the destruction of Kikuyu Kenyan society. He strongly believes that women have natural abilities and qualities. Most of his protagonists are women who play roles in the struggle against malpractice and misjudgement. His *Petals of Blood* deals with the exploitation of African women on the discrimination of race, class and gender. His Wanja tries to break patriarchal barriers and brings changes in society by breaking women's myths.

Nathaniel Hawthorne (1804-1864) was born at Salem in Massachusetts, the United States of America. He was a novelist, dark romantic and short story writer. He is best known for *The Scarlet Letter* (1850) and *The*

*House of the Seven Gables* (1851). It is known that Hawthorne was a feminist forerunner in the 19th century America. *The Scarlet Letter* is the most powerful feminist fiction that exposes his strong standing for women. When Hawthorne was brewing his writings of *The Scarlet Letter*, the Feminist Movement was building up to an extraordinary height in America. Hawthorne derives inspiration from some radical feminist advocates, predominantly the influential feminist theorist Margaret Fuller. Through Hester Prynne, Hawthorne gives expression to his new sensibility to women's rights. The platform for biographies of Ngugi wa Thiong'o and Nathaniel Hawthorne is described as agenda for understanding their wonderful affinity for their literary resistance against injustice.

Ngugi's and Hawthorne's women resist the contemporary myths of women in *Petals of Blood* and *The Scarlet Letter* respectively. Hawthorne vividly depicts domestic and sexual violence to show patriarchal domination. A woman like Hester in *The Scarlet Letter* is passive, submissive and unresisting and looked down upon by men. In no uncertain terms she clarifies her experiences, "Thou knowest that I was frank with thee, I felt no love nor feigned any" (Hawthorne, 1850, p. 5). She does not bow down before any obligation of "this system of domination, called patriarchy" (Walby, 1990, p. 3). "Women have frequently been ruthlessly exploited in our society and the problem is growing day by day...sexual harassment, abduction, rape and wife battering in public and at the workplace, etc" (Usmani, 2004, p. 13). Hawthorne makes Hester Prynne his representative to challenge Roger Chillingworth who perpetuates injustice on her. Chillingworth himself, a representative of male authority, has nothing but false belief in himself and his male domination. He thinks that Hester's love and desire are elitist indulgences". She dares to dream of a society in which men and women would enjoy equal opportunities but "some attribute had departed from her, the permanence of which had been essential to keep her a woman" (Hawthorne, 1850, p. 175). "She has to be subject to the punishment of the male authority and the condemnation of the public" (Guanghua, 1649). Women like Hester have frequently been ruthlessly exploited in the patriarchal form which "is neither universal nor an all-embracing phenomenon as different kinds of relationships have always existed between men and women in history" (Oakley, 1977, p. 185). Hester's resistance leads to definitive anti-masculine thought when she says, "Be it sin or no, I hate the man!" (Hawthorne, 1850, p. 7). "Hester stands out as a tough woman" (Guanghua, 2019, p. 1649) for breaking women's myths. Her variants of resistant rebellion are articulated through the exposition of the marital and inter-gender relations of women for rejecting women's unequal status in society. She retorts, "He has done me worse wrong than I did him" (Hawthorne, 1850, p. 7). She has "to create a sense of identity in a male-dominated conservative social space" (Shakeel 2018, p. 493) by breaking the social myths about women. Hawthorne takes the wholly original ladders to fashion a fallen woman, a

dark heroine who stands in a sharp contrast to the so-called learned and virtuous males. Hester says, “Mine was the first wrong when I betrayed thy budding youth into a false and unnatural relation with my decay” (Hawthorne, 1850, p. 4). She is represented as a sensual woman who has, “a rich, voluptuous, oriental characteristic and who is bold enough to whisper to her lover: “What we did had a consecration of its own” (Hawthorne, 1850, p. 6). “By depicting Hester’s tragic life and her fighting, Hawthorne refutes the concept of manhood and masculinity of his day” (Guanghua, 2019, p. 1648). Her actions challenge Governor Bellingham to defend her right to raise her baby. Her baby is everything. Her baby is the only treasure purchased with all she had. Her baby is her world. She never wants her Pearl to be stumbled upon and fallen amid the pitfalls of the world. She steps out of her solitary cottage without any hesitation, confronting the old puritan magistrates with extraordinary courage and rebellious spirit. She has long been isolated from her fellow human beings, and she is very conscious that it is an unequal match between the Puritan magistrates and herself. She says, “Yes, I hate him!” “He betrayed me!” (Hawthorne 1850, p. 7). She wins her indefatigable right to take care of her own baby. Her rebellious action is to expose Chillingworth’s true identity, which indicates her maturity.

She possessed an art that sufficed, even in a land that afforded comparatively little scope for its exercise, to supply food for her thriving infant and herself. It was the art-then, as now, almost the only one within a woman’s grasp-of needle-work. (Hawthorne, 1850, pp. 85-86)

Chillingworth tries to make a deal with Hester in prison and it allows him to cover his true identity. She agrees only because she is not in the right position to find a better way to protect her lover. “It seemed a fouler offence committed by Roger Chilling worth, than any that had since been done to him, that is the time when her heart knew no better, he persuaded her to fancy herself happy at his side” (Hawthorne, 1850, p. 7). Hester’s rebellion is to urge her lover to start a new life with her in the wilderness. To strike light into the dark world of Dimmesdale, she, without the least hesitation, tears the scarlet letter off her bosom and throws it away, and next, she heaves a long, deep sigh. She knows exactly that “the woman is losing her way, the woman is lost. One wonders if women still exist if they will always exist” (Beauvoir, 1989, p. 1). She has got punishment because of her adultery. She keeps the letter ‘A’ on her bosom as a symbol of emancipation and empowerment.

With a burning blush, and yet a haughty smile, and a glance that would not be abashed looked around at her townspeople and neighbours. On the breast of her gown, in fine red cloth, surrounded with elaborate embroidery and fantastic flourishes of gold thread, appeared the letter A. (Hawthorne, 1850, p. 55)

Xueqin (2003) describes, “The shame attached to her scarlet letter is long gone” (p. 50). When she eventually takes off the ugly cap defying the established norm of the Puritan society, her sex, her youth, and the whole richness of her beauty all come back to life.

It was a sad transformation, too, that her rich and luxuriant hair had either been cut off or was so completely hidden by a cap, that not a shining lock of it ever once gushed into the sunshine.....nothing in Hester’s bosom, to make it ever again the pillow of Affection. (Hawthorne 1850, pp. 174-175)

Similarly, Wanja in *Petals of Blood* is trapped in the myths of women. Through the portrayal of Wanja, Ngugi wa Thiong’o depicts many hints of the roles of contemporary African society and how the women were treated at that time, illustrating social values and stereotypes. Wanja becomes the direct victim of sexual exploitation. Kimeria rapes her and she becomes pregnant in her adolescence. She is forced to leave school and thrown out of a family fold due to her unexpected pregnancy. “There is a discriminatory attitude towards women ... based on many myths and which given rising too much amorality in the possession of women” (Jayan, 2017, p. 8) in the patriarchal society. Karega also detests the attitude of men towards women’s low pay in factories and other places. Wanja is neglected and everything falls apart for her. It is still a common myth about women in African society. In the novel, patriarchy assumes:

Men too seemed to think they were better off than women workers because they got a little bit more pay and preference in certain jobs. They seemed to think that women deserved low pay and heavy work: women’s real job, they argued amidst noise and laughter, was to lie on their backs and open their legs to man’s passage to the kingdoms of pleasure. (Thiong’o, 1977, p. 304)

Wanja has an unhappy childhood. She never truly experienced love in her childhood. Her father always runs after money and does not care about her. There are often quarrels between her mother and father. Multani (2016) mentions, “The constant fights between her parents highlight Ngugi’s belief that domestic harmony is impossible without wider social harmony. As a child she is baffled by these domestic fights” (p. 8).

Wanja presents in an innovative and realistic mode concerns for human rights in general and women’s rights in particular. She desires to gain independence from her bitter experiences. She strongly pronounces that if you do not eat, you will be eaten. She says:

If you have a cunt. If you are born with this hole, instead of it being a source of pride, you are doomed to either marrying

someone or else being a whore. You eat or you are eaten. How true I have found it. I decided to act, and I quickly built this house. (Thiong'o, 1977, p. 293)

Through passing a state of turmoil, submissive and vulnerable women like Wanja can experience reality by escaping from myths to the real world, a world of their own. She states that between a prostitute and a worker there is no difference. Palmer confirms that Wanja is “brave, resilient, resourceful and determined” (Roos, 2014, p. 154). Wanja conveys her sense of confidence, African pride, feminism, independence, and resistance. She goes on to protest and keep a strong stance. She says, “I’ll struggle against these black oppressors ... alone ... alone” (Thiong'o, 1977, p. 328). She defies the patriarchy and asserts that females are fit to work, earn money or manage the business. LaPin writes that she is an “admiral indeed heroic, a character” (Roos, 2014, p. 154) for “her economic self-sufficiency, whether through prostitution or some other means” (Roos, 2014, p. 166). She kills Kimeria because he betrays her and rapes her. Sharma also suggests that Wanja “is the spirit and earth of Kenya, humiliated, exploited and ill-used (Roos, 2014, p. 302). Wanja in *Petals of Blood* accentuates the victimisation of the African woman under the neo-colonial system and her struggle to protect herself” (Alzawi, 2018, p. 196). She makes violence against the patriarchy for breaking the myths about women. Her “most praiseworthy ambition is to obtain a character as a human being” (Wollstonecraft, 1972, p. 6). The uniqueness of the literary resistance of Wanja and Hester “implies an eye for resemblances” (Richards, 1981, p. 202) for achieving women’s social honour and dignity. Literally, for upholding human dignity all the writers think alike.

## Conclusion

The vision of the dissertation is to revisit the fictional world of Ngugi wa Thiong'o and Nathaniel Hawthorne to break the concept of myth about women. Wanja and Hester Prynne take appropriate actions under the circumstances to break the social myths about women before the strong strand of patriarchy. They challenge patriarchal bias and work as sources of inspiration for the educated women folk of the entire world to shake off their timidity. They take a planned action to break the myth about women to achieve equally the enjoyment of the basic capabilities, economic assets, voices and freedom from fear and violence. By their revolutionary initiative, they envision that men respect women as wives and mothers and in the concrete events of conjugal life, a woman stands there before a man as a free being. The sense of breaking the myth about women may be realised when individual consciousness grows optimally.

## References

- Alazzawi, A. J. M. (2018) 'Feminist perspective in Ngugi Wa Thiong's Novel *Petals of Blood*', *International Journal of English Literature and Social Sciences*, vol. 3, Issue 5, pp. 849-853.
- Anfal, T. (2019) *Victimisation of Women in Ngugi's Petals of Blood*, Mohamed Khider University of Biskra Press, Algeria.
- Baymonce, N. (1982) 'Thwarted nature: Nathaniel Hawthorne as feminist. In American novelists revisited', *International Journal of English Literature and Social Science*, vol. 4, issue 6, pp. 1647-1651.
- Beauvoir, S. D. (1989) *The Second Sex*. Vintage Books Publication, New York.
- Crain, P. (2000) *The Story of A The Alphabetization of America from The New England Primer to The Scarlet Letter*, Stanford University Press, Redwood City California, USA.
- Douglas, S. J. & Meredith, M. (2004) *The Mommy Myth: The Idealization of and How It Motherhood Has Undermined*, Free Press, New York.
- Guanghua, L. (2019) 'On Hawthorne's feminist ideas reflected in The Scarlet Letter', *International Journal of English, Literature and Social Science (IJELS)*, vol. 4, issue 6, pp. 1647-1651.
- Hawthorne, N. (1850) *The Scarlet Letter*, Ticknor and Fields, USA.
- Jayan, J, K. C. S. (2017) 'Divine gender inequality: a study of mythological degradation of Hindu women in India', *SSRN (Social Science Research Network) Papers*, pp.1-12, viewed 21 February 2022, [www.papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2949781](http://www.papers.ssrn.com/sol3/papers.cfm?abstract_id=2949781).
- King, U. (1980) 'Women and religion: the status and image of women in some major religious traditions', *Women in Contemporary India and South Asia*, Alfred de Souza, Manohar Publications, India.
- Mohanty, C. T. (1984) "Under western eyes: feminist scholarship and colonial discourses", *JSTOR*, vol. 12, no. 3, pp. 333-359.
- Multani, G. (2016) Historical consciousness as unfolded in Ngugi wa Thiong'o's *A Grain of Wheat And Petals of Blood*, *Pune Research*, vol. 2, Issue 4, pp.1-11.



- Oakley, A. (1972) *Sex Gender and Society*, Temple Smith, London.
- Richards, J. (1981) *Women Writer's Talking*, Cambridge University Press, UK.
- Roos, B. (2002) 'Re-historicizing the conflicted figure of woman in Ngugi's *Petals of Blood*', *Research in African Literatures*, Indiana University Press, vol. 33, no. 2, pp. 154-170.
- Sakshi, S. (2015) "The delineation of women characters in Ngugi wa Thiong'o's fiction," DIT University, vol. 3, no. 3, pp. 377-382.
- Sellers, S. (2001) *Myth and Fairy Tale in Contemporary Women's Fiction*, Palgrave Macmillan, London, UK.
- Shakeel, A. (2018) 'Writing as a skill: a study of Manju Kapur and Arundhati Roy', *LangLit: An International Peer-Reviewed Open Access Journal*, vol. 5, no.1, pp. 492-494.
- Sharma, S. K. (2018) 'Gender discrimination in Arundhati Roy's *The God of Small Things*', *Epitome: International Journal of Multidisciplinary Research*, vol. 2, no. 4, pp. 30-37.
- Thiong'o, N. W. (1977) *Petals of Blood*. Heinemann-African Writers Series, Africa.
- Usmani, M. (2004) 'Violence against women', *University News Magazine*, vol. 38, no.4, p.13,
- Wagner, P. (2012) *How to Turn Your Marriage Around in 10 Days*, Xulon Press, Maitland Colonnades, USA.
- Walby, S. (1990) *Theorizing Patriarch*, Amazon.com.
- Wolf, N. (2002) *The Beauty Myth How Images of Beauty Are Used Against Women*. Harper Collins Publishers, New York.
- Wollstonecraft, M. (1792) *A Vindication of the Rights of Woman: With Strictures on political and moral subjects*, printed by William Gibbons, UK.
- Woolf, V. (1929) *A Room of One's Own*, Random House, New York City.
- Xueqin, M. (2003) 'Does Hester get rebirth?—reexamination of the heroine in *The Scarlet Letter*', *Journal of PLA University of Foreign Languages*, vol. 5, pp. 45-50.

## Suicidal Behaviour among the Secondary Level Students of Dhaka: Types and Responsible Agents

Rahul Chandra Shaha<sup>1</sup> and Ankhi Rani<sup>2</sup>

**Abstract:** Suicide is regarded as a deviant act. It is extremely alarming for teenagers or adolescents who are mainly studying at the secondary level in Bangladesh. The existence of suicide phenomena in society is a significant issue that requires careful examination (Wanyoike, 2015), and conducting studies to address it clearly is a matter of urgency. As a result, the current research was conducted. The study attempted to identify the predominant types of suicidal behaviour (SB) adopted or committed by secondary school students and to identify the responsible agents in this regard. These were specific objectives of the study. The study was conducted using a mixed-method approach. To accomplish the study data were collected from teachers, parents, psychologists, educationalists and students using semi-structured interview schedules, FGD and questionnaire respectively. The data were analysed using a combination of simple statistics and thematic analysis techniques and presented in the form of tables, graphs, and quotes. The result and comprehensive analysis of the study revealed that hurting themselves (49.95%) and cutting parts of their body (14.9%) were the foremost types of suicidal behaviour which students have adopted frequently in the perspective of Bangladesh. This study also brought to light that bad company of the students was the main responsible agent of the suicidal behaviour of students. Based on the findings, some recommendations were attached in consideration of improving the overall situation.

**Keywords:** Suicidal behaviour, secondary level students, types, responsible agents, mixed method

### Background and Rationale of the Research Study

Suicidal behaviour is defined as any intentional action or attempt that may result in a person's death or serious injury to his or her life, such as intentionally overdosing on drugs or crashing a car (US Medicine Plus, 2019). Suicide has become a daily occurrence in Bangladesh at the moment. Suicide is a global problem that transcends cultural, geographical, religious, social, and economic boundaries, as Alexander (2001), Aseltine and DeMartino (2004), and Johansson et al. (2006) have demonstrated. It has developed into a significant issue from both an international and Bangladeshi perspective. Suicide is now the eighth leading cause of death risk in Bangladesh, according to Osterweil (2007). It occurs between the ages of 12 and 24 and is most prevalent among

---

<sup>1</sup> Lecturer, Department of Language Education, Institute of Education and Research (IER), University of Dhaka, Dhaka, Bangladesh. E-mail: rahul.du.718@gmail.com

<sup>2</sup> M.Phil. Fellow, Institute of Education and Research (IER), University of Dhaka, Dhaka, Bangladesh. E-mail: ankhipakhi@gmail.com

secondary school students, commonly referred to as teenagers or adolescents.

Suicide deaths in Bangladesh reached 19,697, or 2.06 percent of total deaths, according to the data revealed by WHO in April 2012. The death rate, adjusted for age, is 13.52 per 100,000 population ranks. Bangladesh is ranked number 38 in the world (Ara, Uddin & Kabir, 2016). As a result, it has been identified as a critical problem in recent years. It is extremely alarming for teenagers who are primarily studying at secondary schools in Bangladesh. Suicidal Behaviour (SB) is on the rise among secondary school students daily (e.g., Aritry Adhikari committed suicide, a student of the Viqarunnissa Noon School, Dhaka, on the 6th December 2018). This incident was covered in the daily news with a headline and sent shockwaves throughout the country. That is why our research is centred on suicide. The researcher attempted to determine the types of suicidal behaviour among secondary school students and the responsible agents of SB in the context of Bangladesh, especially the Dhaka region.

### **Research Objective**

The pivotal aim of this research was to explore the real scenario of the suicidal behaviour by the students of the secondary level of education in Dhaka. In accordance with the research aim, the following specific research objectives were determined to guide the research-

- to find out the type (s) of SB committed by the students at the secondary level of education in Dhaka
- to figure out the responsible agent (s) behind the SB of students at the secondary level of education in Dhaka
- to provide recommendation (s) to minimize or remove SB from the students at the secondary level of education

### **Methodology of the Current Research**

In this section the entire methodology of the research has been presented serially to a short extent.

### **Design and Nature of the Study**

The study was exploratory and descriptive in nature, and the researcher employed a mixed method approach, in which quantitative and qualitative research techniques were combined to evoke more descriptive and in-depth information from key informants. For quantitative data, structured sections of the questionnaire and interview schedule were used whereas for qualitative data a basic interpretive study design was used, which included FGD, an open-ended section of the questionnaire, and an interview tool.

## Sample and Sampling of the Study

Secondary schools were conveniently chosen for this research. Twenty secondary schools were chosen from Dhaka and 50 students were purposively selected from each secondary school. Teachers, Parents, Psychologists, and Educationalists were also purposively sampled. The area, respondents, and schools were chosen with the researcher's convenience in mind and to complete the research perfectly.

The entire sample design of the study is depicted below:

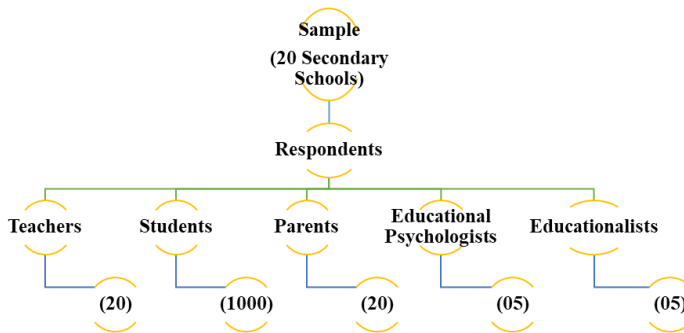


Figure-1: Sample design of the study (Source: Authors)

## Instruments of Data Collection

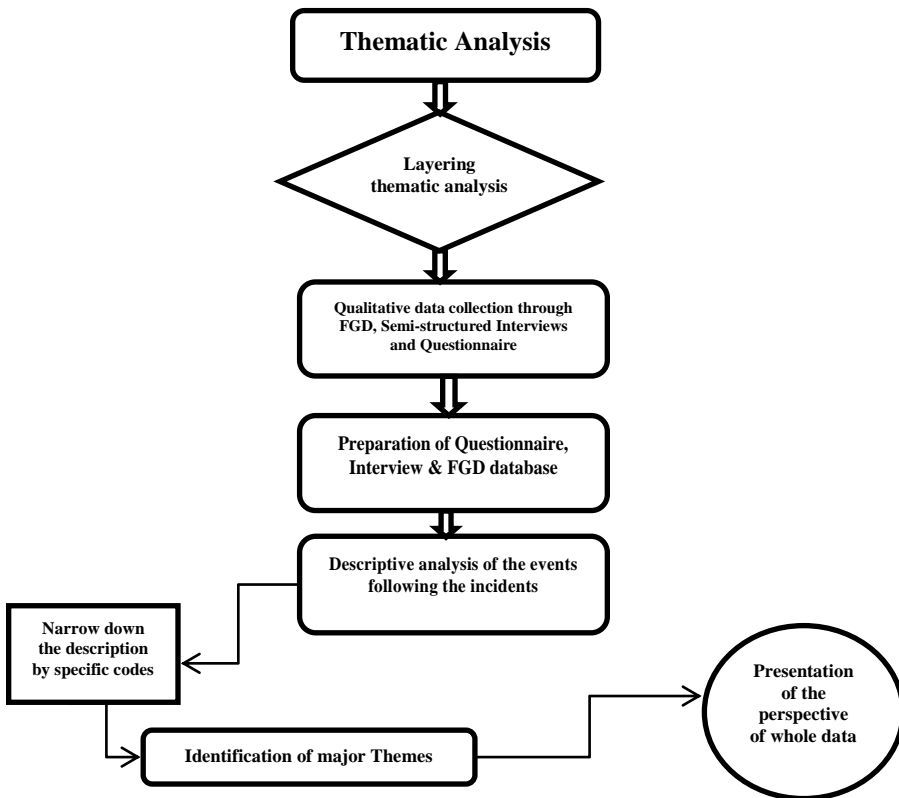
Choosing the appropriate tools is vital for a successful research project. The researcher used a variety of tools to collect the necessary data, utilizing the data triangulation technique. Three distinct tools were used in this study to collect data. The following tools were used to collect data:

- **Paykel scale:** To begin, we used the Paykel scale to identify vulnerable (target sample) students who are predisposed to suicidal behaviour. The Paykel Suicide Scale (Paykel et al., 1974) is a self-report instrument designed to assess suicidal behaviour. It is comprised of five items with a binary response system (Yes/No). Higher scores are associated with suicidal ideation of a severe nature. This scale was used to identify targeted students, and then a semi-structured questionnaire was distributed to this targeted sample in order to collect the necessary data for the research. For the current research, more than 4500+ students were surveyed using the Paykel suicide scale to fix the targeted 1000 sample.
- **Semi-structured Interview Schedule:** For Teachers, Parents, Psychologists, and Educationalists, a semi-structured interview schedule was developed.
- **Semi-structured Questionnaire:** It was intended for use by students. This questionnaire was used to collect data on the types, responsible agents, and difficulties associated with suicidal behaviour.

- **Focus Group Discussion Schedule:** A focus group is a type of qualitative research in which participants are questioned about their perceptions, opinions, beliefs, and attitudes toward various ideas or issues. To collect more valid, rich, and reliable data, a schedule of FGDs with students was created. Twenty focus group discussions were held in twenty schools. Each group consisted of eight to ten students.

**Methods of Data Analysis and Presentation**

This study analysed data quantitatively and qualitatively. For quantitative data, descriptive statistics like percentage, frequency, average etc. were used, and for qualitative data, thematic analysis was used. The analysed data was expressed in the form of graphs, charts, figures, tables, and occasionally in the form of a theme or quotation. The total data analysis process through layering thematic analysis (Creswell, 2003) approach which was applied for this research study is given below by using the following diagram:



**Figure-2: Design of the Thematic Analysis for the study**  
 (Source: Creswell, J. W., 2003)

Finally, all the analyses and findings were divided and presented under each research objective by categorizing them into some themes.

### **Analysis of Data and Discussion of the Salient Findings**

A total analysis of the research has been presented in the following by segmenting into some parts in accordance with research objectives.

#### **Demographics of the Students**

As the study inquires to explore the types and responsible agents of SB of secondary level students of Dhaka city, The students were consequently selected from Dhaka city. The students were from grade VI to grade X. The study included 1000 students from 20 secondary schools.

**Table-1: Demographic information of the students**

<b>Demographics</b>	<b>Variables</b>	<b>Frequency</b>
Gender	Male	500
	Female	500
Grade Level	Grade-VI	01
	Grade-VII	63
	Grade-VIII	144
	Grade-IX	315
	Grade-X	477
		1000

Data in table 1 signifies that 0.1%, 6.3%, 14.4%, 31.5% and 47.7% of students from Grade VI, Grade VII, Grade VIII, Grade IX Grade X were respectively selected for the study. This table also shows equality in the male-female ratio, but students' gender is not considered a variable in this study. It is also seen that an unequal proportion of students from different grades was selected for maintaining the representation of the entire students at the secondary level of education. It is worth mentioning that students were selected for the questionnaire and FGD were determined as suicidal prone by judging the 'Paykel scale'.

#### **Analysis of the Data Regarding Types of Suicidal Behaviour Adopted or Committed by Students**

Multiple types of SB adopted and committed by the students has brought to light by this research. This section deals with it.

The students' responses about the types of suicidal behaviour they usually adopt are tabulated in the following table

**Table-2: Students' responses about the types of suicidal behaviour they usually adopt  
(Multiple answers were accepted from the respondents)**

Types of SB	Frequency of Responses			Percentage (%)		
	Male	Female	Total	Male	Female	Total
Hurt themselves	252	214	= 466	46.75	54.31	49.95
Wound themselves	33	28	= 61	6.12	7.11	6.54
Cut their body parts	61	78	= 139	11.31	19.80	14.90
Addict in drug	47	9	= 56	8.74	2.28	6
Hang themselves	57	4	= 61	10.57	1.01	6.54
Insecticide poisoning	61	38	= 99	11.32	9.65	10.61
Drown themselves	28	23	= 51	5.19	5.84	5.46
<b>Total</b>	= 539	= 394	= 933	= 100	= 100	= 100

The table-2 shows the types of suicidal behaviour that the students usually adopt. Suicidal behaviour such as hurting themselves, wounding themselves, cutting their body parts, being addicted to the drug, hanging themselves, insecticide poisoning, drowning themselves, etc. students usually adopt. It is seen that the maximum number of students frequently adopts suicidal behaviour by hurting themselves while the minimum number adopts drowning. Among the 933 respondents, a total number of 466 students including male 252 and female 214 frequently hurt themselves (identified as a type of suicidal behaviour). 46.75% of this type of suicidal behaviour is in favour of male students while 54.31% is in favour of female students and a total of 49.95% of students both male and female adopt this type of SB.

The second highest type of Suicidal Behaviour that the students frequently adopt is 'cutting the parts of their body'. A total number of 139 students including male 61 and female 78 cut parts of their bodies as a type of suicidal behaviour. 11.31% of this type of suicidal behaviour is in favour of male students while 19.80% is in favour of female students. 14.90% of students both male and female adopt the SB by cutting the parts of their body.

The third highest Suicidal Behaviour is 'insecticide poisoning'. A total number of 99 students (male: 61; female: 38) eat insecticide for killing themselves. 11.32% of male students and 9.65% of female students are in this category. On the contrary, the total percentage is 10.61% under this type of suicidal behaviour. Few students both male and female choose to

drown as an SB or kill themselves. The total percentage of this category is 5.46%.

The other types of suicidal behaviour marked the students, teachers, parents, psychologists and educationalists are also presented below-

- Get angry and stopped eating and talking
- Rough behaviour with family members
- Crying for hours, not having a proper meal, could not sleep
- Punching in the walls
- Eating nothing for many days
- Taking more Napa tablets
- Stopping breathing for 45 or more seconds
- Taking any medicine
- Breaking things in front of oneself
- Breaking glass and everything
- 2 hours dunk in the water
- Jump from building
- Going washroom and closing the door and not eating anything  
(above data from Ss SSQ and FGD)
- try to jump from the rooftop (PI<sub>2</sub>)
- stay closing the door (PI<sub>4</sub>)
- Suicidal Note (TI<sub>3</sub>)
- Cutting hand with a blade or scissors (TI<sub>4</sub>)

The entire analysis has revealed the following salient findings –

- The maximum number of students (49.95%) frequently adopt 'hurting themselves as a type of suicidal behaviour while the minimum number adopt drowning (5.46%) in the perspective of Bangladesh.
- The second highest type (14.9%) of suicidal behaviour adopted by the students is 'cutting the parts of their body'.
- Wounding students themselves, being addicted to the drug, hanging students themselves and insecticide poisoning are the rest of the types of SB usually adopted by students of secondary level of education.

The almost same result is found from the study by the Shah, M.M.A., Ahmed, S. and Arafat, S.M.Y. (2017) that 'hanging' was found to be the commonest method (82.29%); marital and familial discord remained a noticeable risk factor (34.32%).

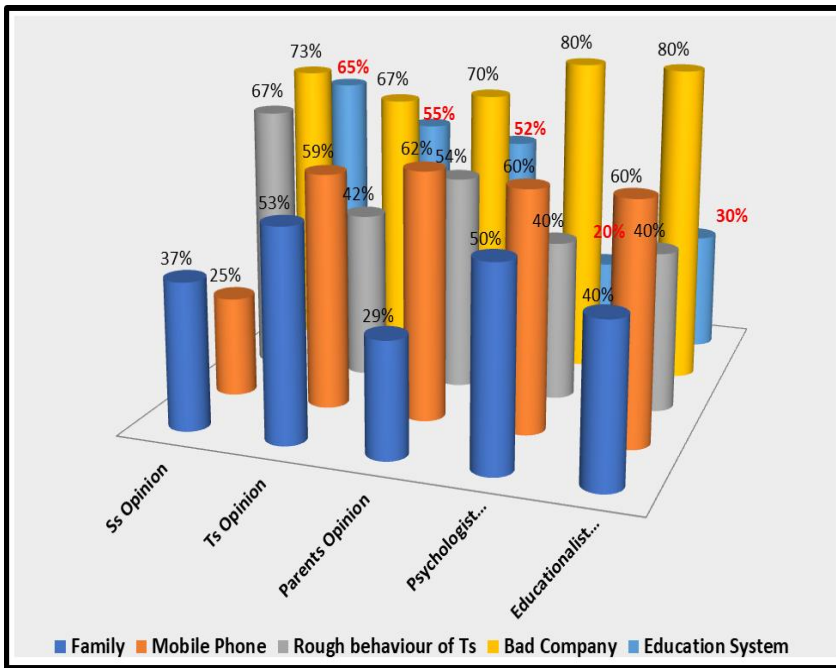


In contrast with this finding Arafat, S.M.Y. (2017) articulated that the average suicide rate was found 39.6/per 100,000 population/year and the most common method was hanging and poisoning.

Even though a study by Joiner (2005) agreed with the findings of the current study to some extent.

### Analysis of the Data Regarding Responsible Agents behind the Suicidal Behaviour of Students

One of the prominent research objectives is analysed in this section. The following figure specified the possible responsible agents behind the SB of the students-



**Figure 3: The possible responsible agent behind the SB (Source: Researchers, based on the data analysis)**

Figure 3 signifies that all the respondents i.e., students, teachers, parents, psychologists and educationists opine that the main Responsible Agent of suicidal behaviour is students' 'Bad Company'. Bad Company is the top most Responsible Agent of suicidal behaviour according to the opinion of students (73%), teachers (67%), parents (70%), psychologists (80%) and educationists (80%). It is seen that psychologists and educationists give a similar opinion which covers 80%. The rough behaviour of teachers is the

second most Agent to the students (67%) while technology/ mobile phone/ Internet is the second most agent to the teachers (59%), parents (62%), psychologists (60%) and educationists (60%). The third suicidal agent is the Education System in the eye of students (65%) as well as teachers (55%) while the rough behaviour of Ts is to the parents (54%) and educationists (40%). On the other hand, family is to the psychologists (53%) and educationists (40%). The last responsible agent, according to students includes mobile phones (25%), teachers, rough behaviour of Ts (42%), parents, family (29%). Besides, psychologists and educationists, educational system cover 20% and 30%.

The entire analysis of data revealed that 'Bad Company' is the main responsible agent of the suicidal behaviour of students and 'Technology'/ 'Mobile Phone'/ 'Internet' is the second responsible agent. 'Rough behaviour' of teachers, 'the Education System' itself and 'Family issues' are other prevalent responsible agents of SB to students of secondary level of education. But some arguments are behind these although the literature is scarce.

In accord with the above findings, Ara, M. J., Uddin, M. F., and Kabir, M. S. (2016) present key evidence from their research study showing that bad company of adolescents and family problems lead them to commit suicide.

### **Recommendations and Conclusion**

The researcher has developed recommendations for future actions to achieve greater impact based on the research findings and discussion of emerging factors revealed by the evidence of the gathered data.

- Appoint a psychologist or a student counsellor in each school
- Parents should less pressurize their children
- Be free with the children as much as they can
- If parents are not free with the children, try to appoint a family member e.g., elder sister, brother, grandparents, etc. to be free with the children
- Do not provide much technology e.g., Smart Phone, Tab, etc. so early
- Remove the addiction towards the internet, cartoons, games, etc.
- The student should be busy with their favourite pastime, spend a lot of time with friends, and share everything with family members without any hesitation

This study tried to cover the secondary school-going adolescent students' tendency towards suicidal behaviour from the context of Dhaka, Bangladesh. The scenario is horrible. A sustainable number of studies are needed to figure out the ins and outs of suicidal behaviour from every corner of Bangladesh.

### **Acknowledgement**

We would like to express our heartfelt appreciation to our respected supervisor, **Professor Md. Fazlur Rahman**, IER, University of Dhaka, Bangladesh, for his constant guidance and invaluable encouragement. Additionally, we would like to acknowledge and express our gratitude to Syed Md. Abdul Hannan, NAEM's Teacher Trainer, for assisting us as a team member. Additionally, we would like to express our heartfelt gratitude to the National Academy for Educational Management (NAEM), Secondary and Higher Education Division, Ministry of Education, NAEM Road, Dhanmondi, Dhaka-1205, Bangladesh, for funding the entirety of the research work in the fiscal year 2019-20, without which we would not have been able to complete this study.

### **References**

- Alexander, R. E. (2001) 'Stress-related suicide by dentists and other health care workers: fact or folklore?', *Journal of the American Dental Association*, vol. 132, no. 6, pp. 786-794.
- Ara, M. J., Uddin, M. F. & Kabir, M. S. (2016) 'The causes of suicide and impact of society in Bangladesh', *International Research Journal of Social Sciences*, vol. 5, no. 3, pp. 25-35.
- Arafat, S. M. Y. (2017) 'Suicide in Bangladesh: a mini review', *Journal of Behavioral Health*, vol. 6, no. 1, pp. 66-69.
- Aseltine, R. H. & Martino, R. (2004) 'An outcome evaluation of the SOS suicide prevention program', *American Journal of Public Health*, vol. 94, no. 3, pp. 446-451.
- Creswell, J. W. (2003) *Research Design: Qualitative, Quantitative, and Mixed Method Approaches*, Sage, London.
- Joiner, T. E. (2005) *Why People Die by Suicide*, Harvard University Press, Cambridge.
- Osterweil, N. (2007) 'APA: simple screen improves suicide risk assessment', *Psychiatric Times*, vol. 3, pp. 39-42.
- Paykel, E. S., Myers, J. K., Lindenthal, J. J. & Tanner, J. (1974) 'Suicidal feelings in the general population: a prevalence study', *The British Journal of Psychiatry*, vol. 214, pp. 460-469.

Shah, M. M. A., Ahmed, S. & Arafat, S. M. Y. (2017) ‘Demography and risk factors of suicide in Bangladesh: a six-month paper content analysis’, *Hindawi Psychiatry Journal*, pp. 1- 5.

Strandheim, A., Bjerkeset, O., Gunnell, D., Bjorneliv, S., Holmen, T. L. & Bentzen, N. (2014) ‘Risk factors for suicidal thoughts in an adolescence-a prospective cohort study: the young-HUNT study’, *BMJ Open*, vol. 4, no. 8, pp. 41-53.

Wanyoike, B. W. (2015) ‘Suicide among university students in Kenya: causes, implications and interventions’, *Journal of Language, Technology & Entrepreneurship in Africa*, vol. 6, no. 1, pp. 41-42.

## **Risk Analysis of the Accidental Release of Hydrogen Sulfide from a Petroleum Refinery**

**M. G. Toufik Ahmed<sup>1</sup>, Galib Hassan Khan<sup>2</sup> and Ahosan Habib Rakib<sup>3</sup>**

**Abstract:** With the rise of industrialization in Bangladesh, chemical hazard has become a serious concern. Different gases are utilized for various applications and some of them are poisonous which can harm human health seriously by ingesting or absorbing. The toxicity level and required amount to cause harm vary depending on the chemical and other conditions in the environment. The impact of hydrogen sulfide leakage, a routinely generated material in the petroleum sector, was investigated in this study by simulating unintentional releases and assessing the resulting risk zones. A potential toxic discharge scenario was created and modeled using Aerial Location of Hazardous Atmospheres (ALOHA) software for several seasons and weather conditions. The investigation was conducted at a petroleum refinery located in Mongla, Khulna, Bangladesh, and the surrounding area. Different levels of concern (LOCs) were discovered in the surrounding impacted areas. At various levels of concern (LOCs), the surrounding regions were discovered. Studying the effects of wind speed, relative humidity, air temperature and other variables on release rate and duration was the focus of this investigation. It was found that winter and autumn had the highest risk of spreading hydrogen sulfide. As a model for dealing with real-life incidents, this research evaluated different scenarios of harmful industrial gas dispersion and their influence on the surrounding ecosystem.

**Keywords:** Hazardous gas, simulation, accidental release, ALOHA, risk analysis

---

<sup>1</sup> Lecturer, Department of Chemical Engineering, Khulna University of Engineering and Technology (KUET), Khulna, Bangladesh. Email: toufik@che.kuet.ac.bd

<sup>2</sup> Research Officer, ICDDR,B, Dhaka, Bangladesh. Email: galibhkhann@gmail.com

<sup>3</sup> Engineer Operations, Petromax Refinery Limited, Khulna, Bangladesh. Email: ahoshanhr@gmail.com

## Introduction

Natural gas is a readily available and cheap source of energy in Bangladesh. Bangladesh has a small amount of oil reserves (Islam et al., 2014). Therefore, Bangladesh is heavily reliant on oil refineries, which refine oil from imported crude and domestic natural gas condensate.  $H_2S$  is formed from a common element found in oil and gas during the refining process (Frish et al., 2005). Refineries create the vast majority of the hydrogen sulfide ( $H_2S$ ) found in their gas streams.  $H_2S$  can be eliminated from the gas stream by treating refinery processes that break down organic sulfur compounds and transform them into  $H_2S$  (Jafarinejad, 2016). In addition, sulfur-based catalyst promoters such as DMDS are used to break down the hydrocarbons (Chang et al., 2001). These sulfurs can later turn into hydrogen sulfide through various reactions. Any accidental release of this gas can pose a severe problem. Because  $H_2S$  is heavier than air, it may fall to the ground and settle. This can pose a serious risk to the people living in that area.  $H_2S$  burns and explodes easily. Sulfur dioxide is created when  $H_2S$  burns, and it is a hazardous gas that is poisonous, offensive-smelling, and irritant (Frish et al., 2005). Hydrogen sulfide ( $H_2S$ ), commonly known as sour gas, sewer gas, smelly damp, and hydrosulfuric acid, is mistakenly exposed to employees every year. Experiencing too much  $H_2S$  in a short period can kill a worker (Frish et al., 2005).

Between 2001 and 2010, hydrogen sulfide killed 60 US workers, according to the Bureau of Labor Statistics (Rubright et al., 2017). When a pipeline burst at a Sri Lankan oil refinery in mid-November 2021, poisonous vapors were accidentally inhaled by workers who were performing repairs. The release contained hydrogen sulfide and seven people were injured due to the accident (Shivanthan et al., 2013).

When gas leaks or a fire occurs, the extent of the damage is greatly affected by the meteorological conditions now. A Gaussian model predicts that a gas that weighs about the same as air will spread. Every crosswind slice of a floating, impartially buoyant gas cloud has a gas concentration that rises to a peak and then decreases with time. Faster mixing with the surrounding air occurs when the wind speed increases, which results in more dispersion in Gaussian releases. The conclusion is that hazardous and flammable gas hazard zones are smaller when gas clouds are discharged at greater wind speeds than when gas clouds are produced at lower wind speeds. Higher wind speeds can occasionally result in wider hazard zones when gases that are denser than air sink and remain near the ground or sea surface, because the gas cloud's capacity to spread in all three dimensions is limited (Chambers & Johnson, 2009).

In this study, the ALOHA is used for dispersion modeling of the released  $H_2S$  gas. It displays the estimation as three threat zones (red zone, orange

zone and yellow zone), where the toxicity of H<sub>2</sub>S exceeds the user-specified level of concern. In this study, Acute Exposure Guideline Levels (AEGLs) are used to define the toxicity level of concern for three threat zones with an exposure time of 60 minutes. Using the heavy gas dispersion model, ALOHA estimates the H<sub>2</sub>S concentration. An impartially buoyant gas will initially behave differently from a gas that is heavier than air.

Petromax Refinery Limited situated in Khulna is used as a subject of the study. The model is used to simulate the scale of threat zones and dispersion when H<sub>2</sub>S is released due to a pipeline rupture. The effects of temperature, humidity and wind speed on the threat zones have been studied. Analysis of radiant heat danger zones caused by fire was carried out in another simulation. Risk-informed development planning might benefit from this research.

## Methodology

### Modeling scenarios

Petromax Refinery Limited is located in Mongla, Khulna. Here, a case study was developed based on the plant data. The source of the accidental release of H<sub>2</sub>S is rupture in a pipeline that contains H<sub>2</sub>S. It is a gas line with a flow of 500 kg/hr gas that contains H<sub>2</sub>S with a concentration of 180 ppm. The pipeline pressure is 15 atm, the hole diameter size is 2.5 inches, and the height of release above sea level is 15 meters.

The atmospheric conditions were based on the 4 seasons of the country. The atmospheric data used for simulation for the mentioned location is given below:

**Table-1: Seasonwise temperature, wind speed and direction, and relative humidity**

Season	Temperature (°C)	Wind speed (m/s)	Wind direction	Humidity (%)
Winter	20.7	2.8	N	20
Summer	28.7	4.9	S	78
Monsoon	28.8	6.4	S	92
Autumn	26	3.2	S	52

Source: Khatun et al., 2016

## Level of Concern Selection

Toxicity, fire, or explosion-related hazards have a threshold level of concern (LOC). Toxic LOCs, for example, define the maximum permissible concentration of a hazardous substance that might cause harm to those who are subjected to it for an extended period. The nearby population might be in danger if the LOC is exceeded. In the context of toxicologically relevant LOCs, a number of public exposure recommendations are published, the most notable of which are the Acute Exposure Guideline Levels (AEGs). AEGs are split into three levels; AEG-1, AEG-2 and AEG-3, depending on severity. AEG-1 is the least severe, while AEG-3 is the most severe of the three (Siddiki & Ahmed, 2020).

**Table-2: Summary of AEG values for Hydrogen Sulfide**

Classification	10 min	30 min	1 h	4h	8h	End Point
AEG-1 (Nondisabling)	0.75 ppm	0.60 ppm	0.51 ppm	0.36 ppm	0.33 ppm	Headache in humans with asthma (Jäppinen et al., 1990)
AEG-2 (Disabling)	41 ppm	32 ppm	27 ppm	20 ppm	17 ppm	Edema of the perivascular system in rats (Green et al., 1991, Khan et al., 1991)
AEG-3 (Lethality)	76 ppm	59 ppm	50 ppm	37 ppm	31 ppm	After one hour of exposure to the highest dosage, the rat was unaffected (MacEwen and Vernot, 1972)

Source: Council, 2003

## Running Simulation

Two types of simulations were run for this study. Firstly, threat zones were determined. The threat zones describe how far the toxic H<sub>2</sub>S can travel with its different threat levels. The threat zones are also plotted on MARPLOT to visualize the affected area. Threat at a fixed point also has been determined.



Secondly, radiant heat consequences have been simulated. Thermal radiation (heat) from fires can cause burns to those who are exposed. If a thermal radiation LOC is exceeded, a potential danger might be realized. According to an examination of widely regarded sources, ALOHA sets its default thermal radiation settings (Manual, 2007). Using ALOHA, three threshold values (in kilowatts per square meter, written as  $\text{kW/m}^2$ ) have been found. : (Manual, 2007)





- $10 \text{ kW/m}^2$  (potentially lethal within 60 sec);
- $5 \text{ kW/m}^2$  (second-degree burns within 60 sec); and
- $2 \text{ kW/m}^2$  (pain within 60 sec).

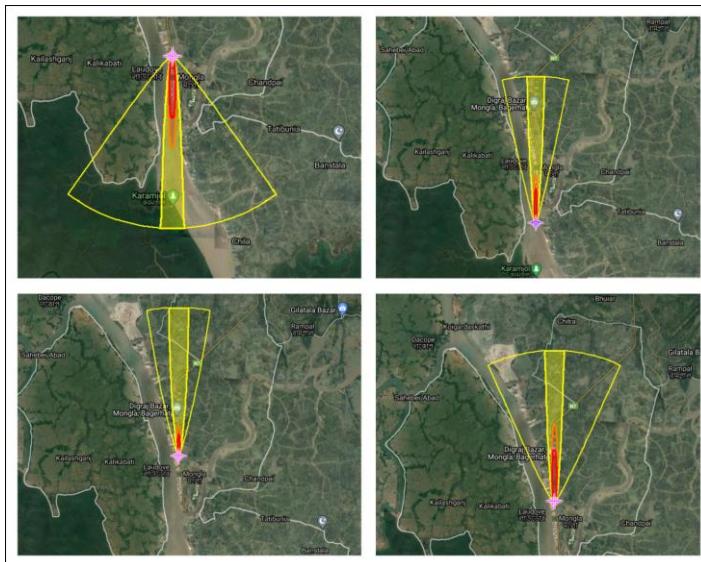
Finally, the effects of temperature, humidity and wind speed on the threat zones have been analyzed for further analysis.

## Results & Discussions

### Threat Zones Superimposed on Google Earth

ALOHA was used to estimate the LOCs associated with the model. Using Google Earth, the outputs of the threat zones were then placed on the map. There are plots in Figure 1 depicting the potential threat zones for the discharge of hydrogen sulfide.

	ALOHA Threat Zone 0.51 ppm = AEGL-1 (60 min)
	ALOHA Threat Zone 27 ppm = AEGL-2 (60 min)
	ALOHA Threat Zone 50 ppm = AEGL-3 (60 min)
	ALOHA Wind Direction Confidence Lines 0.51 ppm = AEGL-1 (60 min)



**Figure 1: Threat zones superimposed on Google Earth (Top left: winter, top right: summer, bottom left: monsoon, bottom right: autumn)**

**Threat Zone Distances on Different Seasons**

**Table-3: Threat zone distances in different seasons (Directions shown in Figure 1)**

Type	AEGL Type	Winter	Summer	Monsoon	Autumn
Threat zone (KM)	AEGL – 3	3.5	2.4	1.5	3.4
	AEGL – 2	5.3	3.3	2.1	5.1
	AEGL – 1	>10	>10	>10	>10

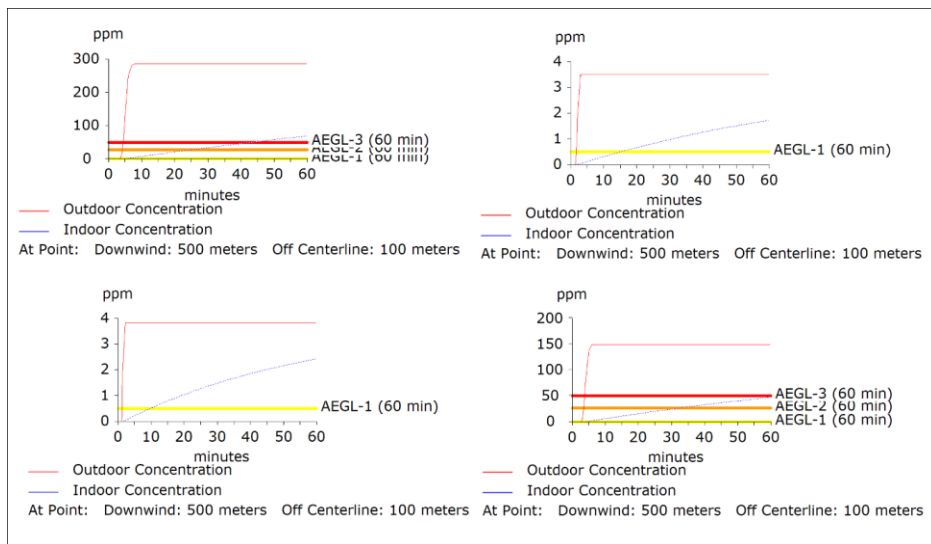
**Affected Area**

**Table-4: Affected area due to H<sub>2</sub>S leakage.**

Type	AEGL Type	Winter	Summer	Monsoon	Autumn
Affected area (sq miles)	AEGL – 3	0.39	0.126	0.069	0.333
	AEGL – 2	0.69	0.228	0.127	0.6
	AEGL – 1	3.69	3.06	3.61	3.43

From figure 1, table 3 and table 4, it is observed that during winter, the threat zone and affected area are the highest. Interestingly, during winter, the wind direction is to the south. In other seasons, the wind direction is quite the opposite and so the threat zone is different. Autumn conditions also showed a large affected zone similar to winter. Summer and monsoon showed smaller threat zone. It is clear that the effects are most severe during the winter and least severe during the monsoon. The reason behind this scenario is wind speed. During winter, the least wind speed is observed, and thus the threat zones become larger. In the monsoon, the wind speed becomes the highest and the opposite scenario happens.

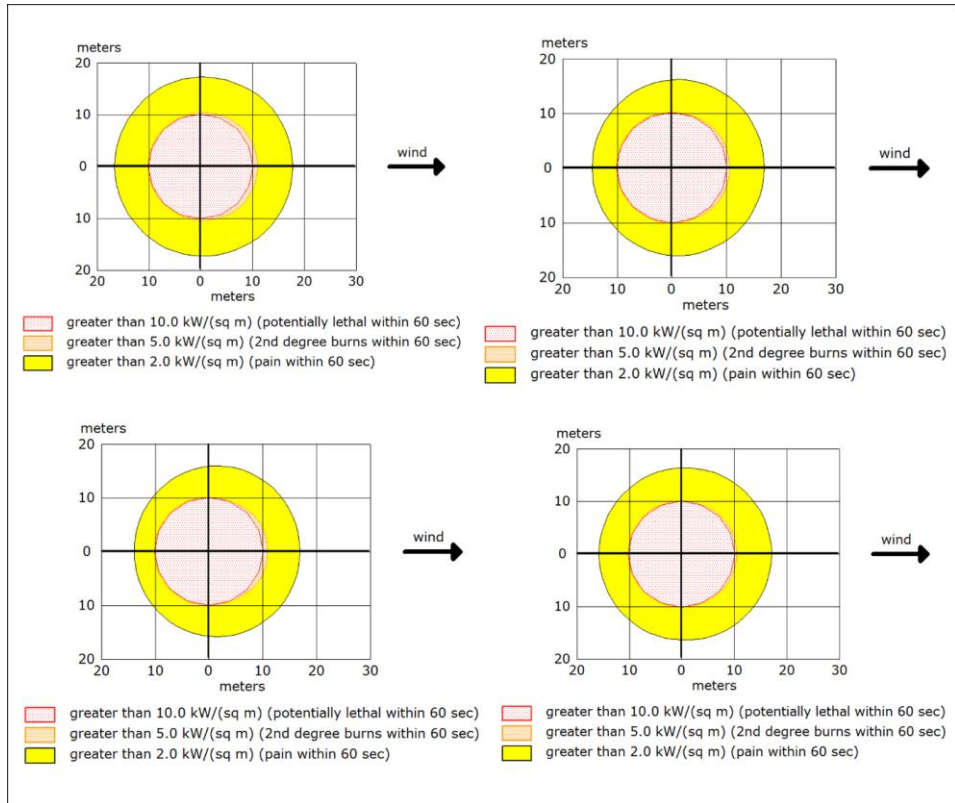
**Threat at a Point: 500 Meter Downwind, 100 Meter off Center**



**Figure 2: Threat at a point: 500 meter downwind, 100 meter off center (Top left: winter, top right: summer, bottom left: monsoon, bottom right: autumn)**

Threat at a point: 500 meters downwind, 100 meter off center has been modeled. For hydrogen sulfide release, during winter, outdoor (285 ppm) and indoor (68.4 ppm) concentrations were both found to fall under AEGL-3 (red) as shown in Figure 2 (top left). During summer, outdoor (3.47 ppm) and indoor (1.71 ppm) concentrations were both found to fall under AEGL-1 (yellow) according to Figure 2 (top right). During the monsoon, outdoor (3.81 ppm) and indoor (2.42 ppm) concentrations were both found to fall under AEGL-1 (yellow) as shown in the figure (bottom left). During autumn, outdoor (149 ppm) and indoor (47.5 ppm) concentrations were found to fall under AEGL-3 (red) and AEGL-2 (orange), respectively (Fig 2, bottom right).

### Radiant Heat Zones



**Figure 3: Radiant heat zone for leakage of hydrogen sulfide for different seasons (Top left: winter, top right: summer, bottom left: monsoon, bottom right: autumn)**

The radiant heat zone for hydrogen sulfide was 10 meters for AEGL-3 for all four seasons. For AEGL-2, winter, summer and monsoon all have an 11-meter threat zone, and autumn conditions showed a 10-meter threat zone. For AEGL-1, winter has a radiation zone of 18 meters, whereas the other three seasons (summer, monsoon and autumn) showed a radiation zone of 17 meters.

### Effects of Temperature, Humidity and Wind Velocity on Threat Zones

It has been observed that temperature and humidity have negligible effects on hydrogen sulfide concentration and thus, on the level of hazard.

However, wind speed plays a vital role. Keeping humidity at 50% and temperature at 300 C, the wind speed is varied and the changes of threat zones have been observed.

**Table-5: Spread of thread zones with change in wind speed**

Wind speed (m/s)		2 m/s	3 m/s	4 m/s	5 m/s	6 m/s	7 m/s	8 m/s
Threat Zones (km)	AEGL-3	3.1	2.9	2.6	2.3	1.6	1.4	1.2
	AEGL-2	4.6	4.2	3.6	3.3	2.2	2	1.7
	AEGL-1	>10	>10	>10	>10	>10	>10	>10

As the speed of the wind increases, the poisonous cloud disperses more quickly across a greater region and results in a smaller area of intense concentration. This reduces the hazard zone from the source as the wind speeds increase (Liao et al., 2018).

## Conclusion

As Bangladesh's population density is tremendous, there are land shortages. As a result, numerous chemical industries, such as petroleum refineries, are located close to residential areas. There might be risk or accidents might occur even if the factories are located outside of the city zone or dense populations surrounding central districts. If a hazardous gas leak or release occurs, it may pose a major threat to human lives near the occurrence. Accidental release and the related threat zone of hydrogen sulfide, a common chemical found in petroleum refineries, were modeled using the ALOHA software in this study. Four different seasons' climate conditions were investigated, and threat zones were simulated for each of them. Environmental characteristics such as temperature, humidity, wind speed, and direction were also studied in relation to the threat zone and affected area. Winter and autumn have higher risks and a larger threat zone than the other two seasons, according to research. The threat zone was slightly reduced as the wind speed got increased. This model can be used to plan ahead of time for any potential threat. The models may be greatly improved in several respects, such as estimating the number of residents if an accurate population map for the surrounding areas could be found.

## Acknowledgement

We are grateful to Petromax Refinery Limited, Mongla, Khulna, Bangladesh for the data and support provided by them.

## References

- Chambers, T. & Johnson, J. (2009) 'Environmental mitigation monitoring: Hydrogen Sulfide (H<sub>2</sub>S) gas dispersion potentials & release scenarios for Pacific OCS Region Oil & Gas Platforms & Pipelines Located in the Santa Barbara Channel and Santa Maria Basin, California', *MMS OCS Report*, vol. 21, p. 62, U.S. Department of Interior Minerals Management Service, USA.
- Chang, J., Tsubaki, N. & Fujimoto, K. (2001) 'Elemental sulfur as an effective promoter for the catalytic hydrocracking of Arabian vacuum residue', *Fuel*, vol. 80, no. 11, pp. 1639-1643, Elsevier BV, NX Amsterdam, The Netherlands.
- Frish, M., Wainner, R., Green, B., Laderer, M. & Allen, M. (2005) 'Standoff gas leak detectors based on tunable diode laser absorption spectroscopy', in *Infrared to Terahertz Technologies for Health and the Environment*, vol. 6010, International Society for Optics and Photonics, Boston MA, USA.
- Green, F., Schurch, S., Desanctis, G., Wallace, J., Cheng, S. & Prior, M. (1991) 'Effects of Hydrogen Sulfide exposure on surface properties of lung surfactant', *Journal of Applied Physiology*, vol. 70, pp. 1943-1949, American Physiological Society, Rockville, MD, USA.
- Islam, M. T., Shahir, S., Uddin, T. I. & Saifullah, A. (2014) 'Current energy scenario and future prospect of renewable energy in Bangladesh', *Renewable and Sustainable Energy Reviews*, vol. 39, pp. 1074-1088, Elsevier, NX Amsterdam, The Netherlands.
- Jafarinejad, S. (2016) 'Control and treatment of sulfur compounds specially sulfur oxides (SO<sub>x</sub>) emissions from the petroleum industry: a review', *Chemistry International*, vol. 2, pp. 242-253, IUPAC, NC, USA.
- Jäppinen, P., Vilkkä, V., Marttila, O. & Haahtela, T. (1990) 'Exposure to Hydrogen Sulphide and respiratory function', *Occupational and Environmental Medicine*, vol. 47, pp. 824-828, British Journal of Industrial Medicine, London, United Kingdom.
- Khan, A., Yong, S., Prior, M. & Lillie, L. (1991) 'Cytotoxic effects of Hydrogen Sulfide on pulmonary alveolar macrophages in rats', *Journal of toxicology and environmental health*, vol. 33, pp. 57-64, Taylor & Francis, Oxfordshire, United Kingdom.

Khatun, M., Rashid, M. & Hygen, H. (2016) 'Climate of Bangladesh, MET Report', *Bangladesh Meteorological Department and Norwegian Meteorological Institute*, Blindern, Norway.

Liao, N., Huang, K., Chen, L., Wang, Z., Wu, J. & Zhang, F. (2018) 'Numerical simulation of gas dispersion during cold venting of natural gas pipelines', *Advances in Mechanical Engineering*, vol. 10, no. 2, ISSN: 1687-8132, Sage Publishing, London, UK.

Macewen, J. & Vernot, E. (1972) 'Toxic hazards research unit annual report: 1972', *Wright Patterson Air Force Base, OH: Air Force Systems Command, Aerospace Medical Division, Aerospace Medical Research Laboratory Report*, Aerospace Medical Research Laboratory, USA.

Manual, U. S. (2007) *ALOHA®*, U.S. Environmental Protection Agency, Washington, DC.

National Research Council (2003) *Acute Exposure Guideline Levels for Selected Airborne Chemicals*, vol. 3, The National Academies Press, Washington, DC.

Rubright, S. L. M., Pearce, L. L. & Peterson, J. (2017) 'Environmental toxicology of hydrogen sulfide', *Nitric oxide: biology and chemistry*, vol. 71, p. 1, Elsevier, NX Amsterdam, The Netherlands.

Shivanthan, M. C., Perera, H., Jayasinghe, S., Karunanayake, P., Chang, T., Ruwanpathirana, S., Jayasinghe, N., Desilva, Y. & Jayaweera Bandara, D. (2013) 'Hydrogen Sulphide inhalational toxicity at a petroleum refinery in Sri Lanka: a case series of seven survivors following an industrial accident and a brief review of medical literature', *Journal of occupational medicine and toxicology*, vol. 8, pp. 1-5, Biomed Central Ltd., London, UK.

Siddiki, S. Y. A. & Ahmed, M. G. T. (2020) 'Simulation and risk analysis of the accidental release of toxic gas from an industrial complex', *International Conference on Mechanical, Industrial and Energy Engineering 2020*, 19-21 December, 2020, Khulna. Faculty of Mechanical Engineering, KUET, Khulna, Bangladesh.

# Readers' Preference for the Online and Offline Newspaper: A Case Study on University Students

Prashanta Kumar Shill<sup>1</sup>

**Abstract:** Critical understandings of scholars are enhanced by the habit of newspaper reading. Reading a newspaper regularly is important for students. This study aims to find out the preferences of readers between online and offline newspapers and relate it with the uses and gratification theory. In today's world, a newspaper does not only mean a printed copy it becomes a digital version via the internet. Students are kept updated with the newest news by the newspaper. To remain abreast with the newest happenings around the globe, newspapers are proven to be an efficient source. As students are long-term rustic, they ought to remember the incidents happening in-country. The study underlines the growing importance of newspapers as the best medium of collecting news for university students and also confirms the potential use of newspapers mostly for educational and other information purposes. This study is based on qualitative analysis and data was collected from the students of Port City International University, Bangladesh. The advent of Information and Communication Technology (ICT) has revolutionized the life of humans. With the emergence of new technologies in newspaper publishers are fast moving onto the online platform to effectively reach remote users and people are also quickly following the trend. Particularly, the web has changed how people seek information to satisfy their needs. This provides them with high general knowledge. It increases the stock of words in them.

**Keywords:** ICT, Internet, Online newspaper, Offline newspaper, Revolution of the newspaper

## Introduction

The newspaper may be a paper that carries news and views of home and abroad. Newspapers may be a storehouse of current information and a treasure of data associated with personal and social, native, and global issues. A newspaper is a periodic publication that usually contains textual information about current events and is printed in black ink on a white or gray backdrop. Newspapers are frequently a useful tool for building the necessary interest in reading (Mangal, 2009). Newspapers are regarded as a self-help tool in schooling. Opinion columns, weather predictions, reviews of local services, obituaries, birth notices, crossword puzzles, editorial cartoons, comic strips, and advice columns are all common features in newspapers. Most newspapers are businesses that rely on a combination of subscription money, newsstand sales, and advertising revenue to cover their costs. Newspapers are often referred to as

---

<sup>1</sup> Senior Lecturer, Department of Journalism and Media Studies, Port City International University, Chattogram, Bangladesh. Email: vprashantcu@gmail.com



"newspapers" by the media organizations that print them. Print newspapers have been around for a long time (usually on cheap, low-grade paper called newsprint). Today, however, most newspapers are also published on websites, such as online newspapers, and a handful has completely abandoned their print editions.

### **A Brief History of Newspapers**

With a history spanning almost 500 years, newspapers represent a dramatic part of human existence. Wars, economic conditions, social mores, and "human interest" qualities were all discussed in these handwritten newsletters that circulated secretly among Renaissance Europe's merchant class. News pamphlets and broadsides, the earliest incarnations of the modern newspaper, initially emerged in Germany in the late 1400s, and their content was often sensationalized. They include accounts of the brutality committed by Vlad Tsepes Drakul, the veovod who would eventually be known as Count Dracula, against Germans in Transylvania. In the Anglophone world, corantos, brief news booklets printed only when an important event occurred, were the forerunners of the modern newspaper. The Weekly News, first published in 1622, was the first title to appear in a series. In the 1640s and 1650s, a multitude of other volumes appeared in the same newsbook style. The London Gazette, published in 1666, was the first authentic English-language newspaper. Though many periodicals appeared in print before the turn of the century, for a generation this journal held the exclusive right to publish with official authorization.

Exactly where the first printing press in Bangladesh was put up is unknown. It is believed that the first printing press in Bangladesh was established in the city of Rangpur in the year 1847. The weekly newspaper Rangapur Bartabaha was the first thing printed at this facility in August 1847. Moreover, Rangpur was home to the first two weekly Bengali publications. It took more than sixty years for printing machines to make their way from Kolkata to East Bengal or Dhaka. In 1856, Dhaka was where the first English-language weekly newspaper, The Dacca News, was printed and distributed. After nine years, Dhaka finally got its first printing press, and it was appropriately named "Bangla Press."

### **Growth of Newspapers in Bangladesh and the Emergence of Online News Media**

Global distance has been removed. The world has become smaller. One part of the planet has been linked up with another through the newspaper. The newspaper is of great use to us. It serves the aim of individuals of various sections. We get all sorts of information in the newspapers. We know through them what is going on in the world around us. They give us

news about politics, economics, culture, literature, games, and sports of the entire world. Newspapers are very useful to us. Without a newspaper, we cannot even think of our own life.

An offline newspaper refers to a printed copy of a newspaper. From the very early period printed newspapers regard as a newspaper but at present newspapers are also available on online platforms. An online newspaper that the online version of a newspaper, either as a stand-alone publication or because of the online version of a printed periodical. Through their online presence, newspapers have been able to expand their opportunities, such as competing with television journalism in the timely delivery of breaking news. Getting rid of the need for printing could also save money.

During the last three decades, the Bangladeshi media landscape has raised dramatically and significantly in size and variety. The rejuvenation of the news media in Bangladesh has been seen after the reemergence of democracy in 1990. With the deregulation of press laws and the onset of the market liberalization policy, Bangladesh witnessed unprecedented growth and expansion of mass media since the 1990s, and scholars (Rahman et al., 2016) called it a ‘quantum leap’ within the media sector. Television is far and away from the foremost important media to Bangladeshi study of what's happening within the country (84%), while newspapers are cited by 1 / 4 (25%) as a second-choice source of information (The Asia Foundation, 2021). There are 1277 registered news in our country (dfp.gov.bd). Apart from the three state-owned terrestrial television channels, the government so far has permitted 45 television channels and 30 of them are already in operation. Eleven of the remaining channels have yet to be aired, while four have yet to receive frequency allocations (Dhaka Tribune, 2021). The state-owned radio network, Bangladesh Betar, now has 15 broadcasting stations and six relay stations (Bangladesh Betar, 2021) which cover almost the entire country (BBC, 2021). Bangladesh government has licensed 28 private FM radio channels and 18 community radio stations are on-air in the country, another 14 community radio will start broadcasting very soon (BNNRC, 2020). As of March 2020, the number of mobile phone subscribers is 165.337 million and the total number of internet subscribers has reached 103.253 million (BTRC, 2021). Due to mobile technology, an overwhelming 80 percent of internet users in Bangladesh are on social networking websites (Shams, 2017). However, more than 97% of social media users in Bangladesh are mainly using Facebook (Statcounter, 2020). There were 35.984 million Facebook users in Bangladesh in January 2020, which accounted for 21.2% of its entire population (NapoleonCat, 2020). The number of Bangladeshi websites dedicated to reporting news has popped up in recent years.

Besides, it is argued that the newspaper industry of Bangladesh is facing tons of challenges and obstacles like the closure of various newspapers, losing jobs, decreasing salaries, and so on at the time of online explosions. The statistics also show the rapid expansion of the web, mobile users, and social media consumers in Bangladesh. According to the Bangladesh Telecommunication Regulatory Commission (BTRC), the amount of internet subscribers has been 103.476 million by June 2021. Mobile subscribers reached 163 million in an equivalent period, and social media users reached 5 million in Bangladesh (BTRC, 2021). Thus, the news providers have shifted to numerous digital platforms to distribute news stories to folks that generated several news portals. More than eight thousand news portals applied for registration with the knowledge ministry of Bangladesh (bdnews24.com, 2021). Therefore, the impact of technologies on the newspaper industry in Bangladesh is being evident gradually. The landscape of present media is quite complex and changing at a rapid pace. Electronic media is gradually becoming more prevalent in our daily lives, and people are increasingly gravitating towards it. This new media is swiftly embraced by the young generation and is popularly called the net generation. This generation is quite just a demographic group. Tapscott (1998) summarized the characteristics of internet generation as follows:

1. The generation borns roughly between 1977 and 1997;
2. They emphasize the right to information and learning; and
3. They are technology savvy.

This generation of students often considers themselves to be more experts on the Internet than their parents (Livingstone et al., 2003). Because of the exponential rise of the Internet and the World Wide Web, the emergence of the net generation was natural in today's networked society (www). University students are the major shareholders of the net generation as almost all university students belong to the same age group and grow up with emerging information and communication gadgets like television, radio, cinema, electronic games, mobile phones, computers, and the Internet.

The introduction of the latest media brings intense competition between print and electronic media for capturing students' time and attention. The new players of electronic media have become time-eating machines and everyone is thrilled with each other for his or her supremacy (Loan, 2009). Therefore, it is time to update the knowledge about the time management of students. Moreover, the web is the most formidable challenge to mediums like print sources, print reading, and libraries. The researchers have discovered that use of the web sources is increasing at a rapid pace and at an equivalent rate the utilization of traditional sources is decreasing (Rogers, 2001; Pierce et al., 2009). The Bangladeshi media industry is

growing, be it print or online. The growth rate is high in comparison to other countries in Asia.

In western countries, on the other hand, statistics reveal that printed newspaper circulation is on the decline. The statistics discussed earlier present a transparent picture of the present newspaper readership in Bangladesh. Print and Digital media are major sources of information, yet it is interesting to know the preference for newspaper reading among Bangladeshi readers. This study examines the online and offline reading habits of Port City International University students in Bangladesh.

The study aims to understand the preferences, age, gender, education qualification, and income specifications of an online and offline newspaper readership. The result of this study will guide the Government and the Communication Authority in Bangladesh in formulating future policies regarding online journalism, to improve their services and be in line with audience expectations. It will greatly enhance the formation of the latest guidelines, and proposals for online media. The findings from this research will add significantly to the majority of existing scholarly knowledge in this domain and can be eminent in Bangladesh where little has been said about online journalism along with traditional newspapers.

The data of this study were collected through online using Google Forms from the students of Port City International University. The study aimed to assess online and offline news preferences. The study used 134 respondents from the students of Port City International University to generalize the result. Keeping the above discussion insight, the subsequent objectives of the study were designed.

1. To seek out the inclination of online-offline newspaper readership.
2. To examine the age specification of newspaper readers.
3. To look at the convenience of reading between online and offline newspapers among readers.
4. To examine how media choices vary among students of different genders.

### **The Uses and Gratification Theory**

The uses and gratifications theory of communication discusses how individuals make use of various forms of media to satisfy their requirements. The primary function of media for humans is the satisfaction of their desires and needs. Through their use of media, people can improve their education, interaction, relaxation, awareness, escape, and enjoyment levels. People also use media to engage in interpersonal interactions. Blumler and Katz published their theory in 1974 under the title "the Uses of Mass Communications: Current Perspectives on

Gratifications Research." The theory focuses its emphasis on the roles that individuals utilize various forms of media to play in their lives. Uses and gratification theory is a form of determinism that emphasizes all of the audience. This is despite the fact they even thought in a variety of ways and for a variety of reasons. This theory operates under the premise that there is no such thing as an unalterable reality. Because the influence that media has on an audience can be decided by the audience themselves, but there is an argument also. The idea has strong ties to human psychology, namely the study of needs, motives, and the effects of influence. Readers' preference for selecting the online or offline mode of newspaper reading is the reflection of the uses and gratification theory. The preferred online or offline mode of newspaper selection also depends on the audiences or readers. This study shows that age, gender, education overall readers' psychological needs, motives, etc. accelerate the preference for online or offline newspaper selection.

## **Materials and Methods**

### *Data and methodology:*

A questionnaire was designed to collect data from respondents concerning preferences in online-offline newspapers' reading habits. The structured survey questionnaire was designed on Google Forms and a link has been sent to the newspaper readers of PCIU students. The questionnaire included 5 questions that explored the readers' online-offline language preferences and the readers' mode of reading online-offline newspapers. The main hypothesis is to test the equality of both online and offline readers' preferences among the students of PCIU. This study also examines the hypothesis that: All age groups had equal alacrity to news reading online or offline. Besides, it emphasizes the hypothesis that all genders equally participate in reading news or not and also educational qualifications for the preferences of online and offline newspapers or both. For the statistical analyses, chi-square was employed to find out the significance of the difference between age, gender, and educational qualification concerning preferences in media and mode of selection. The Chi-square test was applied, as the data is discrete and non-parametric. Besides, the study describes the sample findings and is non-inferential.

### *Hypotheses:*

- There is a significant difference between the age of the respondent and the mode of newspaper reading.
- There is a significant difference between the gender of the respondent and the mode of newspaper reading.

- There is a significant difference between the educational backgrounds of the respondent and the mode of newspaper reading.

#### *Data collection procedures:*

There is one category of knowledge collection; primary data. Primary data is collected for a specific purpose by the researcher and it is mainly gathered through questionnaires. This study uses a structured questionnaire as its survey instrument. A self-administered questionnaire is used to enhance frank responses from respondents. Self-administered questionnaires ensure that responders are not under any obligation to impress the researcher. Questionnaires help researchers save time and money. Furthermore, surveys are customizable and can be used to reduce bias. The non-probability sampling technique known as "purposive sampling," is used to select the variables for the sample population at their discretion. Researchers using purposeful sampling (also called judgmental, selective, or subjective sampling) choose survey respondents at random from the population rather than rely on statistical chance (Nikolopoulou, 2021). There are two primary parts to this survey. Part I focuses on foundational knowledge and Part II discusses the various channels via which people get their news. An organized survey questionnaire was created through Google Forms and shared with PCIU students. 142 students responded to the survey, but only 134 were included in the analysis since 8 of the Google forms were incomplete so these are rejected. There was no recollection bias and minimal selection bias because respondents provided their information voluntarily.

#### *Variables description:*

In the study variables related to the headings were collected, so that maximum information may be revealed. I arranged the questionnaire in such a way that demographic factors and related variables did not overlap. Age, sex, income, and occupation were defined as demographic variables, and regular reading habits, medium of excess, and, time spend in both manners were prime variables.

#### *Data presentation and analysis:*

Data analysis is the process of systematically searching and arranging data and other materials from the field to obtain answers to research questions. Data analysis involved checking the research instrument to ensure completeness and error-free. The data is then organized into categories based on the study questions. By arranging all of the data according to the aims of the instruments utilized, data is categorized into themes. The

information gathered from surveys is scrutinized to see if it answers the study questions. This study has only qualitative data which is the measure of values in terms of how much or how often. Qualitative data analysis involves the identification, examination, and interpretation of patterns and themes in textual data and determines how these patterns and themes help to answer the research questions at hand.

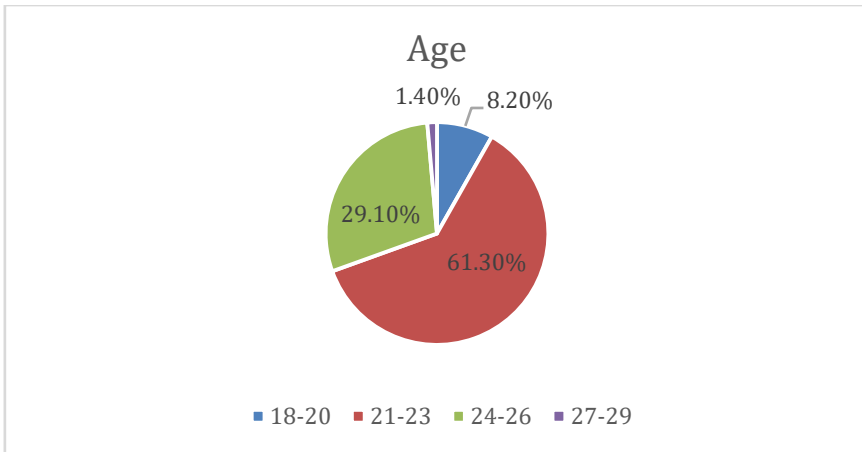
## Results and Discussion

This chapter provides data analysis and a presentation of the results of the study as set out in the research methodology. The overall objective of this study was to investigate the impact of online media on traditional news. The findings of this study are presented in tables and figures.

**Table-1: Sample Profile**

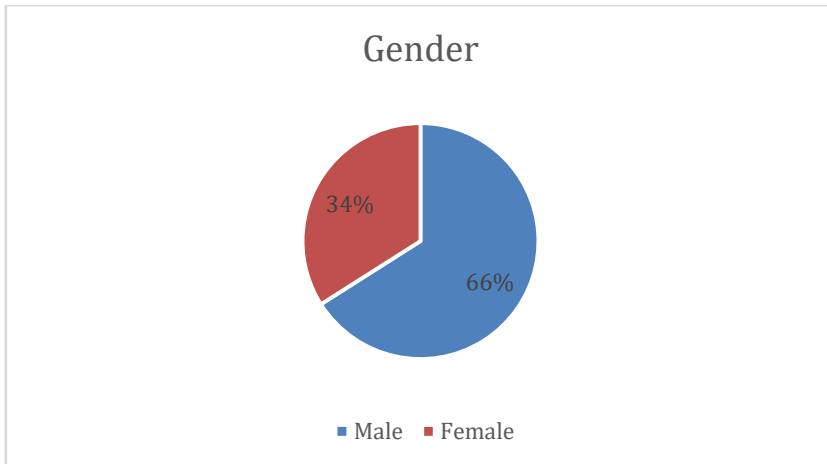
<b>Demographic Variable</b>	<b>Classification</b>	<b>No. of Respondent</b>	<b>Percentage</b>
Age	18-20	11	8.2%
	21-23	83	61.30%
	24-26	38	29.10%
	27-29	2	1.4%
Gender	Male	88	66%
	Female	46	34%
Income	None	82	61.2%
	<10000	31	23.2%
	>10000	21	15.7%
Education	Graduate	85	63.80%
	Post Graduate	49	36.21%

A total sample of 134 respondents was used for the study. Table 1 reveals that out of 134 respondents, 8.2% belong to the age group of 18-20, 61.30% are in the age group of 21-23, followed by 29.10% from the 24-26 age group, and 1.4% from the 27-29 age group. There are 66% of male and 34% female respondents. The table also revealed that 36.21% are post-graduates, 63.80% of the respondents are graduates. Income data showed that 61.2% of respondents don't have any source of income they depend on their families. 23.2% of respondents earn less than 100 and 00, and 15.7% of respondents earn more than 10000.



**Fig 1: Responses against the query of reading newspaper based on age**

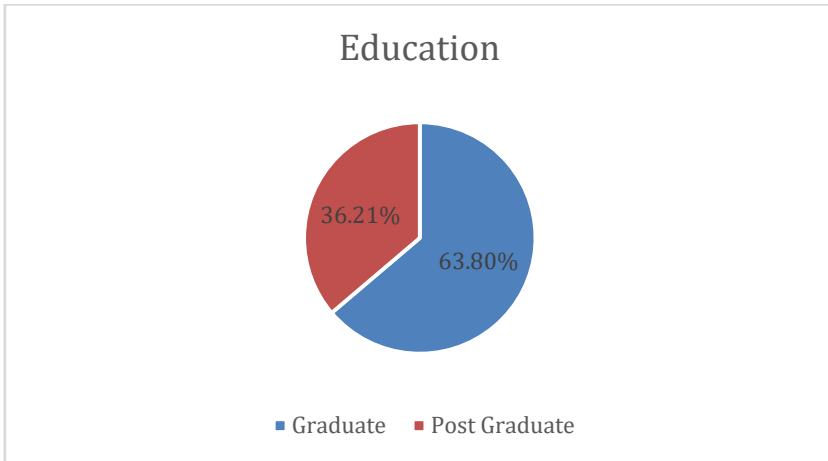
Here Fig 1 represents the result of the sample collection that how many people respond according to age classification on the topic that the impact of online-offline media on traditional news. 8.20% belong to the age group 18-20, 61.30% to groups 21-23, further 29.10% belong to the age group 24-26, and only 1.40% of people from group 27-29. These represent that people aged between 21-23 prefer to read online newspapers highly and people aged between 27-29 prefer online newspapers less.



**Fig 2: Responses against the query for the gender of the readers**

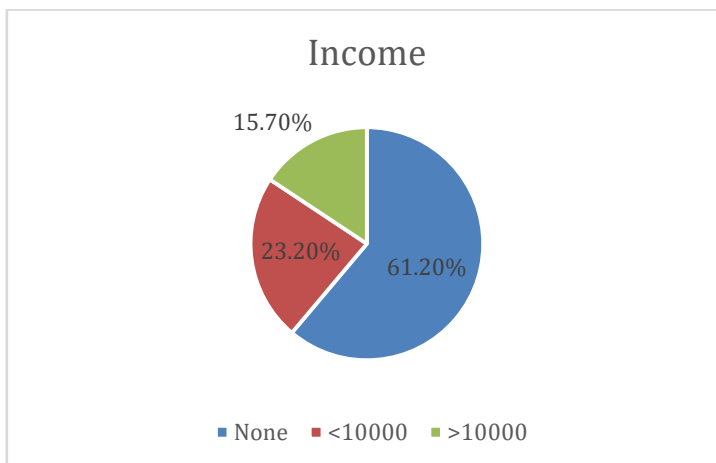


Fig 2 shows that 66% of people belong to males and 34% of people belong to females. That says that males are more attached to the online mode of newspapers.



**Fig 3: Responses against the query of reading newspaper based on educational qualification**

Here in fig 3, 63.80% of graduate people prefer to read news online which is higher than the percentage of post-graduate people which is only 36.21%. So, it shows that education is also an important factor that has an impact on the selection of online-offline newspapers.



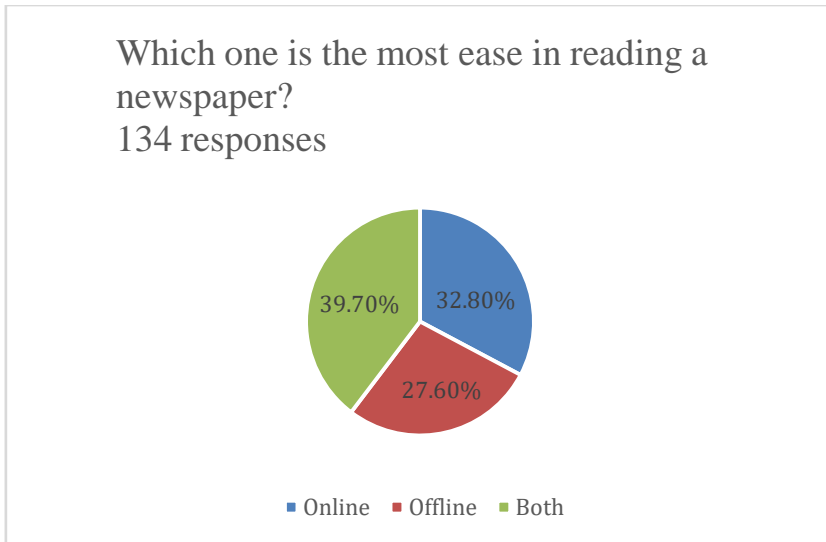
**Fig 4: Responses against the query for income**

Fig 4 shows that among the people who respond to the query on the impact of online and offline newspaper preference only 15.70% of people respond whose income is more than 10000, 23.20% of people respond whose income is less than 10000, and 61.20% of people respond who have no any income source.

### Table- 2: Questionnaire

The set of questions that were given to the students of PCIU as a google form is listed below:

Question	Options
Do you read the newspaper daily?	Yes
	No
Which one is the most ease in reading a newspaper?	Online
	Offline
	Both
Why do you prefer reading an online newspaper?	Immediately accessible and convenient
	Constant Update
	Variety of choices
	Availability at Phone
	Ease of search
	Video & Audio News
	Sharing & Downloading Option
What are the reasons for reading an offline newspaper?	Become a habit
	Prefer to read print
	It is cheap
	Status Symbol
Where do you read the newspaper online?	Laptop
	Mobile
	Desktop
	Other



**Fig 5: Responses against online, offline or both**

Here in fig 5, it is seen that 32.8% of people say that reading online newspapers is of the most ease. On the other side, 27.60% of people prefer offline newspapers and 39.70% of people prefer both online and offline modes of newspapers which is higher than the other two.

**Table 3: Which one is the ‘easiest’ in reading a newspaper? \*Age of the respondent**

			Age of the respondents				
			18-20	21-23	24-26	27-29	Total
Which one is the most ‘ease’ in reading a newspaper?	Online	Count % of Total	6 (4.47%)	29 (21.6%)	8 (5.97%)	1 (0.75%)	<b>44 (32.8%)</b>
	Offline	Count % of Total	2 (1.5%)	28 (20.8%)	7 (5.22)	0 (0%)	<b>37 (27.6%)</b>
	Both	Count % of Total	3 (2.23%)	26 (19.4%)	23 (17.16%)	1 (0.74%)	<b>53 (39.7%)</b>
<b>Total</b>		<b>Count % of Total</b>	<b>11 (8.20%)</b>	<b>83 (61.30%)</b>	<b>38 (28.35%)</b>	<b>2 (1.4%)</b>	<b>134 (100%)</b>

Table 3 revealed that 39.7% of respondents prefer to read newspapers online and offline. However, online preference is higher at 32.8% when

compared to offline reading newspaper preference at 27.6%. The younger generation is more comfortable in reading newspapers anywhere print or digital platforms. The data shows that 21.6% of 21-23 age group respondents selected both modes when compared to other age groups 18-20, 24-26, and 27-29 age group.

HO: There is no significant difference between the age of the respondent about the mode of newspaper reading.

H1: There is a significant difference between the age of the respondent about the mode of newspaper reading.

The result obtained through chi-square tests gives a significant difference in age and mode of reading newspapers. The calculated chi-square value is 12.45 at 6df. The critical value at the .05p alpha level for 6df is 12.59p. The calculated value is slightly less than the value of .05p. Hence, the null hypothesis is rejected and accepted the alternative hypothesis.

**Table-4: Which one is the ‘easiest’ in reading a newspaper? \*Gender of the respondents**

			Gender of the respondent		Total
			Male	Female	
Which one is the most ‘ease’ in reading a newspaper?	Online	Count % of Total	14 (10.8%)	30 (22%)	<b>44</b> <b>(32.8%)</b>
	Offline	Count % of Total	35 (25.5%)	2 (2.1%)	<b>37</b> <b>(27.6%)</b>
	Both	Count % of Total	39 (29.7%)	14 (10%)	<b>53</b> <b>(39.7%)</b>
<b>Total</b>		<b>Count % of Total</b>	<b>88</b> <b>(66%)</b>	<b>46</b> <b>(34%)</b>	<b>134</b> <b>(100%)</b>

Table 4 shows that 22% of female respondents choose to read online rather than in read offline. Male respondents 29.7% are more comfortable in reading newspapers on both platforms. However, 10% of female respondents preferred to read news online and offline.

HO: There is no significant difference between the gender of the respondent about the mode of newspaper reading.

H1: There is a significant difference between the gender of the respondent about the mode of newspaper reading.

The calculated chi-square value is 5.14 at 2df. The table critical value at the .05p alpha level for 2df is 5.99p. The calculated value is below the value of .05p. Hence, the null hypothesis is rejected, and accepted the alternative hypothesis.

**Table 5: Which one is the ‘easiest’ in reading a newspaper?  
\* Educational Qualification**

			<b>Educational Qualification</b>		<b>Total</b>
			Graduate	Post-Graduate	
	Online	Count % of Total	15 (10.8%)	29 (22%)	<b>44 (32.8%)</b>
Which one is the most ‘ease’ in reading a newspaper?	Offline	Count % of Total	32 (24%)	5 (3.6%)	<b>37 (27.6%)</b>
	Both	Count % of Total	38 (29%)	15 (10.7%)	<b>53 (39.7%)</b>
<b>Total</b>		<b>Count % of Total</b>	<b>85 (63.8%)</b>	<b>49 (36.21%)</b>	<b>134 (100%)</b>

Based on education qualification, table 5 reveals that 36.21% of respondents are post-graduates and 10.7% are interested in both online-offline modes of reading newspapers. 10.8% of graduate respondents prefer to read online, and 24% were interested in reading the news at offline.

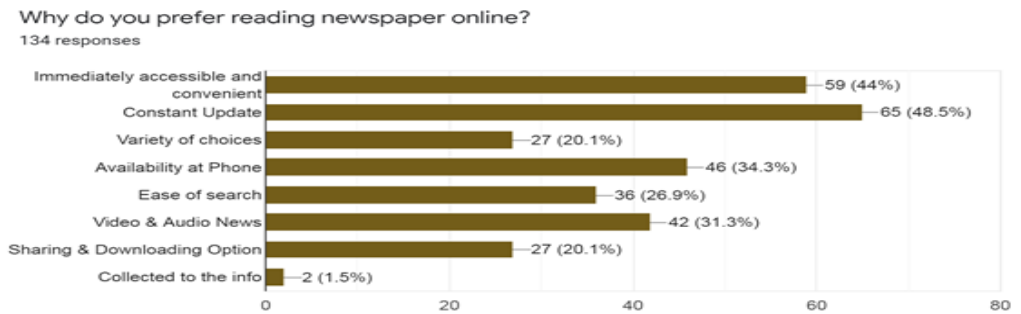
HO: There is no significant difference between the educational backgrounds of the respondent about the mode of newspaper reading.

H1: There is a significant difference between the educational backgrounds of the respondent regarding the mode of newspaper reading.

The calculated chi-square value is 12 at 6df. The table critical value at the .05p alpha level for 6df is 12.59p. The calculated value is far below the value of .05p. Hence, the null hypothesis is rejected, and accepted the alternative hypothesis.

A graphic presentation below is chosen to display the response to this particular question which has a list of benefits in reading online newspapers including- Immediately accessible and convenience, Constant Updates, Variety of choices, Availability on the Phone, Ease of search, Video & Audio News, Sharing & Downloading Option and Comment and Replay to Particular News.

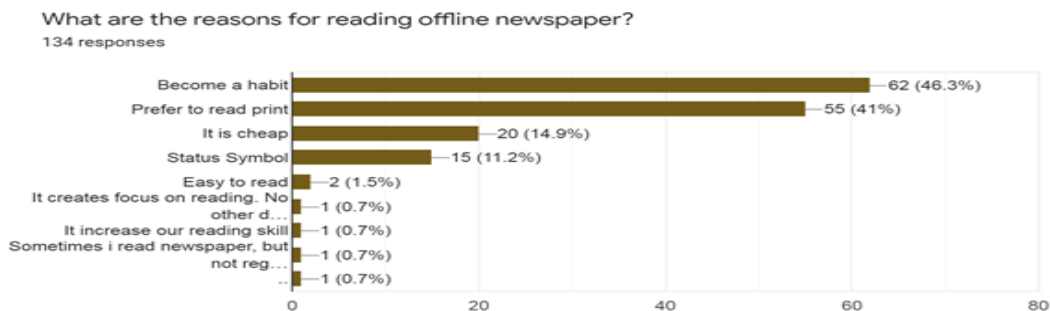
**6. Responses against the query for the preferences of reading the newspaper online rather than offline**



**Fig 6: Query for the preferences of reading a newspaper online rather than offline**

In response to the question of the reasons for the preferences of the respondents regarding reading more online newspapers than offline were mostly the constant updates and immediate access and convenience of online portals. However, people also considered the availability of newspapers on phones, both video and audio news, easier searching systems, sharing and downloading feasibility, varietal choices, and information collection facilities as shown in Figure 6.

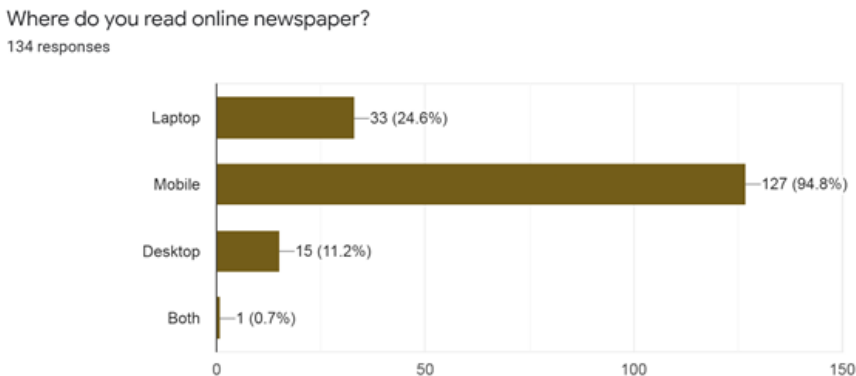
**7. Responses against the query for the preferences of reading newspapers offline rather than online**



**Fig 7: Query for the preferences of reading newspapers offline rather than online**

Most people prefer reading offline newspapers as a habit according to the responses of the respondents surveyed for the reasons for reading offline newspapers in Figure 7. However, around 46% of respondents read offline newspapers as a habit, 41% prefer to read printed news, about 15% consider this news system as cheaper and about 11% consider offline newspapers as a status symbol. The rest of the people prefer to read newspapers offline due to the ease of reading, developing their focus on reading, and increasing reading skills and some prefer to read irregularly.

**8. Preferences of devices for reading online newspaper**



**Fig 8: Preferences of devices for reading online newspaper**

On percentage, as show in figure 8 around 95% of people prefer mobile devices for reading online newspapers while around 25% of people use

laptops and around 11% use desktops and the rest of the respondents use both mobiles, laptops, and desktops.

According to reports, the newspaper industry is facing its most difficult period in history, especially since the Internet began to deliver online features and possibilities well beyond what the newspaper could provide: instant and free news, interactive and multimedia features, and straightforward accessibility through very simple handheld technologies like mobile phones and private computers. Internet news publication is additionally simpler and cheaper. With these attributes, therefore, Varian, (2013) sees the Internet as evidently a superior way to distribute and read the news. However, by astronomically increasing news sources, the web inadvertently threatened the newspaper's traditional stronghold in the news business. It was in an attempt to tap into the Internet's huge resources, that newspapers joined other mass media to also deliver their content digitally.

Various authorities validate the above findings. Opgenhaffen et al., 2011 for instance, confirm that online newspapers "make use of multimedia features (e.g., video, audio, and pictures) and interactivity" which is the "ability for readers to more easily interact with and answer online news stories through reader forums, ratings, and reader-uploaded content" (Pavlik et al., 2000). "Online newspapers also can hyperlink or connect to other related content" (Pavlik et al., 2000). Online newspapers have unlimited space, which enables them to cover as many or as few articles as they choose, and as in-depth as they want, plus the ability to more easily locate information in them than in print (Williams et al., 1998). News events are frequently available within seconds after their occurrence. Readers crave Internet news, free news, quick news, and interactivity because these appealing qualities are not available in print (Sternvik et al., 2008).

The purpose of the question was to determine which of the online and offline publications was the most popular among readers. Findings indicate that although both versions of newspapers share a significant number of readers, online newspaper has a greater share of readership. In addition, as shown, the majority reported that they read online newspapers. This supports the (Ahlers, 2006) theory that there is no one-size-fits-all news consumption pattern, but rather a wide range of news-consuming habits. Some people will just use the internet for news, while



others will never quit conventional news sources. While some users will be light users of all media, others may embrace all media and be multichannel news consumers. Corroborating (Ahlers, 2006; Talabi, forthcoming) observes that not everyone is connected or online compliant, and that among those who are, they are vastly connected with different skills. But for Abdulraheem et al., 2012 and Uwosomah, 2010 in Bangladesh, new media technologies have not yet reached their full potential. This highlights the laggards and non-adopters discovered by Rogers. Some responders may not have accepted or had access to online publications up to this point. Meanwhile, Talabi, (forthcoming) reports that the hardcopy newspaper still enjoys readership among very many Bangladeshies, even though its future is uncertain as the online version continues to grow.

Gender is another factor. Women do not read print newspapers as much as men do. Men dominated as the ones who read offline and online study too found that newspaper reading is still largely a male business, whether hardcopy or online. Income was found to be negligible since many people, irrespective of income, own mobile devices, with many taking to browsing with their mobile phones as a hobby, and or to show they're being part of the current trend or what some scholars call the online or net generation (Tapscott, 1998; Livingstone et al., 2003). In this way, they read the news online. However, access to the new media and work environment was found to be instrumental to content or medium preference.

## **Conclusion**

Emerging realities within the media business, especially the newspaper, show that the paradigm is shifting. With the coming of the online newspaper, the offline newspaper seems to be losing its hegemony. Although both versions of newspapers still possess unique features or attributes which endear them to their respective readers, both appear to complement each other in Chattogram. However, as more readers appear to go online, and offline still grace the newsstands daily questions about the role of content as a determinant of newspaper choice naturally arises, especially now that publishers earnestly seek a better business model to save the already troubled print industry. In this regard, while preferred content slightly differs across the board, for many, content does not necessarily determine whether they read online or hardcopy, rather, availability and certain demographic and psychographic factors do. The

results show that, at least for the time being, the predicted movement of readers from offline to online newspapers has not occurred in a way that might be described as devastating for the offline newspaper. Again, even though the online version may have a little advantage over the hardcopy version, a small percentage of readers will always choose hardcopy newspapers. Therefore, it may continue to be a combination of print and online journalism for the foreseeable future, with online possibly replacing offline with time.

## References

Abdulraheem, M. Adisa, R. M. & La'aro, A. O. (2012) "The information technology revolution and the future of print media in Nigeria: Usage across age groups," *Advances in Management*, vol.10, no.1, pp. 5-7, viewed 6 December 2021 <https://www.academia.edu/4113805>

Ahlers, D. (2006) "News consumption and the new electronic media," *Harvard International Journal of Press/Politics*, vol. 1, no. 1, pp. 29-52, viewed 15 January 2022, [https://shorensteincenter.org/wp-content/uploads/2012/03/r26\\_ahlers.pdf](https://shorensteincenter.org/wp-content/uploads/2012/03/r26_ahlers.pdf)

BNNRC (2020) Bangladesh Going to Observe 9th UN World Radio Day 2020. Retrieved February 07, 2020. From Bangladesh NGOs Network for Radio and Communication (BNNRC): <https://bnnrc.net/bangladesh-going-to-observe-9th-un-world-radio-day-2020/>

Bangladesh Betar (2021, October 15). Annual report 2020-2021, viewed February 07, 2022, from Bangladesh Betar: <http://betar.portal.gov.bd>

Department of Films and Publications (21 January 2021) Newspaper circulation number and advertisement rates, viewed 5 February 2022. From Department of Films and Publications.

Hossein, M. S. (n.d.) Bangladesh Online Newspapers and Media Industries Crossing the World Records, Online Bangla Newspaper List, viewed 12 December 2021. [http://onlinebanglanewspaperlist.com/article\\_details.php?id=18](http://onlinebanglanewspaperlist.com/article_details.php?id=18)

Livingstone, S. & Bober, M. (2003) UK Children go online: Listening to young people's experiences. *London School of Economics and Political Science*, London, UK, vol. 7, pp. 21-27. <http://eprints.lse.ac.uk/id/eprint/388>

Loan, F.A. (forthcoming) Impact of new technology on reading habits: A glimpse on world literature. In: Role of school libraries in quality

education, Proceeding of a national seminar held at India, National Council of Education Research and Training, New Delhi: pp. 212-217. <http://hdl.handle.net/10760/20084>

Mangal. S. K. & Mangal U. (2009). *Essentials Of Educational Technology*, PHI Learning Pvt. Ltd, India, pp. 222-227.

Napoleon Cat. (2020) Facebook users in Bangladesh, viewed: 8 February 2022, <https://napoleoncat.com/stats/facebook-users-in-bangladesh/2020/01>  
Opghaffen, M. & d'Haenens, L. (2011) “The impact of online news features on learning from the news: A knowledge experiment,” *International Journal of Internet Science*, vol, 6 no. 1, pp. 8-28. <https://www.researchgate.net/publication/235436075>

Pavlik, J. V. & Ross, S. S. (2000). “Journalism online: exploring the impact of new media on news and society,” *Understanding the Web-Social, Political, and Economic Dimensions of the Internet*.

Pierce, J. & Boekelheide, A. (2009) An annual internet survey by the center for digital future finds large increases in the use of online newspapers. available:[http://www.digitalcenter.org/pdf/2009\\_Digital\\_Future\\_Project\\_Release\\_Highlights.pdf](http://www.digitalcenter.org/pdf/2009_Digital_Future_Project_Release_Highlights.pdf), 29, 2009.

Riaz, A. & Rahman, M. S. (eds.) (2016) *Routledge Handbook of Contemporary Bangladesh*, Routledge, pp. 325- 339.

Rogers, S. A. (2001) “Electronic journal usage at Ohio State University,” *College & Research Libraries*, vol. 62 no.1, pp. 25-34.

Statcounter (2020) Social Media Stats Bangladesh (Jan 2019 - Jan 2020), viewed 8 February 2022, <https://gs.statcounter.com/social-media-stats/all/bangladesh>

Shams, S. R. (2017) Social media trends usages in Bangladesh, viewed: 8 February 2022, <https://dailyasianage.com/news/46958/social-media-trends-usages-inbangladesh>

Sternvik, J., Wadbring, I. & Weibull, L. (2008) Newspaper in a media changing world: a Swedish trend. The newspaper research program, *Department of Journalism and Mass Communication, University of Göteborg*.

Talabi, F.O. (forthcoming) Influence of online edition on newspaper readership in South-Western Nigeria.

Tapscott, D. (1998) “Growing up digital the rise of the net generation,” *Education and Information Technologies*, vol. 4, no. 2, pp. 203-205, San Francisco: McGraw-Hill Companies, viewed 12 February 2022. [www.growingupdigital.com](http://www.growingupdigital.com)

Uwosomah, A. (2010) The vibrancy of Nigeria newspaper industry: why newspaper business still booms even with low audience readership and subscription. <http://www.slideshare.net/austenonereader/occupational-hazards-of-journalists-in-nigeria-4410716>

Varian, H. (2013) The economics of the newspaper business. International Journalism Festival. <http://www.journalismfestival.com/news/hal-varian-on-the-economics-of-the-newspaper-business/>

Williams, P. & Nicholas, D. (1998) The internet, a regional newspaper, and the provision of ‘value added’ information in *Aslib Proceedings*. MCB UP Ltd. vol. 50, no. 9, pp. 255-263, viewed 17 January 2021, <https://doi.org/10.1108/eb051503>

#### Websites:

- <https://bangla.bdnews24.com/> viewed: 16 January 2021.
- <http://www.dfp.gov.bd/> viewed 26 December 2021.
- <https://www.dhakatribune.com/> viewed 14 October 2021.
- <http://www.btrc.gov.bd/> viewed 27 October 2021.
- <https://asiafoundation.org/> viewed 10 November 2021.
- <http://www.betar.gov.bd/> viewed 22 November 2021.
- <https://www.bbc.com/bengali> viewed 22 December 2021

## Utilizing Emotional Intelligence in English Language Teaching in the Context of Bangladesh

Sayeef Ahmed<sup>1</sup>

**Abstract:** The role of emotional intelligence (EI) has little been taken into consideration in Southeast Asia as regards foreign language teaching. In a developing country like Bangladesh English is taught and learnt as a foreign language like some other countries of Southeast Asia where resource is limited, pedagogy and foreign language teachers are not up to date. Now, in the given context, the role of EI in foreign language teaching has not been thought and discussed in any considerable rate and, therefore, goes far from its implementation. This work has tried to show whether the learners of EFL in Bangladesh lack emotional intelligence. It has also argued and has tried to see whether emotional intelligence could be utilized in the context of Bangladesh in learning a foreign language like English. To find out the probable and possible lack of EI in the learners of English as a foreign language (EFL) or foreign language (FL) in Bangladesh, a case study has been conducted. This case study will also help to formulate the idea whether we can learn and utilize EI in our foreign language classes. This is basically a qualitative approach based work and qualitative data have been collected and utilized for this study. In order to obtain the data, questionnaires have been served to the stakeholders, teachers and learners. Besides, a focus group discussion (FGD) has been conducted with a focus group, the EFL learners.

**Keywords:** English language, foreign language, emotional intelligence, teaching, Bangladesh.

### Introduction

As of now, the term ‘Emotional Intelligence’ or EI has earned its position in the study of SLA or foreign language teaching and learning and has become popular among the researchers and practitioners in the language teaching field. Salovey and Mayer (1990) together coined the term ‘Emotional Intelligence’ or EI. Emotional Intelligence is the ability to recognize, understand and manage our emotions. According to Salovey and Mayer (1990), Emotional Intelligence is a kind of social intelligence that is measured by a person's ability to monitor his or her own feelings and emotions and those of others. It is the ability to discriminate among these feelings and emotions, and to use this knowledge to guide the concerned person's thought and action. This ability also affects learners' whole language learning process. This EI is measured as EQ (Emotional Quotient) as opposed to IQ (Intelligent Quotient) to determine its level in empirical study related to language acquisition and learning. However, this EQ can also be utilized by the researchers of other fields to know the level of emotional intelligence in a person to find out the person's

---

<sup>1</sup> Associate Professor, Department of English, Shahjalal University of Science and Technology, Sylhet, Bangladesh. Email: sayeef72@gmail.com

suitability in hiring for various jobs or professions. The term ‘Emotional Intelligence’ has earned its mass popularity after Goleman (1995) used the term in his book, *Emotional Intelligence*. This Emotional Intelligence bears considerable significance as regards language teaching and learning besides cognitive intelligence of learners. This work investigates the effect of EI or EQ in Foreign language teaching and learning in the context of a country like Bangladesh where English is still learnt as a foreign language and people are presumably emotionally unintelligent.

### **Review of Literature**

As Binet (1905) described cognitive intelligence as the logical and analytical ability and the capacity of using language. (Pishghadam, “A Qualitative Analysis”, p.32), we have come to conclude that this ability and capacity refer to the ability and capacity of utilizing mathematics and any problem solving power that requires logical and analytical abilities of a person in addition to a person’s natural capacity of using a language. These abilities in a combined way refer to what people generally perceive as Intelligence as such. However, the common notion or belief is that if someone has this CI, he or she has all the possibilities and chances to be successful in not only academic pursuits and language learning but also other sectors of personal life. Nevertheless, with the advent of Emotional Intelligence and its taking ground in empirical study, this common belief regarding success with the help of CI, had a reverse turn afterwards.

In the beginning of any conceivable thought regarding EI, Thorndike (1920) gave the first definition of EI as he pointed out “the ability to understand and manage men and women, boys and girls – to act wisely in human relations” (p. 228). Therefore, any primary distinct or concrete idea about EI was given by Thorndike.

Salovey and Mayer (1990) defined Emotional Intelligence as “the subset of social intelligence that involves the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them and to use this information to guide one’s feelings and actions” (p. 189). Again, Mayer and Salovey (1997) “reconstructed their model and described four hierarchical types of abilities: (a) the ability to access or generate feeling so as to facilitate thought, (b) the ability to understand emotion and emotional knowledge, (c) the ability to regulate emotions, and (d) the ability to promote emotional and intellectual growth”. (qtd. in Sucaromana, “Contribution to Language”, p. 54) In fact, Mayer and Salovey considered emotional intelligence as a factor to measure people’s intelligence as a whole (the combined form of CI and EI). Besides the Salovey and Mayer’s (1990) definition of EI, we may look at the definition given at *The Economic Times* web blog wherein it says,

“Emotional Intelligence refers to the capability of a person to manage and control his or her emotions and possess the ability to control the emotions of others as well. In other words, they can influence the emotions of other people also.” (*The Economic Times*, 2020, Definition of Emotional Intelligence Section, para.1) However, the popular author, Goleman (1995) defined emotional intelligence in the following way, “abilities such as being able to motivate oneself and persist in the face of frustration, to control impulses and delay gratification; to regulate one’s moods and keep distress from swamping the ability to think; to emphasize and to hope” (p. 34).

Furthermore, as we learn, “Wechsler (1972) examined the idea further and suggested additional forms of intelligence that complemented cognitive forms: (a) emotional, (b) personal, and (c) social”. (qtd. in Sucaromana, “Contribution to Language”, p. 54). And Gardner (1983) also viewed non-cognitive forms of intelligence as being important. (qtd. in Sucaromana, “Contribution to Language”, p. 54) From the views of the above two researchers, this can be said that though CI and EI are two distinct forms of intelligences which sometimes act as the counterpart of each other, they coexist and support each other to exist.

According to the multiple intelligences (model) theory, EI is a part of multiple intelligences and it falls in the category of social intelligence. (Gardner, 1983). To support his MI, “Gardner (1983, 1993, 1999) proposed 8 types of intelligences including spatial, musical, intrapersonal, interpersonal, bodily-kinesthetic, naturalistic, linguistic and logical-mathematical” (qtd. in Pishghadam, “A Quantitative Analysis”, p. 32). However, Gardner demanded that Intrapersonal and Interpersonal Intelligence should be considered as distinct types of intelligence. (qtd. in Pishghadam, “A Quantitative Analysis”, p. 32) To put it simply, Intrapersonal Intelligence refers to a person’s ability to understand his or her own feelings and Interpersonal Intelligence refers to a person’s ability to understand others feelings or emotional state. Therefore, it is clear from the type and nature of Intrapersonal and Interpersonal Intelligences that they are related to peoples’ behaviours and social interactions. Hence, this can be said that both Intrapersonal and Interpersonal intelligences should be renamed as Social Intelligence. However, from the definitions that we have discussed so far in this section, we can conclude that EI consists of Intrapersonal and Interpersonal intelligences.

After the introduction of Emotional Intelligence by Salovey and Mayer (1990), it was essential to invent a measurable unit of Emotional Intelligence to be available in a person which led to the coinage of EQ by Bar-On (1988). Bar-On also found EQ as representing a set of social and

emotional abilities that help individuals cope with the demands of daily life primarily.

From the above arguments and views of researchers regarding EI, we can infer that this type of intelligence is a kind of social intelligence and intelligence other than the cognitive one that refers to the capability of a person to act properly in a social context and guide his/her own emotion aptly to coexist in a social context and to extract maximum output/benefit from any interaction and social engagement. As any language learning is done in a social context and as the learning process depends on how we receive, interact and behave in a language learning class or context, EI plays the most important role in a EFL learning process.

### **The Role of IQ and EQ in Foreign and Second Language Learning**

Researches have been carried out as regards the role of EQ and foreign or second language learning and one of the notable works of this field was done by “Fahim and Pishghadam (2007), in which they explored the relationship between EQ, IQ and verbal intelligence with the academic achievement of students majoring in English language. Interestingly, they found that academic achievement was strongly associated with several dimensions of emotional intelligence (intrapersonal, stress management, and general mood competencies)” (qtd. in Pishghadam, “A Quantitative Analysis”, p. 33). And it was found that verbal intelligence is more responsible which is a subsection of IQ and which is associated with a person's knowledge and capacity of using a language and which in turn depends highly on EI since the successful use of language depends on a speaker's psychological condition or state. (Pishghadam, 2009, p. 33). Eventually, we see “Pishghadam (2009) determined the impact of emotional and verbal intelligence on the English language learning success of the students of Iran” (qtd. in Pishghadam, “A Quantitative Analysis”, p. 33). In the study he found that those who were emotionally balanced and apt in using language intelligently, were more successful in academic achievement. We may also consider the Affective Filter Hypothesis in relation to the teaching and learning process of a foreign or second language teaching or learning as it can be observed that the psyche or emotion plays a vital role in this regard in the function of Affective Filter. According to this hypothesis, when learners' fear, anxiety and boredom are high, their language learning will be obstructed and will be slow. (Krashen, 1981)

### **Training and Learning of EI**

This is a crucial question whether it is possible to learn to be emotionally intelligent or is it possible to train or teach somebody to be emotionally



intelligent? EI can be increased in individuals; it can be taught and even schooled (Elias et al., 1997). In addition, people with low EI can be educated to increase their level of EI to identify their feelings and then to express and regulate them (Mayer & Geher, 1996). Allan Mortiboys (2011) asserts, not only the learners but also the teachers need to learn how to be emotionally intelligent. In his book, Mortiboys shows how teachers and professionals in higher and further education can be taught emotional intelligence which in turn helps the learners learn better. Therefore, as we have come to know that emotional intelligence can be learnt and taught, now it is our responsibility to train both the teacher and learner to be emotionally intelligent and thereby boost up the teaching learning cycle. In this connection, the following observation of a researcher will be relevant and precise, “Moreover, English teachers are expected to be familiar with the concept, striving hard first to raise their own emotional competencies and then try to enhance the emotional intelligence of their learners” (Pishghadam, 2009, p. 39). Though substantial research has been carried out worldwide regarding the nature, importance and use of EI, little is done till date for the meaningful use of EI in foreign language learning and teaching. In recent times, it is seen that in some developed countries like USA, Canada or UK some individual researchers are working with this issue in a non-unified way; they are also giving lectures on this using popular media platforms like YouTube describing its features and possible learning outcome and benefit. Now the question is, in a country like Bangladesh how far it is possible to train people with the skill of emotional intelligence? One possible and good way and stage is to start training and learning this first at home and then at the primary and secondary level of education. Because by the time people complete their higher secondary level of education they reach their adulthood. This type of learning can take place at the later stages of one’s life. However, we know that any learning takes place in a better way at a tender age. So, at home parents or senior relatives and in school teachers can help the individuals learn how to be emotionally intelligent. About the possible and effective ways of learning emotional intelligence in a classroom setting, Reza Pishghadam (2009) suggests some techniques which are: discussion about EI among the learners, learners’ enjoying music, watching emotional video clips, and self-disclosure of the learners.

### **Conducting a Case Study**

In order to reveal the status and impact of Emotional Intelligence on the EFL learners in the context of Bangladesh, it was planned to design and conduct a case study. A public university located in the North-eastern part of Bangladesh was chosen for this study. The Department of English (DOE) and the Institute of Modern Languages (IML) were selected as the

areas of the study. The faculties and learners of DOE and IML were considered as the subjects/respondents of this study.

### **Research Problem/Question and Research Objective**

The research problem of this study is to find out whether the EFL learners in Bangladesh lack emotional intelligence and whether this lack of EI hinders the progress of their learning process. The problem also includes whether emotional intelligence could be utilized to smooth and accelerate the process of EFL learning in the context of Bangladesh.

The objective of this study is to elicit information about the status of EI from the EFL learners in a given context by using maneuvered questionnaires and FGD. Besides, the teachers or instructors are also interviewed to extract their opinions relevant to this study and locate issues that they come across while they teach EFL.

### **Methodology**

The study followed qualitative research approach. Besides, this was mostly a primary research wherein the data were collected from a specific field of study directly for analysis. A case study was administered on the Institute of Modern Languages (IML) and the Department of English (DOE) of a public university located in the North-eastern part of Bangladesh. The faculties of IML and DOE were referred to as respondents, F and the learners of IML and DOE were referred to as respondents, S1 and S2 respectively. The S2 were actually the students of other disciplines of the university who were doing English language courses as their minor or foundation course in the DOE. The respondents, F and S2 were served with some maneuvered questions (questionnaire) to elicit information and status of emotional intelligence of the learners of English as a foreign language in the context of Bangladesh. Besides, a FGD (focus group discussion) was done with the learners of IML (S1) to know their learning experience of English as a foreign language in Bangladesh. The Zoom platform was utilized in conducting the FGD. Questionnaire was served to F and S2 through the email addresses and answers were received through the email. A group of four (4) faculty members from both the IML and DOE was made for this study. On the other side, a group of three (3) learners of the DOE was made to survey the questionnaire and a group of five (5) learners of the IML took part in the FGD. A set of four (4) questions were utilized to elicit information and feedback of the faculties. On the other hand, a set of five (5) questions were given to the S2 (learners of DOE). The stakeholders, the faculties and the learners were told beforehand deliberately in detail about the nature and goal of this study as they took part in this study. In conducting

the FGD with the learners of IML, a bilingual approach (using both English and Bangla languages for asking questions and discussion) was used as the group of learners who participated in the FGD are doing certificate course in English at IML whose proficiency level of English language was presumably lower. The FGD was done with a number of queries that included altogether five (5). As the Zoom facility was used for the FGD, all the participants were connected through either their mobile or laptop devices in the video meeting mode. Queries were thrown one by one and sufficient time span was given to the learners in between two queries to think about the queries and to discuss among themselves. The researcher of this study being the facilitator of the discussion session actively participated. The FGD continued for 30 minutes.

### **Data Analysis**

The first question to the faculty members of the department of English and Institute of modern language was, “What are the emotional/psychological factor(s) you think responsible for the hindrance of progress of learners in an EFL class?” The common part of the answers was the lack of motivation, followed with fear of mistakes, ridicule, lack of confidence, shyness, nervousness, uncomfortable learning atmosphere, culture shock and the feeling of cultural and social distance with the English speaking communities. The second question was, “Do you think that any strong emotional bonding to the mother tongue is detrimental to the learning process of an EFL class?” The answer was ‘No’. Rather they think this helps in many ways to help learning EFL. The third question to the faculties was, “Do you think that learners’ emotional maturity (balance) is required for successful learning in a foreign language class?” The reply was, ‘yes’. It has a great role. It helps students learn what to say and how to say. Bullies do not affect emotionally mature students easily. They are motivated towards the goal of the learning program. Emotional maturity helps learners to be assertive and understanding. Emotional maturity reduces anxiety, which improves learning. The last question to the faculties was, “What are the things that you think offend the learners in an EFL class?” Answers from the faculties were, sneering remarks, mocking and criticism from the peers and faculties for making mistakes. Besides, unfriendly teachers, classroom environment and teachers’ hostile attitude offend the learners.

The second group, the learners of DOE, was asked a few questions to find out how emotional intelligence works on their learning EFL. The first question to this group was what offends them in an EFL class. One learner said, a teacher always speaking in English offends her. The other one said, when he is judged for his mistakes in the class, he becomes offended. The third one of the group said, when other learners make fun of the mistakes

someone makes in an EFL class, it is offensive. The second question to this group was whether they like an angry or strict teacher. All the three learners said, 'no'. Among these learners, two learners said, they are not comfortable with a strict or angry teacher while the other one said, he does not like a strict teacher because he cannot ask any question freely. The third question to this group was; how they react when they face any criticism in class for their mistakes? One in the group said, he hides his disappointment and the other two said, they feel disturbed and uncomfortable. The fourth question was whether they like to learn in pairs or groups. The feedback was, two of the three learners think that their attention and concentration are hampered by this kind of learning while the other one said, if the group consists of more than two persons, it is distracting. The last query to this group of learners was whether they like to speak in an EFL class. In this case, the reply was a mixed one. One learner said, she dislikes it because of shyness. The other one said, though he does not like it, he tries to speak as it helps improve speaking. The third learner said, she likes to speak only when the teacher is supportive.

In the FGD, learners gave their feedback in a lively discussion session. The first thing that they emphasize unanimously that bars their learning EFL, is the insecurity that they encounter while they attempt to learn English as a foreign language. The insecurity arises partly from their weakness in the various areas of the target language, for instance, vocabulary, grammar and pronunciation and partly because of their shyness that pulls them back in their attempt to speak out and to ask questions. Unfamiliar learning environment, criticism and being judgmental of others (teacher and peers) also obstruct their learning process. Another problem that they point out which they face in practicing the target language in and outside the class, is the mentality of the people around who regard speaking English as a kind of showing off. The learners of this group are also of the opinion that a friendly teacher is a must for better EFL learning.

There was a common query to all the three groups of respondents and that was whether the negative factors identified from the respondents' answers, feedback and discussion have any role in their EFL learning. Unanimously, all three groups affirmed the negative role of these factors which means had there been no such factor, the learning would have been better.

## **Findings**

At this stage, we will see what are the findings of this case study that have been exposed after analyzing the data collected from all the three groups of respondents. The findings are as follows:

- a) There is a lack of emotional maturity and balance among the EFL learners.
- b) The feeling of distance with the English speaking community and culture is at work.
- c) Conducting the class in the target language is repulsive or boring and hard to assimilate.
- d) Lack of confidence and interest are seen in learners while they attempt to use the language.
- e) Insecurity and the feeling of fear in EFL learners are located.

## **Conclusion**

Shyness, nervousness, fear of being ridiculed and sneering remarks from both the trainer and the peers hinder students' learning and this fact reveals the lack of emotional maturity and balance in the learners of EFL that are the indicators of low emotional intelligence in the learners. Cultural and the feeling of distance with the English speaking communities are also the indicators of the dearth of emotional intelligence.

Monolingual instruction, that is the use of English by the trainer throughout class is repulsive, this opinion of a learner clues to the emotional immaturity. Trainer's being judgmental of learners' mistakes, strict or angry teacher and negative feedback from the instructor play a negative role in the learning process of EFL in the given context revealing the lack and the need of emotional intelligence. Learners' being unwilling to speak out in the class in the target language hints to the low emotional intelligence of the learners resulting from confidence and interest.

The FGD exposes one crucial factor that makes the learners retreat in an EFL class, and this factor is the insecurity that the learners encounter while they attempt to learn EFL. This insecurity is resulting from learners' poor knowledge of the language, shyness, criticism of other learners and the trainer in the class and the backward mentality of the people around this group regarding the learning and practicing of EFL. This insecurity and all the said factors that work against the successful EFL learning are indicative of the absence of emotional intelligence in the learners and the important role of EI in the given context.

The respondents' unanimous confirmation of the negative role of the problems and obstacles which they are facing in an EFL learning context in Bangladesh paves the way to the belief that these problems and barriers

of the learners are directly or indirectly related to the learners' emotional intelligence.

We have been apprised by now from the discussion on the works of several distinguished researchers that there is the existence of EI in human beings apart from that of Cognitive Intelligence or Intelligence as we generally perceive. From relevant information that has been discussed in this work and from the data derived from the case study presented in this research work on the role of EI in language, especially foreign language learning, it has been ascertained that EI is a crucial factor of success and any kind of learning of humans, and especially any foreign language learning hugely depends on the learner's level of EI. Learners with a high level of EI are more likely to learn EFL better. The findings of this very study support the fact that a good level of EI in the learners is required for successful EFL learning.

The facts discussed in this study, suggests that the people of Bangladesh are more emotional and not emotionally intelligent. This study has tried to show the low level of EI available in the learners of EFL in Bangladesh and the obstacles that the learners face for lack of EI in the given context. This EFL learning context of Bangladesh can be compared with other South Asian countries.

Now, this can also be assumed that we can learn how to be emotionally intelligent and researchers around the globe are working towards this end. Prior to the commencement of any foreign language class like that of EFL, special awareness and learning sessions of EI should be and can be conducted wherein trained faculties and experts in this field can teach the learners to be emotionally intelligent. However, the teacher or trainer of EFL also needs to be trained with the knowledge of EI before the start of teaching. Even before the start of any institutional education, a complementary course or program of learning EI should be included and this will definitely accelerate the teaching and learning cycle. This will not be out of scope to say that in the curriculum of education, learning of EI is to be included to reach the goal of education.

## References

- Elias, M. J., Zins, Joseph E. & Weissberg, R. P. (1997) *Promoting Social and Emotional Learning: Guidelines for Educators*, ASCD, Virginia.
- Goleman, D. (1995) *Emotional Intelligence*, Bantam, New York.
- Gardner, H. (1983) *Frame of Mind: The Theory of Multiple Intelligences*. Paladin, London.

Krashen, S. D. (1981) *Principles and Practice in Second Language Acquisition*, Prentice-Hall International Ltd, London.

Mayer, J. D. & Geher, G. (1996) 'Emotional intelligence and the identification of emotion', *Intelligence*, vol. 22, issue 2, pp. 89-113. Elsevier, [https://doi.org/10.1016/S0160-2896\(96\)90011-2](https://doi.org/10.1016/S0160-2896(96)90011-2)

Mortiboys, A. (2011) *Teaching with Emotional Intelligence: A Step-by-step Guide for Higher and Further Education Professionals*, Routledge.

Pishghadam, R. (2009) 'A quantitative analysis of the relationship between emotional intelligence and foreign language learning', *Electronic Journal of Foreign Language Teaching*, vol. 6, no. 1, pp. 31-41, National University of Singapore, <https://e-flt.nus.edu.sg/wp-content/uploads/2020/09/v6n12009/pishghadam.pdf>

Sucaromana, U. (2012) 'Contribution to language teaching and learning: a review of emotional intelligence', *English Language Teaching*, vol. 5, issue 9, pp. 54-58, Canadian Center of Science and Education, <https://files.eric.ed.gov/fulltext/EJ1079997.pdf>

Salovey, P. & Mayer, J. D. (1990) 'Emotional Intelligence', *Imagination, Cognition, and Personality*, vol. 9, Issue 3, pp. 185-211, Sage, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.385.4383&rep=rep1&type=pdf>

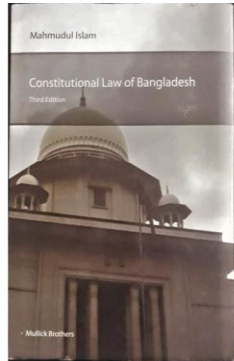
Thorndike, E. L. (1920). 'Intelligence and its uses'. *Harper's Magazine*, vol. 140, pp. 227–235, Harper's Magazine Foundation.

'What is 'Emotional Intelligence'' (2020) *Economic Times*, 29 March, p.1, Bennett, Coleman & Co. Ltd. <https://economictimes.indiatimes.com/definition/emotional-intelligence>

## BOOK REVIEW

**Constitutional Law of Bangladesh** written By Mahmudul Islam, Mullick Brothers, Dhaka, 2002, 3<sup>rd</sup> edn, Pages 1140, ISBN 984-32-01-0126-4

**Reviewed by Md. Mostafijur Rahman<sup>1</sup>**



Constitutional law, commonly, is the basis of all laws in a democratic country. It is significant for the reason that it endows with outline for making new laws and government, ensures public opinion, elects political representatives, establishes the powers and limitations of the government, guarantees citizen's rights, protects human rights, and sets out the means and ways in ensuring public accountability. It embodies the principles of rule of law, human rights, and constitutionalism in one hand, and on the other, it sets-froth the provisions for realization of these ideals and reflects the standards of what might be called the creed. From these points of view, the constitution of Bangladesh has an influential upshot on the advancement of governmental system of the country. But it is a matter of regret that, many times, this robust, lofty and sacred document has lost its originality and contour. Taking this issue into account, the author has given his rapt attention to view the constitutional law of Bangladesh in the light of the high ideals envisioned by the framers of the constitution. This book is critical due to its unique features of the cross-cutting issues of the development of the constitutional law in Bangladesh. In this book, the author has introduced some emerging principles in constitutional and administrative law like the doctrines of legitimate expectation, proportionality and public trust and viewed on their applicability in the socio economic context of Bangladesh. It is, therefore, a valuable

---

<sup>1</sup> PhD Researcher and Assistant Professor, Department of Law, Prime University, Dhaka, Bangladesh. E-mail:mrlawru2001@gmail.com



reference source for law students, academics, researchers, policymakers, members of legal profession and interested readers.

This book is written by Mahmudul Islam who was an eminent senior lawyer in the Supreme Court of Bangladesh and talented constitutional jurist in the country. The author written the book based upon a variety of sources that incorporate the books on constitutional law by Wade and Bradley, B. Schwartz, H. M. Seervai, Dr. W. A. Wynes, A. K. Brohi, Dr. D. D. Basu and Dr. M. P. Jain, American Jurisprudence and the books on administrative law by H. W. R. Wade and B. Schwartz. Moreover, the author examined and reviewed the important judicial decisions of the Supreme Court of Bangladesh on constitutional law, reported different law reports, and applied practical experiences on the important constitutional law cases during the years of his legal practice in the court. Thus, the author's vast knowledge and sound legal careers have increased the credibility of this book and thus fulfilled in earnest the first criterion of a comprehensive constitutional work. The author's interpretation of law in this book seems a pearl of his wisdom in the perspective of legal field and different points of view. In a word, he wrote the book illustrious by his best performance of interpretation.

Being a law teacher, researcher and interested reader in the constitutional history of Bangladesh, I felt special interest in reading and reviewing this book. Of course, the content of the book covers writing many interesting information regarding the issue, but I am to escape many of those to keep the size of review to limited words.

The book is divided into six chapters based on a study of the constitution of Bangladesh and provided a complete understanding of the constitution analyzing the general principles of constitutional law as well as administrative law. First Chapter, titled 'Introductory', contains some theoretical discussions. In this chapter, the author expands on Dicey's idea of rule of law, and Montesquieu's theory of separation of powers. In this book, the author rightly tries to show, how to write a constitutional history of Bangladesh, a country whose constitution came into force in December, 1972 as a robust document, but unfortunately it received jagged dealing during both civil and military regimes. However, the book depicts brief selective contents of constitutional law and this is both theoretical and practical that has produced contemporary Bangladesh constitutional history. So, Islam's book serves as a crucial entry point in that regard. Anyone interested in Bangladesh's constitutional history would find the book to be a good source of reference because it is written in an approachable and student-friendly style, as the author claims.

Chapter 2 titled 'Fundamental rights' where the author mainly discusses all the fundamental rights like freedom of movement, freedom of assembly,

freedom of association, freedom of the press, freedom of speech, freedom of religion, right to property and so on and together their enforcement. The author enumerates how these rights are attained as well as denied by the state functionaries. Moreover, he has discussed about right to equality, doctrine of classification, reasonable classification, presumption of constitutionality, economic regulations, taxation and equal protection, conferment of discretionary powers, arbitrariness, discrimination by administrative acts, discriminations in public employment, meaning of 'in accordance with law,' American 'due process,' security of life and personal liberty, safeguards as to arrest and detention, preventive detention, prohibition against forced labour, protection in respect of trial and punishment, doctrine of ex-post facto, double jeopardy, speedy and fair trial, torture and cruel or degrading punishment, right to enforce fundamental rights and effect of violation of fundamental rights and so forth. This chapter would be helpful to those who are interested in involving themselves in knowing the fundamental rights and related issues.

Almost two-thirds of the book (chapters 3-5) is devoted to the tripartite model of government, or the three branches of government: executive, legislative, and judicial, the general principles regarding the functions of these organs of the state and their relations with the people. The author has attempted to discuss the principles of administrative law with the principles of constitutional law realizing the fact that both are branches of public law and are so inter related. In these chapters, the author analyzed that, though there is a broad distribution of powers in the constitution, it lacks separation of power in true sense. These chapters would be helpful to those who are interested in involving themselves in knowing firstly **the executive** (i.e., powers and functions of the executive responsibility of ministers, relation between the executive and parliament, ordinance and rule making power, emergency power, power of pardon and reprieves, local government and attorney General), secondly **the Legislature** (i.e., composition and duration of parliament, membership of parliament, their qualification and disqualification, meeting and termination and functions of parliament, legislation, delegated legislation, control of public finance, deliberation and discussion, amendment of the Constitution, parliamentary committees, ombudsman, parliamentary privileges, breach of the privileges and contempt of parliament), and thirdly **the Judiciary** (i.e., Chief Justice and other judges of the Supreme Court, jurisdiction of the Supreme Court, judicial review, principles followed by court in judicial review, doctrine of political question, writ jurisdiction, enforcement of fundamental rights. nature of the remedy, procedure and practice, supervisory power of the High Court Division, power of transfer of cases, powers and jurisdiction of Appellate Division, grant of certificate, grant of leave to appeal, power to do complete justice, advisory opinion, binding

effect of the judgments of the Supreme Court, contempt and rulemaking power of the Supreme Court, subordinate courts and Administrative tribunal.

Chapter 6 deals with franchise and election, election commission, services of republic, doctrine of pleasure, public service commission, comptroller and auditor-general, services of the republic, doctrine of pleasure, law and rule to regulate conditions of service, protection against arbitrary dismissal and the like. In this chapter, the author emphasized the importance of voting and free and fair election as a basic requirement of meaningful democracy mentioning the view taken by the High Court Division in *Abdul Momen Chowdhury v. Bangladesh* (W. P. No. 2561 of 2005), and *People's Union for Civil Liberties V. India* [(2009) 3 SCC 200, 2002]. This chapter would be helpful to those who are interested in involving themselves in knowing election, service and other topics.

There are also general discussions on human rights, judicial activism, historical background, features of the Constitution of 1972, changes in and interpretation of constitution, the proper approach to interpretation, principles of statutory interpretation, uses of foreign decisions, prospective overruling, preamble, fundamental principles of state policy, supremacy of constitution and Martial law.

This book presents an in-depth analysis of multiple issues of the constitution, constitutional history and constitutional law of Bangladesh. Considering the importance of socio polity and constitutional history of Bangladesh, this book is a valuable addition to the legal arena of research and discussion. To bring the book up to date in terms of precedents, the author has incorporated all of the important judicial decisions handed down by the Supreme Court of Bangladesh and reported in various law reports. The author attempted to introduce the new principles of legitimate expectation, proportionality, and public trust that are emerging in constitutional and administrative law adjudication. The author attempted to evaluate these principles in the context of Bangladesh's social and economic conditions. Due to the author's range of analysis, arguments, too much information, interpretations in the book, it is immensely useful for the study of constitutional history of Bangladesh.

This book is the most cited constitutional law book among others and it is referred as authoritative guideline for the judiciary. The book is made up of the author's own style of interpretation, understandable language, bubbly sentences and realistic citations. Apart from these characteristic, the book can contribute greatly to our legal studies as an authority on Bangladesh constitution. The entire judiciary, policymakers, academics, researchers, students and various organizations will benefit from this rare

scholarly book. Readers intended to know brief and selective history of Bangladesh can go through this book.

Thinking the very need of the objectivity of a meticulous reader, Mahmudul Islam has written a work that will benefit students, academics, lawyers, judges, policymakers, political and legal historians and general readers alike. Anyone with an interest in the constitutional factors that have shaped the current political and constitutional issues confronting Bangladesh will find this an intriguing and indispensable book.

## Invitation to Contributors

### Office Organ

Centre for Research, Human Resource Development and Publications,  
(CRHP) Prime University, 114/116, Mazar Road, Mirpur-1, Dhaka,  
Bangladesh.

E-mail : primeuniversity\_crhp@yahoo.com  
          : pucrhp@gmail.com  
Website : www.primeuniversity.edu.bd/crhp

### Instruction for Submission of Papers:

*Prime University Journal* is an international and interdisciplinary peer-reviewed journal published twice a year, once in January and another in July of each calendar year and is registered with National Serials Data Program, Library of Congress (ISSN. 1995-5332). The journal contains research-based articles on **Law, Education, Business, Social Science, Arts, Science, Engineering and Technology**. Contributors are requested to submit articles both in hard and soft copies for publication in the Journal. The following will be treated as broad guidelines for submission of the articles.

### Conditions of Submission

**Manuscripts are reviewed for publication with the understanding that they**

- are original;
- are not under consideration by any other publisher;
- have not been previously published in whole or in part;
- have not been previously accepted for publication;
- will not be submitted elsewhere until a decision is reached regarding the manuscript for publication in this journal;
- are completely free from plagiarism

### *Manuscript Format and Style Guide*

When the manuscripts are sent for external review, they are double-blind reviewed. So, please ensure that no authors' names are given on the first page of the manuscript and author names have been taken out of the "File-Properties" screen in word.

All manuscripts should be double-spaced and in single column. Margins should be one inch (2.5cm) at the top, bottom, left and right sides of the page. Font should be Times New Roman and size should be 12 point or larger. The manuscripts should be limited within 8000 words of text,

unless an exception has been granted based on discussion with the Editors in advance of submission. This recommended word count refers to the entire content of the article, including abstract and references. Articles with heavy use of figures and/or tables should be correspondingly shorter to compensate for these. We give preference to shorter pieces.

### **Title**

The title of the article should contain the title of the article and suggestions for a short running title of not more than 90 characters (including spaces). Title should not be in statement form. Also the manuscript should include the authors' names, affiliations and contact details (including e-mail address) for the corresponding author.

### **Abstract**

Authors are requested to submit an unstructured abstract of not more than 250 words. Abstract should be informative for non-specialists. Please make sure that the abstract page does not contain any information identifying the author(s). Also please take care to select a title and an abstract that are direct and 'readers friendly'.

### **Keywords**

Please include no more than five keywords that describe your paper for indexing and for web searches of your manuscript.

### **References in the Text**

The citations should follow the Harvard style, included by the authorship and the year of the work. Each citation requires a reference at the end of the work with full details of the source item and should enable it to be traced.

#### **Example:**

Unterhalter (2007, p. 5) argues that 'gender equality in schooling is an aspiration of global social justice'.

Personal communications should be listed as such where they are cited in the text, and not listed in the references.

#### **Example:**

Results have been reported (Don Graham, 1989, personal communication).

Articles not yet published should show 'forthcoming' in place of the year (in both the reference and the citation). 'In press' should be used in place of the volume, issue and page range details.

#### **Example**

Sharp Parker, A. M. (forthcoming) Cyberterrorism: An examination of the preparedness of the North Carolina local law enforcement. *Security Journal*, in press.

## **References**

References should be placed alphabetically by author or authorship, regardless of the format, i.e. whether books, websites or journal articles etc.

Examples of Correct Forms of References:

### **Book**

Slovic, P. (2000) *The Perception of Risk*, Earthscan Publications, London.

### **Edited Volume**

Nye Jr, J.S., Zelikow, P.D. and King D.C. (eds.) (1997) *Why People Don't Trust Government*. MA: Harvard University Press, Cambridge.

### **Chapter in Book**

Foureur, M. & Hunter, M. (2005) 'The place of birth', in S Pairman, J Pincombe, C Thorogood & S Tracey (eds), *Midwifery preparation for practice*, Elsevier, Churchill Livingstone, Sydney.

### **Article in Journal**

Diezmann, C. M. & Watters, J. J. (2006) 'Balancing opportunities for learning and practising for gifted students', *Curriculum Matters*, vol. 5, no. 1, pp. 3–5.

### **Article in Newspaper**

Warren, M. (2007) 'Kyoto targets flouted', *Australian*, 21 November, p. 3.

**Note:** *In the reference list omit 'The' from any newspaper title.*

### **Newspaper or Magazine Article (Without a Named Author)**

'Federal election: new Chip in politics' (2001) *Advertiser*, 23 October, p. 10.

### **Journal Article from the Web**

Kennedy, I. (2004) 'An assessment strategy to help forestall plagiarism problems', *Studies in Learning, Evaluation, Innovation and Development*, vol. 1, no. 1, pp. 1–8, viewed 7 October 2005, <http://www.sleid.cqu.edu.au/viewissue.php?id=5>

## **Conference Proceedings**

Sapin, A. (ed.) (1985) Health and the Environment. *Proceeding of the Conference on Biological Monitoring Methods for Industrial Chemicals*, 30-31 March 1984, Chicago, IL. American Toxicological Association, Chicago.

## **Conference Paper**

Kell, P. (2006) 'Equality of opportunity in new times: the politics of learning and the learner in the new world disorder', *Proceedings of 4th International Lifelong Learning Conference: partners, pathways, and pedagogies*, CQ University Australia, Yeppoon, Qld, pp. 17–25.

## **Papers/Talks Presented at a Conference but Not Published**

Danaher, P., Danaher, G. & Moriarty, B. (2006) 'Supervising Australian and international postgraduate students', paper presented to the Lifelong Learning Conference, Yeppoon, June.

## **Dissertation/Thesis (Unpublished)**

Wagner, S. J. (2004) Derailment risk assessment, Masters thesis, Central Queensland University, Rockhampton.

## **Figures and Tables**

Ensure that every table or figure is referred to in the text. The table or figure will be placed as per the first mention in the text. Legends should be short, descriptive and define any acronyms, abbreviations or symbols used.

Tables should be numbered and the caption should be put above the table. The source will be straight underneath. Figures should be numbered and the caption will be underneath the figure. The source goes straight under the caption.

## **Distribution of Journal and Reprints**

One copy of journal of the article will be distributed to each of the concerned contributors.

The address of the contact person:

**F. Nahid Huq**

Deputy Director

Centre for Research, Human Resource Development and Publications

Prime University

114/116, Mazar Road, Mirpur-1, Dhaka-1216

Phone: 8031810/120, E-mail: primeuniversity\_crhp@yahoo.com



## Articles and Contributors

### **Design and Simulation of Cadmium Free Antimony Tri-sulfide Based Solar Cells with Zinc Selenide Buffer Layer Using SCAPS-1D**

Md. Shafiqul Islam  
Sunirmal Kumar Biswas  
Md. Abdul Halim  
Md. Mostak Ahmed

### **Remittance Inflow to Bangladesh: Post Covid-19 Strategies**

B. M. Sajjad Hossain  
Abdur Rahman

### **Wanja in *Petals of Blood* and Hester Prynne in *The Scarlet Letter* as Symbols for Breaking Social Myths about Women**

Mohammad Arshad Ali  
Md. Abdul Awal

### **Suicidal Behaviour among the Secondary Level Students of Dhaka: Types and Responsible Agents**

Rahul Chandra Shaha  
Ankhi Rani

### **Risk Analysis of the Accidental Release of Hydrogen Sulfide from a Petroleum Refinery**

M. G. Toufik Ahmed  
Galib Hassan Khan  
Ahosan Habib Rakib

### **Readers' Preference for the Online and Offline Newspaper: A Case Study on University Students**

Prashanta Kumar Shill

### **Utilizing Emotional Intelligence in English Language Teaching in the Context of Bangladesh**

Sayeef Ahmed

## Book Review

### **Constitutional Law of Bangladesh written by Mahmudul Islam, Mullick Brothers, Dhaka, 2002, 3<sup>rd</sup> edn, Pages 1140, ISBN 984-32-01-0126-4**

Md. Mostafijur Rahman

---

Prime University Journal  
Volume-15, Number-1, January – June 2021  
ISSN. 1995-5332  
Centre for Research  
Human Resource Development and Publications  
Prime University  
114/116, Mazar Road, Mirpur-1, Dhaka-1216

Volume-15

Number-1

January-June 2021

PRIME UNIVERSITY JOURNAL | Volume-15 / Number-1 / January-June 2021 | ISSN. 1995-5332



PRIME UNIVERSITY  
**JOURNAL**

114/116, Mazar Road  
Mirpur-1, Dhaka-1216

## **Disclaimer**

Prime University shall be the sole copyright owner of all the materials published in the Journal. Apart from fair dealing for the purposes of research, personal study or criticism, no part of this Journal be copied, adapted, abridged, translated or stored in any retrieval systems, computer systems or other systems or be reproduced in any form by any means whether electronic, mechanical, digital, optical, photographic or otherwise without prior written permission from the University.

The editors, publishers and printers do not own any responsibility for the views expressed by the contributors and for their subjective views about any important legal or non-legal issues contained in the Journal and the author shall be solely responsible for their scholarly opinions and findings.