



ISSN 0378-7532

MANAGEMENT DEVELOPMENT

VOLUME 33

JANUARY-MARCH, 2022

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A Quarterly Journal of Bangladesh Institute of Management

ISSN 0378-7532

VOLUME 33

JANUARY – MARCH, 2022

NUMBER 1

Printed in March 2022

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- INLAND** : General Tk. 600.00 per year
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20% agents' discount, air freight extra and surface mail paid by the Institute. Payments to be made to the Director General of the Institute through bank drafts or postal/ pay orders.

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MANAGEMENT DEVELOPMENT

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DETERMINANTS OF HOUSEHOLD ENERGY USE IN BANGLADESH

Mohammad Jahangir Alam¹

Mohammad Lutfur Rahman²

ABSTRACT

This study uses 2010 Bangladesh Labour Force Survey (BLFS) data to identify and analyze factors that may influence household decisions when selecting specific energy sources for multiple uses, such as lighting and cooking. A multinomial logit model has been used for this identification and analysis. The results show that households' choice of using clean fuels for lighting and cooking is affected by age, education, and gender of the household head, and location. Well-educated or female-headed households, and urban households are more likely to switch to clean energy; while poor families, rural households, and less-educated households are constrained by these factors and continue to use dirty energy. The study shows that female-headed households are more likely to choose clean fuels.

1. INTRODUCTION

The present world is now very much concern about the global warming and climate change, and it is a vital issue for developing and developed countries to switch from dirty energy (cow dung, firewood etc.) and fossil fuel to clean (electricity) and environment-friendly energy (renewable energy) that ensure the sustainable development (Rahut, Das, De Groote, & Behera, 2014). Clean and environment-friendly energy is an essential precondition for development and fight against poverty. Most of the rural household in Bangladesh use firewood, charcoal, agricultural residues, cow dung and so on

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² ==

to fulfil their basic energy needs for cooking.

Energy is an essential requirement to maintain people's smooth life style such as lighting, cooking at home, transportation, study, health services provision etc. About 60% of Bangladeshi people have access to the national grid electricity, and the rest of the 40% people rely on traditional energy sources such as kerosene, candles etc. for lighting. The primary sources of energy used in Bangladesh at the household level are cow dung, firewood, leaves, kerosene oil, solar power, natural gas, and electricity. The low-income people especially living in the rural areas use wood, cow dung and leaves for cooking. The primary sources for the lighting of those people are kerosene oil, candle, Solar PV. The middle-income people in both rural and urban areas use energy mixed of traditional and clean for lighting and cooking. The high-income individuals in the metropolitan area use electricity and generator for lighting and natural gas (pipeline), cylinder gas for cooking whereas electricity, solar pv for lighting and kerosene, cylinder gas for cooking in the rural area.

This study is trying to find out the determinants of household energy use in Bangladesh, and it is important because of several reasons: (i) most of the household are energy-poor not income-poor; (ii) they are not able to choose clean and modern energy due to lack of education and information; (iii) geographical location; (iv) socioeconomic status of the household and (v) political decision.

2. METHODS

2.1 Conceptual framework

Several indicators influence the quantity of a given commodity that would be demanded at a given price such as income, the size of the population, prices and availability of the substitutes (i.e., electricity, kerosene and gas etc.), tastes, personal influence and season (Samuelson Paul & Nordhaus William, n.d.).

The fuel use and choice depend on price, household income, household size and composition, education, occupation, job industry and cultural preferences. The higher income of family leads to more willingness to pay for a better quality of fuel and greater

convenience of use. Other socio-economic factors, such as education, occupation, and job industry etc. also influence the use of better quality of fuel.

Energy security is an important issue, and we have seen significant changes over the decades. Many factors have affected energy security, such as availability of energy; secure supply of energy; the price of energy; subsidies; and technological development (Reddy & Srinivas, 2009). Household income is one of the important indicators that influence to choose fuel for lighting and cooking (Narasimha Rao & Reddy, 2007). However, household income did not reflect the real scenario for choosing modern and clean fuel. It is not always true that energy-poor households are necessarily income-poor. We see the different situation regarding energy poverty in rural and urban areas. In a rural area, most of the people are energy-poor and on the other hand most of the people who maintain life in the urban area are income-poor that leads to energy-poor. That is, comprehensive energy policy which is required to provide more convenient and cleaner modern fuels for the poor people (Khandker, Barnes, & Samad, 2012).

Education plays a major role in choosing clean fuel. The head of household and spouse-education tend to choose cleaner energy because of health benefits; convenience of use; time saving; and the opportunity cost of their female members' labor. Most of the cooking activities might have done by the female members in the developing countries. In India, the education level of the head of the household enhances to choose a clean and efficient source of energy (Narasimha Rao & Reddy, 2007). The educated female household between 10 and 50 years have been found to the high probability of choosing a clean source of energy for cooking (Pandey & Chaubal, 2011). Education is an important determinant that enables to motivate people for switching from dirty to clean and modern fuel. The higher level of education is associated with high probability of using modern fuel that provides significant health; productivity; and environmental benefit, and a lower tendency to use the dirty and solid fuel (Heltberg, 2004).

In developing countries, most of the women are responsible for cooking. They collect the firewood, especially in rural areas for cooking. On the other hand, women in the urban

areas have a keen interest in cleaner and more convenient energy sources. In rural India, the head of household whose main occupation is agriculture or other non-farm employment activities tend to female members of that household who are more engaged in collecting firewood from forest than the male members (Heltberg, Arndt, & Sekhar, 2000). Usually a large number of women are involved in the wood collection, and the opportunity cost of firewood is important in this regard. Every household wants to switch to modern clean fuel from conventional fuel based on price, education and location of residence (Heltberg, 2005). The higher income of the household or female-head household prefer clean and safe fuel for cooking as well as lighting due to indoor air pollution. Female household members are considered as the main energy producer and households are the main users of energy due to ignoring the gender role and traditions in energy (Farhar, 1998).

2.2 Econometric model: multinomial logit model

Multinomial model is the simplest approach to multinomial data which is to nominate one of the response categories as reference or baseline for comparison purpose. All the logits are estimated simultaneously in multinomial logit model that enhance the logical relationship between coefficients and the applied data efficiently.

Let us consider, an individual i has a set of alternatives and he or she can choose the fuel that maximizes utility. The fuel chosen of the different households depend on several factors such as accessibility, price, the shadow price of labor and other socio-economic factors. Based on Random Utility Theory (RUT), the utility of choice is included in a deterministic term and an error term e , which follow the normal distribution. Choices consist of two alternatives that will be a function of probability from which a particular option j is associated with higher utility than the other options.

If there are M error terms, where ϵ_{ij} ($j = 1, \dots, M$) is independently and identically distributed with Weibull distribution, $F(\epsilon_{ij}) = \exp[\exp(-\epsilon_{ij})]$ (McFadden, 1976), then the probability of household/individual that i chooses from option m can be expressed as a function of household characteristics as follows:

$$\Pr(Y_i = m) = \frac{\exp(Z_{im})}{\sum_{j=1}^M \exp(Z_{ij})} \text{-----(1)}$$

The multinomial logit model is now defined by Eq. (1) but with the attention that:

$Z_{ij} = \sum_{r=1}^R \beta_{jr} X_{ir}$. Since the probabilities $\Pr(Y_i = j)$ sum to 1 over all the choices (i.e., $\sum_{j=1}^M \Pr(Y_i = j) = 1$) only M-1 of the probabilities can be determined independently.

Here the multinomial logit of Eq. (1) is indeterminate since it is a system of M equation but only M-1 independent unknowns. A traditional normalization that solves the problem is to set $\beta_{1r} = 0, r = 1, \dots, R$. Normalization requires that $Z_{i1} = 0$ and the Eq. (1) can be written as follows:

$$\Pr(Y_i = 1) = \frac{1}{1 + \sum_{j=2}^M \exp(Z_{ij})} \text{-----(2)}$$

$$\Pr(Y_i = m) = \frac{\exp(Z_{im})}{1 + \sum_{j=2}^M \exp(Z_{ij})} \quad m = 2, \dots, m \text{-----(3)}$$

The probabilities are uniquely determined because of normalization, therefore Eq. (3) exhibits a system of M-1 equation in the M-1 unknown probabilities, $\Pr(Y_i = 1)$, having been defined by Eq. (1) through the normalization assumed.

Using Eq. (2) and Eq. (3), the logarithm of the proportion of the probability of outcome ($j = m$) to that of outcome ($j = k$) will be as follows:

$$\log \left[\frac{\Pr(Y_i = m)}{\Pr(Y_i = k)} \right] = \sum_{r=1}^R (\beta_{mr} - \beta_{kr}) X_{ir} = Z_{im} - Z_{ik} \text{-----(4)}$$

The logarithm of risk ratio is independent over each other. Sometimes it is called relative

risk ratio $\log \left(\frac{\Pr(Y_i = m)}{\Pr(Y_i = k)} \right)$ that can easily be calculated from the risk ratio

by taking its exponential. Let $k = 1$, the log risk ratio is:

$$\log \left[\frac{\Pr(Y_i = m)}{\Pr(Y_i = 1)} \right] = \sum_{r=1}^R (\beta_{mr} X_{ir} = Z_{im} \quad (m = 2, \dots, m) \text{-----(5)}$$

And the risk ratio is:

$$\log \left[\frac{\Pr(Y_i = m)}{\Pr(Y_i = 1)} \right] = \exp \sum_{r=1}^R (\beta_{mr} X_{ir} - \exp(Z_{im})) \quad (m = 2, \dots, M) \quad \text{-----(6)}$$

The Risk Ratio (RR) should be differentiated from the Odds Ratio (OR), where the OR refers to the probability of an outcome divided by 1 – the probability of that outcome. The Odds Ratio for $(j_i = m)$ is:

$$OR_m = \frac{\Pr(Y_i = m)}{1 - \Pr(Y_i = m)} = \frac{\Pr(Y_i = m)}{\Pr(Y_i = 1)} \frac{\Pr(Y_i = 1)}{1 - \Pr(Y_i = m)} = \frac{RR_m \Pr(Y_i = 1)}{1 - RR_m \Pr(Y_i = 1)}$$

Where OR_m and RR_m are the odds ratio and risk ratio respectively, where odds ratio is based on outcome $(j_i = m)$ and relative risk ratio is based on $(j_i = 1)$.

2.3 Data and empirical framework

We used data in this study from the 2010 labor force surveys conducted by Bangladesh Bureau of Statistics (BBS) to estimate the energy-source pattern in Bangladesh and to identify factors that determine energy use. The survey was comprehensive, collective detailed information on a wide range of topics, including wage, sources of energy for lighting and cooking, education, age, religion, and sector-wise activity of the households. The data were cross-section data. The dependent variable is sources of energy for lighting and cooking of the households. Explanatory variables include age, female-headed household (binary), household size, living place/location, educational qualification, job sector (Agriculture, Manufacturing, and Services), job status (Self-employed, Public, and Private), access to water and per capita land of the household etc.

In this study, we use multinomial logit model based on the conceptual framework to analyze the determinants of the source of energy for cooking and lighting. We use choice set for dependent variable of each source of energy; the choice set of lightings was comprised of kerosene, solar power, electricity and others; the choice set for cooking cow dung, straw, leaves, firewood, electricity, kerosene oil, natural gas (pipeline), cylinder gas and others.

3. RESULTS

3.1 Bangladesh's electricity network, infrastructure, and policy

The per capita electricity generation in Bangladesh is very low (348 kwh) compared to other developing countries. The government of Bangladesh has an ambitious plan to produce 24,000 MW electricity within 2021 under the short; medium and long term plan and ensure to access electricity to all people by 2021 (“Bangladesh Economic Review,” 2014). Natural gas is the leading indicator to produce electricity in Bangladesh. From the figure 1, we see that 74.70% of electricity is produced from natural gas and 15.11% from furnace oil in FY 2012-2013. Public sector is still a dominant role in producing electricity but private sector contribution is growing rapidly also.

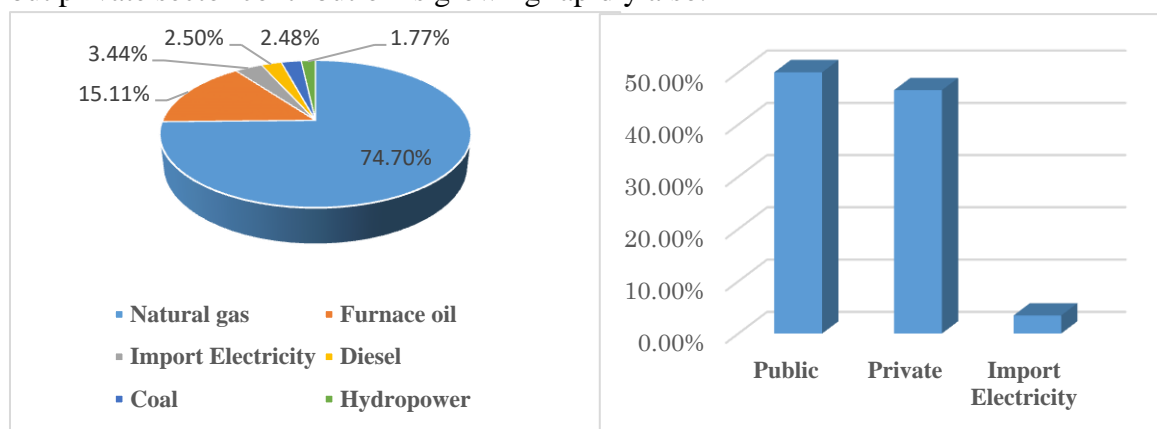


Figure 1 : Installed generation capacity based on fuel consumes and ownership (“Bangladesh Power Development Board (BPDB),” n.d.)

Social and economic development depends on the use of power consumption, and consumption of power also accelerates output and employment. In Bangladesh, consumers are not able to get sufficient power supply due to low power generation. However, there is a high demand for electricity in various sectors such as agriculture, industry, and service sector. The installed capacity and maximum generation of electricity since 1995-96 are given below in Table 1.

Table 1 : Installed capacity and maximum generation of electricity (“Bangladesh Power Development Board (BPDB),” n.d.)

Fiscal Year	Installed capacity (MW)	Maximum Generation (MW)
1995-1996	2105	2087
1999-2000	2665	2665

2004-2005	3721	3751
2009-2010	5271	4606
2013-2014	9821	7356

The Government of Bangladesh has an ambitious plan to provide access to electricity to all based on Master Plan 2010. The power Master Plan 2010 forecast that the maximum demand for electricity in 2021 and 2030 would be 19000 MW and 34000 MW respectively. The government has already taken short, medium, and long-term plan to ensure balanced development of power sector and took various initiatives to encourage private sector for investing electricity generation.

Renewable energy is also given top-most priority by the government to ensure sustainable development and cover the off-grid area in which grid electricity connection is not possible due to various constraints such as lack of adequate infrastructure, budget shortage and bureaucratic complexities. Sustainable and Renewable Energy Development Authority (SREDA) set that 10 percent of total electricity generation would come from renewable energy by 2020. Solar Home System (SHS) is now popular in remote areas where grid electrification is costly and challenging. Currently 18 million people use SHS for lighting purpose who previously used kerosene lamp.

Table 2 : Domestic electricity tariff rate in Bangladesh

Categories	Old tariff (Tk.)	New tariff (Tk.)
1-50 kWh (Life line)	3.33	3.33
1-75 kWh	3.53	3.80
76-200 kWh	5.01	5.14
201-300 kWh	5.19	5.36
301-400 kWh	5.42	5.63
401-600 kWh	8.51	8.70
Above 600 kWh	9.93	9.98

Despite such a low gas price, fuelwood is still used by many households in both rural and urban areas for cooking due to lack of new connection from 2009. The new price took effect from September 2015 (Table 3). However, the gas price is now too low compared to the rest of the world. A good number of the household in rural Bangladesh are still using

kerosene for lighting purpose. Cow-dung, leaves and agricultural residues are also used for cooking purposes in rural Bangladesh. Given this background, it is important to study the determinants of household energy consumption and pattern of energy use in Bangladesh.

Table 4 : Price list of gas for household use in Bangladesh

Categories	Old price (Tk.)	New price (Tk.)
Meter-based users	5.16	7.00
1 Burner (per month)	400.00	600.00
2 Burner (per month)	450.00	650.00

3.2 Household characteristics

Table 5 lists the descriptive statistics of the dependent and independent variables used in the multinomial logit estimate. The average age of the head of household was 34.63 years with 1.34 years of schooling. Most households were farm households with an average of 0.45 acres of wetland and 2.33 acres of dry land. The average annual per capita income of the household was only 1610TK. In 2010, around 12% of households were women, and 56% had access to electricity. These descriptive statistics show that households were not largely covered by electricity, and most of the households had a low level of education.

Table 5 : Characteristics of the sampled households (dependent variables used in the multinomial regression)

Variables	Means	Standard deviation
Age of household head	34.63	12.60
Number of children below 5 year	3	1.25
Household size	5.62	1.65
Education level of head (in years)	1.34	1.50
Per-capita land (in acres)	0.45	0.06
Per-capita income (in TK.)	1610	9.50
Percentage of households (dummy variable)		

Female-headed household	12%	
Availability of electricity	56%	
Rural household	72%	

3.3 Energy use and level of education in Bangladesh

The energy choice and level of education is obviously related. Many studies show that the positive relationship exists between the head of household's education and energy choice for lighting and cooking. The LFS 2010 data shows that high degree of correlation between the household head's level of education and the energy use for lighting and cooking.

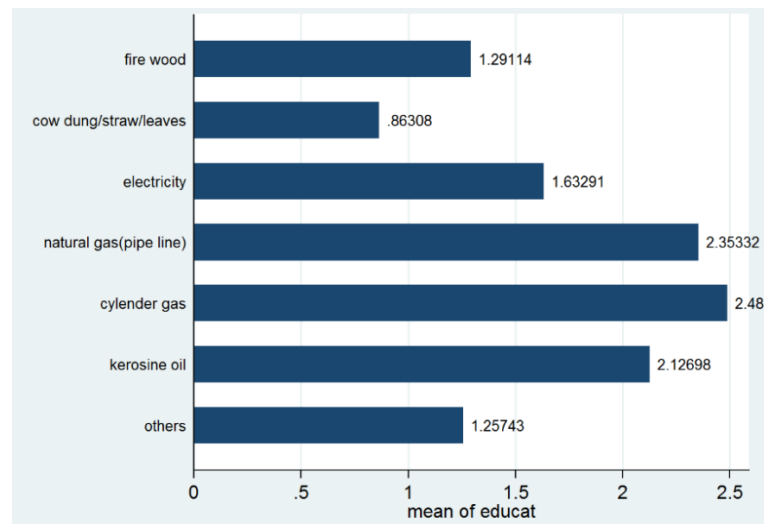


Figure 2 : Energy for cooking and level of education of the head of household

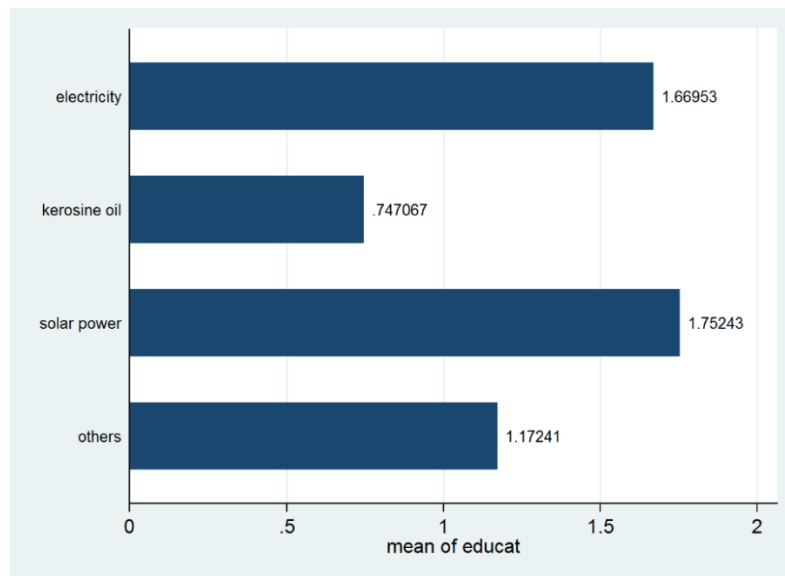


Figure 3 : Energy for lighting and level of education head of the household

3.4 Factors affecting the sources of energy for lighting

	(1)	(3)	(4)
VARIABLES	electricity	solar power	others
age	0.0283***	-0.000661	-0.0192
	(0.00669)	(0.0273)	(0.0523)
age2	-0.000233***	0.000117	0.000266
	(7.16e-05)	(0.000278)	(0.000556)
Female-headed	-0.416***	-0.798	-1.863*
	(0.0742)	(0.514)	(1.022)
Family size	0.0578***	0.225***	0.0578
	(0.00831)	(0.0256)	(0.0665)
Primary school	0.455***	0.904***	0.226
	(0.0340)	(0.149)	(0.280)

	(1)	(3)	(4)
VARIABLES	electricity	solar power	others
Middle school	0.913***	0.920***	0.314
	(0.0398)	(0.176)	(0.336)
Secondary school	1.313***	1.378***	0.296
	(0.0697)	(0.253)	(0.616)
Higher secondary school	1.518***	2.130***	0.874
	(0.0954)	(0.254)	(0.635)
Tertiary and others	1.670***	1.930***	0.748
	(0.100)	(0.291)	(0.675)
Urban	1.515***	-0.836***	2.778***
	(0.0399)	(0.324)	(0.252)
Access to water	1.828***	0.674	0.934**
	(0.114)	(0.747)	(0.433)
Per capita earning	0.000316***	0.000469***	0.000459***
	(3.82e-05)	(8.69e-05)	(0.000141)
p_land	0.00440***	0.00822***	0.00708***
	(0.000489)	(0.000795)	(0.00201)
Private employee	0.313***	-0.374	0.583
	(0.0825)	(0.313)	(0.702)
Self-employee	-0.0752	-0.491**	0.649
	(0.0653)	(0.219)	(0.582)
Manufacturing	0.437***	-0.486	-0.407

	(1)	(3)	(4)
VARIABLES	electricity	solar power	others
	(0.0995)	(0.591)	(1.032)
Services	0.329***	-0.107	0.232
	(0.0299)	(0.129)	(0.273)
District dummies	-0.00364***	0.0112***	0.0117***
	(0.000480)	(0.00215)	(0.00423)
Constant	-2.072***	-6.215***	-7.808***
	(0.169)	(0.709)	(1.356)
Observations	29,397	29,397	29,397

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

FACTORS AFFECTING THE CHOICE OF ENERGY FOR LIGHTING:

The dependent variable is the sources of energy for lighting (Electricity, kerosene, solar power and others) and the independent variables are household socioeconomic, locational and demographic characteristics. Since the dependent variables are discrete, we use the multinomial logit model, and kerosene is used as the reference/base category.

The result indicates that with an increase per capita income people are more likely to choose electricity, a clean energy for lighting, and it is statistically significant, but the relationship between the income and electricity is not strong due to inadequate access of electricity. The uses of solar power and other energy respect to income are also statistically significant.

Age of the household head increases the preference for electricity over kerosene and is

also statistically significant. Kerosene is still preferred to solar power and others because of lack of smooth energy supply in rural areas. This happens due to technological constraint and locational barrier.

Gender plays an important role for choosing energy for lighting purpose. Female-headed household prefer kerosene for lighting over clean energy such as electricity, solar power and others because of financial solvency.

Education is an important determinant for the source of lighting. Higher education level of the head of the household tends to use the cleaner energy over the traditional energy, and this is statistically significant. The solar power is preferred to other sources if the education level of the household head is higher. This result confirms that the preference for cleaner fuels increases with the level of education.

Location also influence the household energy choice for lighting. The urban households are more likely to use electricity than other energy sources.

3.5 FACTORS THAT INFLUENCE THE SOURCES OF ENERGY FOR COOKING

	(1)	(3)	(4)	(5)	(6)	(7)
VARIABLES	fire_wood	electricity	natural_gas_pipe_line	cylender_gas	kerosine_oil	others
			–			
age	0.00728	0.0188	0.0195	0.0136	-0.0954	-0.108*
	(0.00704)	(0.0721)	(0.0143)	(0.0298)	(0.0818)	(0.0566)
age2	-2.35e-05	-0.000277	-9.89e-05	-9.88e-05	0.000644	0.00132**
	(7.53e-05)	(0.000813)	(0.000156)	(0.000324)	(0.00101)	(0.000575)
Female headed	-0.0164	-1.065	0.0953*	0.722*	1.902***	0.167
	(0.0775)	(1.025)	(0.133)	(0.395)	(0.396)	(0.570)
Family size	0.128***	0.0223	0.138***	0.124***	-0.377**	0.0204
	(0.00865)	(0.0903)	(0.0170)	(0.0324)	(0.153)	(0.0909)
Primary school	0.446***	-0.00502	0.875***	0.611***	0.416	-0.394
	(0.0358)	(0.422)	(0.0780)	(0.176)	(0.446)	(0.429)
Middle school	0.665***	1.374***	1.603***	1.151***	0.602	-0.0818
	(0.0418)	(0.332)	(0.0798)	(0.171)	(0.552)	(0.473)
Secondary school	0.489	1.175**	2.167***	1.547***	1.240	0.643

	(1)	(3)	(4)	(5)	(6)	(7)
VARIABLES	fire_wood	electricity	natural_gas_pipe_line	cylender_gas	kerosine_oil	others
	(0.0721)	(0.525)	–	(0.223)	(0.823)	(0.638)
Higher secondary	0.588	1.478	2.230***	1.995***	1.888**	0.730
	(0.0943)	(0.591)	(0.135)	(0.233)	(0.746)	(0.780)
Tertiary and others	0.713	1.066	2.570***	2.502***	2.723	1.730***
	(0.0977)	(0.695)	(0.133)	(0.216)	(0.626)	(0.621)
Urban	0.868	1.084***	3.851***	2.196***	4.323***	2.790***
	(0.0425)	(0.332)	(0.0733)	(0.122)	(0.621)	(0.309)
Access to water	1.475	3.183***	2.838***	1.442***	1.780***	0.297
	(0.129)	(0.388)	(0.129)	(0.222)	(0.405)	(0.743)
p_earning_t	0.000351***	0.000253	0.000573***	0.000581***	0.000733***	0.000238
	(3.97e-05)	(0.000300)	(5.39e-05)	(7.50e-05)	(0.000150)	(0.000315)
p_land	0.00320***	0.00350	0.00535***	0.00423***	0.00420	0.000817
	(0.000451)	(0.00323)	(0.000673)	(0.00111)	(0.00343)	(0.00501)
Private employee	0.0612	-1.756*	0.381***	0.384*	0.264	-1.215

	(1)	(3)	(4)	(5)	(6)	(7)
VARIABLES	fire_wood	electricity	natural_gas_pipe_line	cylender_gas	kerosine_oil	others
			–			
	(0.0844)	(1.060)	(0.119)	(0.224)	(0.607)	(1.108)
Self-employee	0.00481	-0.140	-0.0754	-0.549***	-0.0860	0.104
	(0.0665)	(0.409)	(0.0947)	(0.163)	(0.534)	(0.554)
Manufacturing	0.545	1.285*	0.494**	0.326**	-11.96	1.042
	(0.104)	(0.778)	(0.235)	(0.476)	(592.5)	(0.806)
Services	0.616	0.848**	1.116***	0.612***	1.747*	0.900**
	(0.0316)	(0.357)	(0.0919)	(0.155)	(1.039)	(0.387)
dt	-0.0137***	-0.00501	-0.00882***	-0.00647***	0.0280***	0.00575
	(0.000508)	(0.00473)	(0.00104)	(0.00200)	(0.00638)	(0.00528)
Constant	-1.830***	-7.118***	-6.740***	-6.081***	-8.905***	-5.940***
	(0.177)	(1.647)	(0.350)	(0.705)	(2.071)	(1.520)
Observations	29,397	29,397	29,397	29,397	29,397	29,397

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

FACTORS AFFECTING THE CHOICE OF ENERGY FOR COOKING:

- Head of household age does not have a significant effect on the use of clean or dirty fuels.
- Female-headed households prefer clean energy, such as natural gas or cylinder gas over cow dung and kerosene for cooking.
- The more educated head of household families prefer cleaner fuels; they are more likely to choose LPG instead of electricity for cooking and are less likely to choose fuelwood, kerosene or dung cake. LPG, rather than electricity, is the cooking fuel of choice for educated families. Therefore, education is one of the most important driving forces for the energy chosen from dirty fuel for cooking to clean fuel.
- Employment nature also plays an important role to choose energy use for cooking purpose. Private employees, and employees at manufacturing and service sector prefer clean energy such as natural gas and cylinder gas over fire-wood and others for cooking.
- Location is important determinants to choose fuel for cooking. Most of the urban household choose natural gas or cylinder gas over kerosene or fire-wood for cooking.
- The family who have access to water prefers clean energy over dirty fuel for cooking.

4. CONCLUSIONS AND POLICY RECOMMENDATIONS

This article used Bangladesh Labour Force (BLS) 2010 survey data (a nationally representative survey) to analyze energy use patterns in Bangladesh and tested the energy ladder hypothesis using a multinomial logit model to determine the determinants of energy choices for lighting and cooking postulate that household choice of cleaner energy increase their income. The results show that household income, estimated as per capita expenditure, does affect household energy choices and the move towards cleaner fuels. Other factors affecting fuel choice are age, gender of the head of household, education level of the head of household, location (rural or urban area), number of children, number

of elderly people in the household, number of households and electricity consumption.

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DIVIDEND POLICY AND FIRM PERFORMANCE OF INFORMATION TECHNOLOGY SECTOR OF DHAKA STOCK EXCHANGE

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ABSTRACT

This paper aims to empirically investigate the association between the dividend policy and firm performance of the listed Information Technology firms in the Dhaka Stock Exchange (DSE). Earlier, most of the researchers established the significance of the dividend announcement that indicates a positive signal to the future performance of a firm which is consistent with the dividend signaling theory and also found miscellaneous relationship between the dividend policy and firm performance. Panel data procedure have been examined applying different statistical model, mainly multiple regression model, to discover the association between the dependent variables (D/P ratio) and independent variables (EPS, ROA and ROE). The result of the statistical analysis evident shows that there is a significant positive association between the dependent variables and independent variables (EPS and ROE). In contrast, there is a positive relationship between the dependent variable and independent variable (ROA) which is statistically insignificant. Findings of the study will create the equal opportunity for further research and management of a firm during dividend announcement decisions.

Keywords: *Dividend policy, dividend signaling theory, Dividend Payout Ratio, Earning per Share (EPS), Return on Asset (ROA) and Return on Equity (ROE)*

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INTRODUCTION

Dividend policy decision is one of the major decisions for the corporate firms. Generally, making profit is the prime objective of a firm. For this reason firms always endeavor to manage their business to maximize profit. Undistributed profit, which is acknowledged as retained earnings, and distributed profit, which is known as dividend, are very familiar terms in corporate finance; those are the part of the net income of the year. Shareholders of the firms always expect dividend at end of the year and normally firms distribute the profit among the shareholders. But sometimes some of the firms do not distribute all profit as a dividend. The firms retain some profit from net income to reinvest or operate the business smoothly. But dividend announcement is so vague for the corporate firms that sometimes they go into a dilemma whether dividend should be announced or not. Also, a question arises “does it affect the firm performance?” The answer of the question is still vague for the most of the corporate firms because in our country there is no specific existence of standard dividend payout policy for the dividend payment. So the amount of dividend to be paid relies on the company’s decision.

The behavior of investors and the stock market provide information about dividend policy. It is very common that when firms announce dividends and they have a significant impact on the stock price; it means that stock price of the firm increases when firm announces dividend and vice-versa. Earlier many researchers have studied on dividend policy in their studies to find the relationship between the dividend policy and firm performance. Most of the studies suggest that dividend payment decision highly relies on the profitability information and expected earnings of the firms in future. Also most of the studies suggest that forthcoming profitability and expected earnings in future are correlated with the dividend policies of the firms. Miller and Rock (1985) expresses that when signaling cost exists issuing new shares in the market, there is a possibility to plunge down the future earnings of the firms. Consequently, it reveals that possible future earnings are simultaneous with the dividend payout policy. It also can be stated that signaling hypothesis may significantly affect the stock price of the firms. Grullon et al. (2005) indicate that signaling hypothesis is one the major key theories in corporate finance; therefore it must be explored thoroughly by the researcher. In the past, many researchers have studied this theory but it is still in vague. Nonetheless many corporate firms have previously succeeded applying the signaling theory. Many scholars such as Nasim and Ziv (2001) and Bhattacharya (1979) agreed with this theory. On the contrary, Scholars like Benartzi et al. (1997) completely denied or barely agreed with this. According to Grullon et al. (2002), dividend payment signals provide adequate information to the investors by which it may impact the stock market and share price of the firms.

"A signaling theory indicates a positive future financial outcomes like earnings and profitability with the dividend increasing announcements of the firms, and it provides asymmetric information and awareness between the prospective investors and management of the firms, Miller and Rock (1985). To bridge the asymmetry between investors and management of the firms, disclose the information about dividend payment intentionally, future earnings and profitability at some cost are determined as signaling cost. According to Miller and Rock (1985), signaling cost is the loss of finance which can be considered as investments of future financial benefits. Subsequently, signaling hypothesis forecast demonstrates that a significant discrepancy in expected dividend payout policy may change the future earnings and profitability. It is mentioned earlier that most of the researchers found relevant impact and supported the signaling theory but others did not support the theory. The majority of the researches have explored on the listed firms. It is unforeseen while some researchers studied on unlisted (which are not listed with the stock market) and small corporations. It was found that asymmetric information which relates to signaling hypothesis is the main issue for them.

Modigliani and Miller (1958) suggested in their dividend irrelevance theorem that there is no significant effect, either firms pay dividend or not; it will not affect the price of the share and future earnings. It means that both did not find any association between the dividend policy and firm values. Relying on this theorem, sometimes some management of the firms stand at insensitive position to make the decisions either they payout the dividend or retain all the profit for the investments. On the other hand, signaling theory for the unlisted and small firms are costly because there are limited number of shareholders and they work with management so closely; therefore they might choose alternative. As a result, sometimes it is not necessary to apply dividend as a signaling hypothesis.

This paper explores to justify whether firms listed in Information Technology sector of Dhaka Stock Exchange (DSE) support the theory or not. All the dividend payment and performance data have been gathered to analyze the relationship between the dividend and firm performance and also to test the dependency of IT firms on the signaling theory. For last five years, data have been gathered and have been analyzed thoroughly. This study enables to embolden the new thoughts and ideas on the correlation between the dividend policy and future firm performance along with creating new scopes for the research on it. In this sector sometimes management of the firms provides asymmetric information because it is difficult for the investors to make decision on signaling hypothesis. Consequently, there is a chance to lose their investment due to that signaling hypothesis which contains asymmetric information. Due to some previous established theory like M&M theory, it is very rigid for the investors to understand projected future earnings and profitability (how firms will perform in future). In addition, most of the firms in this sectors highly depends on debt financing. Hence, the number of common share outstanding is not high. Therefore, management holds a large number of shares of the company, and they make decision without considering outside shareholders.

Several hypothesis have been examined to analyze empirically how dividend payment decision affect the firm performance measures. Four variables have been selected to test the hypothesis. Panel data have been collected from the 11 IT firms listed in Dhaka Stock Exchange (DSE) determining dividend payout ratio as an independent variables and performance measures (EPS, ROA and ROE) as dependent variables during the period of 2016-2020. There are 22 sectors listed in IT Dhaka Stock Exchange (DSE). Among those, IT sector is one of the fast growing sectors after government special patronization to expedite the growth of this sector. Many researchers conducted studies on other sectors but this sectors is still untouched or limitedly touched even though it possesses high potentiality to contribute in the economy. Consequently, this paper aims to investigate how dividend payment decision affects the future earnings and profitability which is denoted as firm performance of the 11 listed IT firms examining panel data during the period of 2016-2020.

Research gap and problem statement:

Announcement and payment of dividend at end of the year is very challenging and critical task for the management of the firms. They are always in dilemma that what portion of the dividend from earnings may distribute among the shareholders and retaining portion of the earnings for the reinvestments. Such types of dilemma arise because management is obliged to satisfy the shareholders paying dividends and at the same time maximize wealth of the assets by reinvesting. Some shareholders demand high dividend every year for maintaining their daily expenses and investing where opportunity exists. On the other hand, some shareholders keep their earnings in the company for reinvestments. Subsequently, dividend payment announcement signals the shareholders (which denotes as a signaling hypothesis) that company is doing well, and future earnings and profitability will be maximized. Therefore, this information influences the investors to buy more shares so that shares' price of the firms increases. But this assumptions is still vague when Modigliani and Miller approach exists and it is confusing for both firms and investors. M & M assumption suggests that whether company pays dividend or not that does not affect the share price of the firms. Hence, it is difficult for firms and investors who are involved with the IT firms listed in DSE because of limited research in this sector. This paper might be able to add a clear idea for the firms whether they should payout dividend or reinvest the earning and if they payout dividend, in what percentages the firm performance increases. So this paper examines to find the relationship between the dividend policy and firm performance.

LITERATURE REVIEW

The theoretical assumptions under dividend policy and its impact on firm performance might be described either in irrelevance or relevance theory. The controversy among the researchers have taken place when Modigliani and Miller (1961) suggested a dividend policy irrelevance theory. This theorem is the foundation for the modern corporate finance. Both assumed that there is no difference for the firms whether firms pay dividend or not due to the missing of taxes and transaction costs. Modigliani & Miller (1961) claimed that value of firm relies on their basic earning capacity and its business risk. Therefore, many researchers have conducted various research on this topic to draw the conclusion of those arguments.

Agyei and Yiadom (2011) studied to explore the relationship between the dividend policy of the banks in Ghana and the firm performance gathering & analyzing five years data from 16 listed banks in Ghana Stock Exchange (GSE). They found that there is a positive relationship between the dividend policy and firms performance. They also found that the average dividend payout ratio is 24.65% which provides a signal to the investors that banks are performing well. Amidu (2007), similarly conducted a study on listed firms in Ghana Stock Exchange (GSE) to test the association between the same matters and found that there is a positive association between the two measures by using regression methods. It was concluded in his studies that changing dividend payments affects the firm performance. Farrukh et al. (2017) carried out a research to investigate how dividend policy impacts the firm's performance and shareholders wealth on the companies listed in the Pakistan Stock Exchange. Return on equity (ROE), share price, Earnings per share (EPS) were used as performance measures and determined as a dependent variables; on the other hand, dividend per share and dividend yield were used as a dividend policy measures and considered as an independent variables. The outcomes of the regression analysis demonstrated that there was a positive correlation between the dividend policy and shareholders' wealth and firm performances. Also, Aliahamad (2008) analyzed the top hundreds companies listed in the Kuala Lumpur Stock Exchange exploring four years data and found that firm performance was impacted by the changes in dividend policy.

Hafeez et al. (2018) investigated a study where return on asset (ROA) and return on equity (ROE) were used as dependent variables whereas earnings per share (EPS), dividend payout ratio (D/P ratio) and price earning ration (P/E ratio) were used as independent variables. The regression analysis was the key tool for finding the result of the data and found that independents variables had significant influence on dependent variables.

Uwuigbe et.al. (2001) explored a research on Nigerian listed firms to find the relationship between the dividend policy and firm's performance along with ownership structure, firm size and dividend payouts. A significant positive association was found between the both

measures applying multiple regression analysis exercising 50 firms' annual reports during 2006 to 2010. It was also found that ownership structure of the firms and firm size have a significant impact on the dividend payout decision. Besides, Ramli, (2010) researched on the different Malaysian firms to investigate the ownership structure and dividend policy. The study revealed that large shareholders (large shareholdings) positively have impact on the dividend policy which means that increasing in shareholders' share holding the dividend payments of the (?) also increases.

A research was conducted to determine the key factors of the dividend policy using panel data of the non-financial listed companies in the Saudi Arabia Stock Exchange from the period of 2004-2010. The regression model was chosen to analyze the panel data to examine movement of the dependent and independent variables. It was that earnings per share (EPS) and dividend per share (DPS) are the major influential factors for the dividend payment decision, Turki & Al-Khadhiri (2013).

Hamid et al. (2017) studied to find the effect in the stock price by the dividend decision and their macro-economic variables of the financial sectors of Pakistan using panel data from 2006 to 2014. Detecting the relationships among the variables, fixed and random analysis was exercised. There was a positive association with dependent variables (dividend payout ratio, market value and interest fluctuations) and the share price volatility.

Sharma, (2001) carried out a study to investigate the importance of dividend policy for higher firm performance and their relationship, also states that signaling hypothesis is a dominant indicator for the firm's future performance. Risk and return determination of the shareholders does not exist when signaling hypothesis exist. The study demonstrated that dividend policy of the firms and its performance measures are positively correlated. It was also detected that shares' prices of the firm are much sensitive to the announcement of the dividend instigation which can be a positive news for the investors. In the study, Consecutive decline in the dividend in last five years was observed because of the underestimation of the shareholder; it was discovered when the declared dividend was exercised and compared with the expected stock return. Diptee and Roshan (2009) outlined that the dividend payment policy is a systematic way of distributing profit proportionately among the shareholders. It was mentioned in the paper that firm generally uses equity such as common stock and preferred stock in their capital structure. Consequently, preferred stockholders are paid dividend at a fixed rate whereas dividend payment of the common stock relies on the earning of the firms and board of the directors' decision. Researchers hypothetically recommended that the dividend payout announcement is significant to the firm's future performance. Stacescu (2006) observed that changes in the average profitability of the firm leads the changes in the dividends' rates of the firm. It implies whenever dividend payment of the firm rises due to high profitability, the average dividend would be much higher than the previous years and it could be lower having lower profitability of the year.

Hossain M. (2006) explored a research on the determinants of stock price and return movements examining on listed firms of Dhaka Stock Exchange (DSE). Several factors were examined such as securities listed in the stock exchange, initial public offerings, dividend payout ratio, earning per share (EPS), dividend per share (DPS) along with some macroeconomic variables, for instance, per capital income, gross domestic product (GDP), export & import information, foreign exchange reserve, interest rate, inflation rate and investment. A negative relation was found between the dividend yield and stock price. It reveals that dividend payment has a negative impact on the share price of the firm. On the other hand, Rahman, Z. and Rahman, L. (2008) found a positive association studying on the stock price behavior around the ex-dividend date analyzing the listed firms of the Dhaka Stock Exchange (DSE). In summary, they added that ex-dividend price of the share increased even though having a significant decline in DSE index which indicates of attaining a clear capital gain for the shareholders.

Bangladesh is one the fast-growing developing countries in the world. It has already achieved the Millennium Development Growth/ Goals (MDG) and now heading towards achieving Sustainable Development Growth/ Goals (SDG). Therefore, such potentiality is creating an opportunity for the research on various aspects to expedite the developing process. There are around 22 listed sectors in the stock market. Many researchers have conducted many research in various fields encompassing the sectors listed in the stock market except Information Technology sector, which is one of the most potential sectors and has the possibility to contribute vastly in the overall economy of Bangladesh. As a result, this paper aims to study on the impact of dividend policy on the firm performance getting evidence from the listed information technology firms in the Dhaka Stock Exchange (DSE).

Research Methodology:

This paper is empirically researched on the 11 listed information technology firms listed in the Dhaka Stock Exchange. All the necessary data have been gathered using secondary source exploring annual report of the 11 listed information technology firm during the period of 2016-2020. Subsequently, this study investigates the impact of dividend payout policy and firm performance examining the five-year secondary panel data procedure from the annual report of the firms. Independent variables and dependent variables are selected for the analyzing data and finding the association between the variables. For instance, dividend payout ratio (D/P ratio) is used as dependent variable whereas earning per share (EPS), return on equity (ROE) and return on asset (ROA) are exercised as independent variables. Independent variable measures and dependent variables measures are determined using different accounting ratio exist in the real practice. Statistical data analysis tools were used such as descriptive statistics, correlation analysis and regression analysis to find the concrete evidence determining the relationship between the independent and dependent variables.

To identify the linkage between Dependent variable & Independent Variables following hypothesis has been tested in this study.

H01: EPS has no significant impact on Dividend Payout Ratio

HA1: EPS has significant impact on Dividend Payout Ratio

H02: ROA has no significant impact on Dividend Payout Ratio

HA2: ROA has significant impact on Dividend Payout Ratio

H03: ROE has no significant impact on Dividend Payout Ratio

HA3: ROE has significant impact on Dividend Payout Ratio

Variables	Terminology	Definition
DP	Dividend Payout Ratio	Ratio of Total annual Dividend to Net income
EPS	Earnings Per Share	Ratio of Net income to numbers of common share outstanding
ROA	Return on Assets	Ratio of Net income to total asset
ROE	Return on Equity	Ratio of Net income to total equity

Methodology and Approach:

For data analysis following models has been used:

Regression Model

$$\ln DP_t = \alpha_0 + \beta_1 \ln EPS_t + \beta_2 \ln ROA_t + \beta_3 \ln ROE_t + \epsilon_t \dots \dots \dots [1]$$

Here α & β are the coefficient of variables

Y_T represents the GDP per capital.

$\ln DP_t$ = Natural Logarithm of Dividend Payout Ratio

$\ln EPS_t$ = Natural Logarithm of Earnings Per Share

$\ln ROA_t$ = Natural Logarithm of Return on Asset

$\ln ROE_t$ = Natural Logarithm of Return on Equity

ϵ_t = Error term.

In the above equation, DP is the dependent variables & Earnings per Share, Return on Asset, and Return on Equity are independent variables.

Results & Discussion:

Descriptive Statistics:

The descriptive statistics for the four variables have been obtained for empirical investigation and are presented in the following table. The variables are Dividend Payout Ratio, Earnings per Share, Return on Asset & Return on Equity. The value of Skewness & Kurtosis indicates lack of symmetry in the distribution. All the variables have negative skewness & long left tail. High (>3) or low (<3) kurtosis value indicate leptokurtic or platykurtic. Here all variables are leptokurtic. If the skewness & kurtosis have a value of zero & 3, the data series is normally distributed. The value of standard deviation indicates that EPS & ROE are more volatile compared to DP & ROA.

Table 1: Descriptive statistic

Terminology	LNDP	LNEPS	LNROA	LNROE
Mean	.984275	.233524	.8024905	.968837
Median	1.00000	.209826	.857774	.983965
Maximum	1.301300	.960745	1.30235	1.454844
Minimum	.0000000	-.708963	-.037680	.136090
Std. Dev	.226547	.305550	.259341	.260431
Skewness	-2.281480	-.406353	-.99771	-.85543
Kurtosis	9.632447	4.30671	4.938168	4.47678
Jarque-Bera	143.1220	4.89674	15.476696	13.51457
Probability	.000000	.0864980	.000403	.001137
Sum	52.37788	12.32893	42.12785	51.78493
Sum Sq. Dev.	2.668680	4.128907	3.23896	3.20812
Observations	53	53	53	53

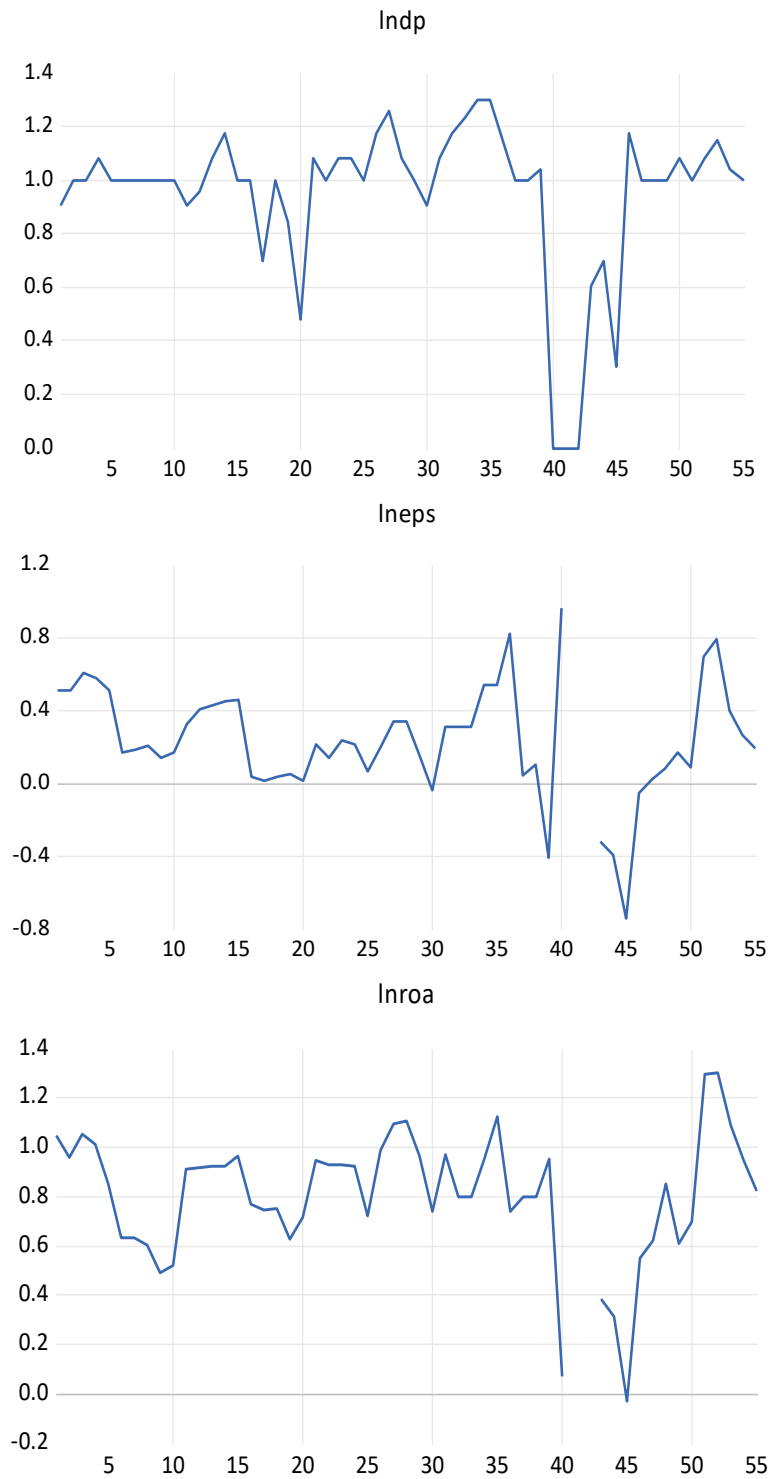




Figure 1: Data-set Graph for four variables, i.e. LNNDP, LNEPS, LNROA and LNROE

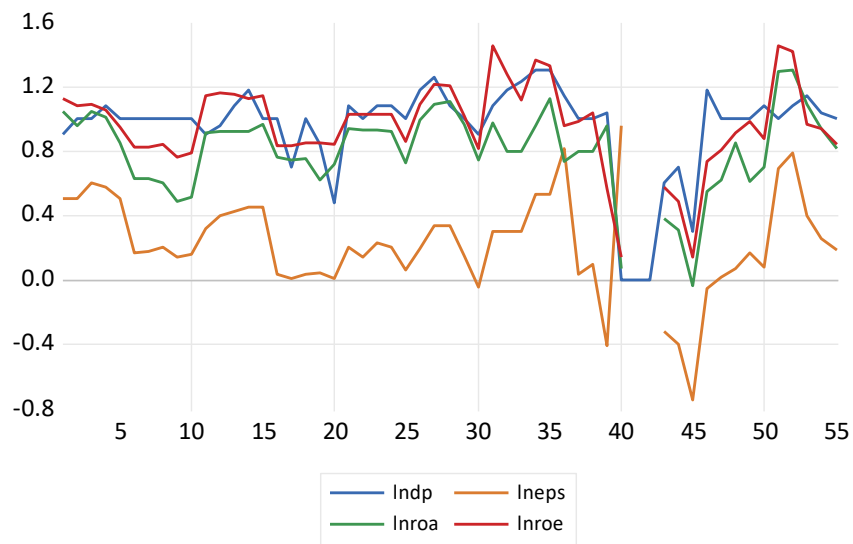


Figure 2: Data-set Graph for Comparison three variables, i.e EPS, ROA and ROE with respect to DP

OLS REGRESSION ANALYSIS

OLS regression found (Table 2) that there is a positive relation between independent variable and dependent variable. EPS & ROE is statistically more significant than ROA. The model is significant as R- squared & Adjusted R- squared is 57.78% & 55.54% respectively and respective p value also .0000000.

Table 2: Result of OLS Regression Analysis

Dependent Variable: LNGDP				
Method: Least Squares				
Dynamic regressors (1 lag, fixed): LNEPS LNROA LNROE				
Fixed Regressors: C				
Variable	Coefficient	Std. Error	t-statistics	Probability*
LNEPS	.174701	.082345	-2.012914	.04000
LNROA	.209042	.168052	1.214199	.21211
LNROE	.556543	.165671	3.882651	.00118
C	.328253	.082733	3.498765	.00046
R squared			.577801	
Adjusted R-squared			.555443	
S.E. of regression			.157779	
Log likelihood			26.98604	
F-statistics			22.39305	
Prob (F-statistics)			.000000	
Mean Dependent variance			.989594	
S.D. dependent var			.2263382	
Akaike info criterion			-.8934568	
Schwarz criterion			-.737653	
Hannan-Quinn criterion			-.857689	
Durbin-Watson stat			1.795832	

ANOVA Test & Test for equality of means between series:

ANOVA test tells whether there are any statistical differences between the mean of the independent variables. Also the variance and standard deviation of the mean of the independent variables (incomplete sentence). From the following table (table 3) ANOVA & welch test showed that the study is significant (p value of .00000)

Table 3: Result of ANOVA F-test & Welch F-test

Method	Df	Value	Probability
ANOVA F-test	(3,210)	79.87814	.00000
Welch F-test*	(3,116.447)	69.75502	.00000

*Test allows for unequal cell variances

ANALYSIS OF VARIANCE

Table 4 provides the level of variance (error) among the independent variables and between the dependent variable & independent variables. There is a very low 7% variance among the independent variables & total of 16% variance in this study i.e., the study is statistically significant with lower error.

Table 4: Analysis of variance

Source of Variance	Df	Sum of sq.	Mean sq.
Between	3	19.02190	6.340634
Within	210	16.66956	.079379
Total	213	35.69146	.167566

CATEGORY STATISTICS

Table 5 visualizes the standard errors of mean of each variable. Standard errors of 3.9%, 4.2%, 3.5% & 3.6% have been observed in DP, EPS, ROA, and ROE respectively where total of 2.7% error is identified. So this analysis is so fit for explaining the relationship between dependent variable & independent variables.

Table 5: Category Statistics

Variable	Count	Mean	Std. Dev	Std. Err. Of Mean
LNDP	55	.948483	.289826	.039080
LNEPS	53	.230684	.308536	.042381
LNROA	53	.808802	.258824	.035552
LNROE	53	.962851	.266748	.036641
ALL	214	.739675	.409348	.027982

FINDINGS

From the analysis this can be concluded that there is a positive linear relationship between the dependent variable (DP) & independent variables (EPS, ROA, ROE). Coefficient of .328253 tells that Dividend payout ratio will be .3282 times if the value of all the independent variables is zero. Intercept coefficient of EPS is .174701 tells that if EPS increases by .174701, then DP will increase by 1. For ROA the value of coefficient is .209042 tells that if ROA increases by .209042, then DP will increase by 1. Intercept coefficient of ROE is .556543 which is most impactful with dependent variable i.e., if ROE increases by .556543 then DP will increase by 1. Finally, the model is significant according to the p value, t statistics, F test & ANOVA test.

Target Equation:

$$\ln DP_t = .328253 + .174701 \ln EPSt + .209042 \ln ROAt + .556543 \ln ROEt + \epsilon_t$$

CONCLUSION

This paper is developed in an attempt to examine the relationship between Dividend Payout ratio and EPS, ROA, ROE. This study employed OLS regression, ANOVA test & Welch test for secondary data analysis collected from the website of Dhaka Stock Exchange. This paper revealed that there is linear positive relationship between dependent variable and independent variable. This paper concluded that the more the earning is (net income) against its total asset and equity, the more it can distribute it among the shareholder as dividend and vice versa. This study encourages the policy holders to declare high dividend according to its net income so that the firm's share price i.e., shareholder's wealth, can be maximized.

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TITLE OF THE RESEARCH: TECHNOSTRESS ON SECONDARY AND HIGHER SECONDARY TEACHER

Tanvir Hossain¹

ABSTRACT

The uses of Information and Communication Technology (ICT) are increasing day by day in our country for the education sector. In this education sector, many technological tools and techniques are used for teaching and learning. The purpose of this exploratory study was to decide on stress-related issues of working professionals between a teaching organization and ICT. This type of stress is known as technostress. Previous research found that ICT can be related to stress, but the given kinds of stress related issues among teachers have not been done yet. The purpose of this thesis was to find out the relationship between technology and stress and also find out what the stress-related issues are, which factors does technostress affect among teacher's personal lives, and overall to gain a better understanding of the impact of technology use. The study found a solid connection among work overload, work-home conflict, strain, attack of privacy, role ambiguity, job satisfaction and organizational commitment. Field data from 152 teaching professionals were received and analyzed. The study found a strong relationship between stressors and the outcome of stressors.

Keywords: *Information and communication technologies, technostress, stress, strain*

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INTRODUCTION

1.1 Background

Nowadays, with the quick development in technological devices, specifically in Information Technologies (ITs), technology is regularly integrated into every field. Now with standing IT, while advantageous and useful, there has also brought some different problems to teachers, which noted as technostress. In a previous couple of years, one after other scholars has worked to focus on technostress. Existing research from various aspects has explained the generation of technical pressure why individuals perceive the pressure of technology (Ragu Nathan et al., 2008; Ayyagari, R., Grover, V., & Purvis, R., 2011), the reason of technostress (Mohamed, H.K., Deepa, T.K., Divya, P., 2015; Çoklar, A. N., Efiltili, E., Sahin, Y. L., & Akçay, A., 2016) and its outcome (Tarafdar, M., Pullins, E. B., & Ragu-Nathan, T. S. 2015; Maier, C., Laumer, S., & Eckhardt, A., 2015; Jonušauskas, S., & Raišienė, A. G., 2016).

The term technostress was coined in 1984 by clinical psychologist Craig Brod, who described it as a modern disease caused by one's inability to deal with ICTs in a healthy manner (Ayyagari, R., Grover, V., & Purvis, R., 2011). Stress in the workplace is recognized as contributing to a repetition of health and quality-of-life issues that could have far-reaching consequences (Cooper et al. 1996; Sutherland and Cooper 1990; Tennant 2001). The World Health Organization (WHO) argues that present work patterns have changed partly due to the increased use of ICTs (WHO 2005). They claim that almost all of the structural responses to "prevent and eliminate health risks at the workplace were primarily directed at physical risks and largely ignored psychosocial risks and the effects of work on mental health" (p. 3), and recommend that trained personnel and tools are needed to develop preventive measures to decrease the risks demanded to workers mental health.

Naturally, the computerization of the office work environment is shown to have higher levels of stress among employees (Agervold, M., 1987; Kinman, G., & Jones, F., 2005). At the same time, some of them claimed that due to heavier workload stress is increasing (Åborg, C., & Billing, A., 2003; Sandblad et al. 2003), perhaps it is a combination of side effects. Straub and Karahanna(1998) proved that technostress possibly arrives from the fragmentation of employment.

1.2 Research Problem and Research Questions

In recent years, our government invested a huge amount of money in technology, specially education sector has received a huge amount of financial support, which is necessary to develop competence in teaching. Teachers are supposed to use technology like multimedia and digital textbook, which is treated as basic skill for teaching in this digital age. The government also emphasized them to use the technology. Even government added a new subject ICT in secondary & higher secondary school, which is a mandatory subject for all students. At the time we saw that, IT uses in Bangladesh increasing day by day.

This research is aimed to find out technostress on teachers due to the increasing IT uses among teachers. For that reason, we are asking the following research question for investigate technostress among teachers.

RQ1: Is there any impact of technostress, when teachers use IT?

RQ2: Which factors are causes of technostress & what is the outcome?

1.3 Objectives

The stress research area is extensive, where technostress-related study has not been widely discussed. Two recent studies have emphasized the importance of technostress by studying the impacts of technostress (Ragu-Nathan et al. 2008; Tarafdar et al. 2007). These studies have discovered that, as a human beings technostress has lower productivity and job satisfaction, and decreased organizational commitment. These studies also found the importance of technostress. But it is not clear that, which characteristics of technology create stress among teachers. The conceptualization basically hides the technostress phenomenon, making the limits and connection between technology characteristics and stress ambiguous. But, it is not clear which property of information system (IS) is bringing this increase in workload. In this current study, we will try to identify the technostress creators and their connection with stress. Moreover, there are a challenge for this research in both the stress and IS literature to discuss about the stressful impact of ICT use and new work arrangement enabled by ICTs (Cooper et al., 2001; Weber 2004). The research goal of this study is to find out:

1. The presence of stress when using an information system.
2. The negative impact of technostress on organizational commitment and job satisfaction.

1.4 Significant of this study

However, the research technostress on primary and secondary level teachers is rare. The effect of technostress on teachers attaches to this paper. And also, for further research about technostress in Bangladesh, this paper will be helpful. The needed data were collected by questionnaire and experimental test of technostress impact on work result checked with structural equation modeling. And last, we completed with a simple discussion of the result and further research plans.

LITERATURE REVIEW AND RESEARCH MODEL DEVELOPMENT

2.1 Technostress research

Nowadays, technostress has become the focus of considerable IS research (Tarafdar et al., 2007; 2011; Ragu-Nathan et al., 2008; Ayyagari et al., 2011 see Appendix A – Table 2 for contexts, antecedents and consequences in the literature: Maier, 2014). Those studies focused on the negative impact of technology use. One of those negative effect of IT usage is technostress. Technostress is generally defined as an IT user's experience of stress when using technologies (Ragu-Nathan et al., 2008). Stress arises when an individual appraises the demands placed by the environment as exceeding the individual's resources, thereby threatening the individual's well being (Cooper et al., 2001; Lazarus, R. S., 1991), This organized transactional process is mentioned to as stress. Stressors are the stimuli encountered by the individual, and strain is defined as an individual's psychological response to the stressors (Cooper et al., 2001) (Table 1).

In this flow of research, why IT users faced stress when using IT is identified by Ragu-Nathan et al.(Ragu-Nathan et al. 2008). They find out that, techno-invasion, techno-overload, techno insecurity, techno-complexity, and techno-uncertainty as techno-specific stressors.

Latter, Tarafdar et al. disclosed that individuals can respond psychologically or behaviorally to these stressors (Tarafdar, M., Tu, Q., & Ragu-Nathan, T.S., 2011), which are shortly briefed under the term of strain. Psychological strains are emotional and psychological reactions to a stressful stimulus (Tarafdar, M., Tu, Q., & Ragu-Nathan, T.S., 2011). Exhaustion, dissatisfaction and depression among others are covered in these psychological strains. The discontinuous usage of IT, doing workarounds, change of behavior, low performance and productivity among others are behavioral strains. Therefore, this type of strain is the reason for behavioral changes, which purposes to ignore stressful stimuli due to the responses of those who perceived stressors are feedback from the experience stressors.

Recently, Ayyagari et al. used the stressor-strain relationship (Ayyagari, R., Grover, V., & Purvis, R., 2011), which enlarges the analysis from Tarafdar et al. (Tarafdar, M., Tu, Q., & Ragu-Nathan, T.S., 2011) by identifying acquaintance. Here, 3 classes of technology property are arisen, that is hypothesized for the impacting factors of stressors. The classes are usability property, dynamic property, and intrusive property and reflect different consciousness like usefulness, complexity, reliability (as a usability property), presenteeism, anonymity (as an intrusive property), and pace of change (as dynamic property). Supported the person surroundings work model, Ayyagari et al. (Ayyagari, R., Grover, V., & Purvis, R., 2011) theorize these characteristics of technologies as a result of the causes of stressors. Notably, Ayyagari et al. (Ayyagari, R., Grover, V., & Purvis, R., 2011) didn't use the stressors which are recognized by Ragu-Nathan et al. (Ragu-Nathan et al. 2008). Although the stressors which we found among teachers is work overload, role ambiguity, work-home-conflict, invasion of privacy, and job insecurity. The authors discussing the well-informed stressor-strain relationship use previous research, so as to hypothesize that these 5 stressors cause exhaustion.

Table 1: Description of Stress-Related Terms

Term	Description
Stress	The overall transactional process
Stressors	The event or properties of events encountered by individuals
Strain	The individual's psychological response to the stressors

Summing up, technostress analysis reveals that technology properties are causes to people realize stressors, which then initiate people to respond to those stressors psychologically or behaviorally. From a methodological viewpoint, the impact of stressors on psychological and behavioral reactions is measured by using perceptive data and IS approaches (Eckhardt, A., Maier, C., & Buettner, R., 2012; Riedl, R., Kindermann, H., Auinger, A., & Javor, A., 2012; Riedl, R. et. al., 2013).

In the written below, we have developed our research model based on Ayyagari et al. (Ramkrishna Ayyagari, V. Grover and R. Purvis, 2011) and associate it with the behalf of IT usage among teachers. Adjusting with Ayyagari et al. (Ramkrishna Ayyagari, V. Grover and R. Purvis, 2011), we will discuss the impact of techno-induced work stressors (e.g., work overload, role ambiguity, work-home conflict, invasion of privacy) on exhaustion as a psychological strain response and research how techno-induced work stressors influence teachers when using IT.

2.2 Stressor-strain relationship

While investigating a study about stressor categories, Ayyagari et al. (Ramkrishna Ayyagari, V. Grover and R. Purvis, 2011) offer five stressors. Those are connected with IT usage context. Table 2 provides the name of the stressor and their definitions. As shown below in the table, the current study included stressor categories. *Work overload* is the perception that assigned work exceeds an individual's capability or skill level (Cooper et al. 2001; Moore, J. E., 2000). *Role ambiguity* is the unpredictability of the consequences of one's role performance and lack of information needed to perform the role (Cooper et al., 2001; Jex, S. M., & Beehr, T. A., 1991). *Work-home conflict* is the perceived conflict between the demands of work and family (Cooper et al., 2001; Kreiner, G. E., 2006; Netemeyer, R. G., et al., 1996). While *invasion of privacy* involves the perception that an individual's privacy has been compromised (Alge, B. J., 2001; Eddy, E. R., 1997). *Job insecurity* is the perception of the threat of job loss (Burke, R. J., & Cooper, C. L. (Eds.), 2000; Cooper et al., 2001). The last stressor job insecurity is not studied in this research due to the poor and partially small impact on exhaustion. After all, the school-college in which we did our study in, insufficiency of perception of our stakeholders does not provide these perceptions analysis in this survey.

Table 2: Source of stressors

Stressors	Definition
Work Overload	Perception that assigned work exceeds an individual's capability or skill level
Role Ambiguity	Unpredictability of the consequences of one's role performance and lack of information needed to perform the role
Work Home Conflict	An individual's perceived conflict between the demands of work and family
Invasion Of Privacy	Perception that individual's privacy has been compromised
Job Insecurity	An individual's perception of threat of job loss

2.3 Research Model: Construct and Hypothesis Development

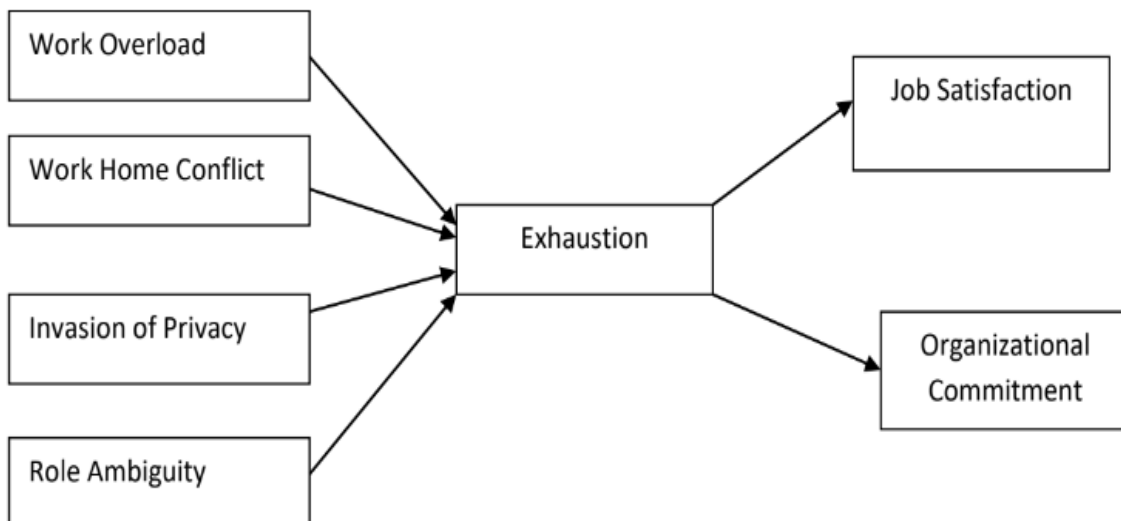
Is a challenge to develop a model with necessary stressors. Based on the review of receivable studies on technostress, stressor's impact on job satisfaction and organizational commitment are identified. It was also observed that techno-induced stressors can be reduced by stressors. This study mainly focuses on stressors, exhaustion and the effect of technostress among secondary and higher secondary level teachers. The proposed model (Fig. 1) relates stressors, exhaustion and effect of technostress.

The relationship between stressor and technostress effect has been documented in recent literature (Jena, R. K., 2015; Ragu-Nathan et al., 2008; Tarafdar et al., 2007). Therefore, we proposed the following hypothesis:

Table 3: Hypothesis Development

Serial No.	Hypot hesis
H1	H1a: Perceived work overload are positively related to perceived strain H1b: Perceived work-home conflict are positively related to perceived strain H1c: Perceived invasion of privacy are positively related to perceived strain H1d: Perceived role ambiguity is positively related to perceived strain
H2	Exhaustion negatively influence job satisfaction
H3	Exhaustion negatively influence organization commitment

Have a look at this model below, job satisfaction and organizational commitment dependent variables. And stressors work overload, work-home conflict, invasion of privacy and role ambiguity these stressors is independent variables. Exhaustion are dependent by those independent variables and dependent variables are dependent on exhaustion.



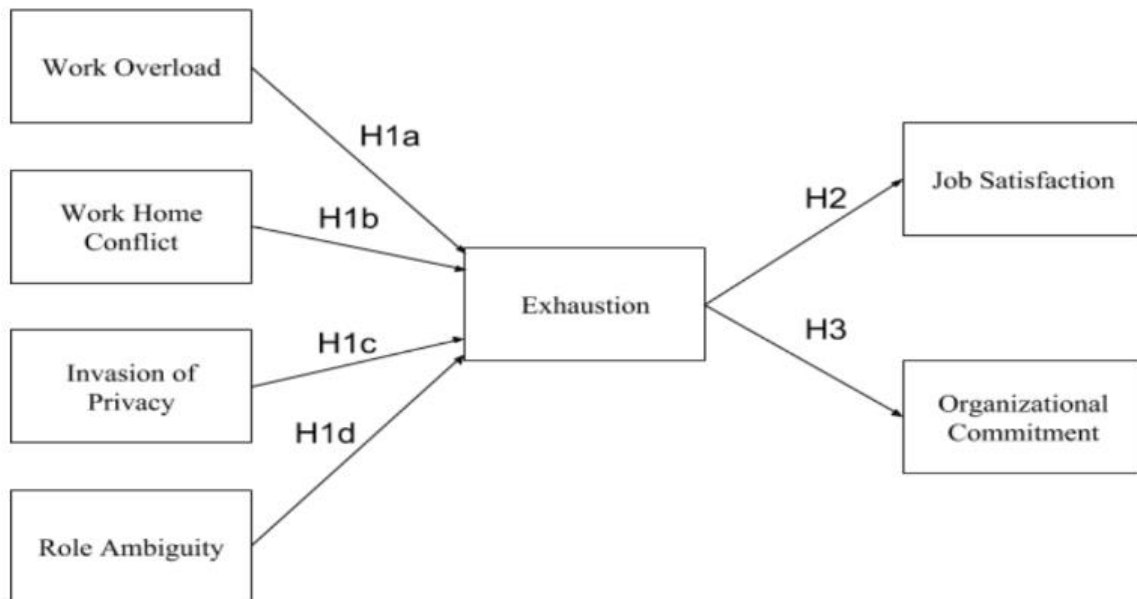


Figure 1: Research Model

RESEARCH METHODOLOGY

3.1 Quantitative research:

Quantitative research describes, infers and resolves problems using numbers. Emphasis is placed on the collection of numerical data, the summary of those data and the drawing of inferences from the data (Herbst, F., & Coldwell, D. 2004). In short, quantitative research generally seek to confirm hypotheses about phenomena, instruments use a more rigid style of eliciting and categorizing responses to questions and use highly structured methods such as questionnaires, surveys, and structured observation.

As we are resolving a problem with numbers, collecting numerical data and drawing an inference from data, so we use the Quantitative research method.

3.2 Research Process

There are seven main stages of the research process (i.e. problem, literature, hypotheses, research design, data collection, data analysis, and interpretation). Each stage affects theory and is affected by it as well (Frankfort-Nachmias, C., & Nachmias, D., 1992).

The research procedure began with the literature review in which the issue or research questions were exhibited by perceiving gaps in the literature. A review of related literature was discussed in Chapter Two and the research questions of this study were recorded in Chapter One.

A review of literature additionally prompted the distinguishing proof of the important speculations, which went about as a stage in building up the research model and hypotheses for this analysis. Chapter Two also narrates the research model and theoretical upheld hypotheses of this research.

The following stage was to decide the most reasonable research configuration to be utilized in this research. First, the researcher expected to recognize the reasonable research worldview as portrayed in the before an area of this section. Having chosen the exploration worldview, the fitting research configuration was then utilized.

In the estimation stage, cautious consideration was given during the process of building up the study survey. In the last phase of this stage, a pilot study was done to distinguish the reliability and the face validity of the overview survey. The outcomes from the previously mentioned stage were used to make the important changes in accordance with the review polls. Once the survey questionnaire was reconsidered and settled, the concluded instrument was used to collect data from the sample.

Information was then broken down after two resulting stages. In the first place, primary data investigation was used to overlook the information and to get the general perspective of the respondents. In the second stage, structural equation modeling was utilized. Analysis of the data is clarified in Chapter Four.

The last stage part Six talks about these issues included the translation of the discoveries and the exchange of the implication of the discoveries. In giving a clear clarification and detailed discussion of the discoveries, the researcher needs to meet with significant hypotheses and literature.

3.3 The Survey Method

The Survey method is the technique of collecting data by asking questions to stakeholders who are thought to have desired information. A formal list of questionnaires is prepared. Generally, a non-disguised approach is used. The respondents are asked questions on their demographic interest opinion. Survey research is defined as "the collection of

information from a sample of individuals through their responses to questions" (Check, J., & Schutt, R. K., 2012). This kind of research allows for a variety of methods to recruit participants, collect data, and put various methods for analyzing data. Survey research can use quantitative research strategies (e.g. using questionnaires with numerically rated items), qualitative research strategies (e.g. using open ended questions), or both strategies (i.e. mixed methods). As it is often used to describe and explore human behaviour, surveys are therefore frequently used in social and psychological research (Singleton Jr, R., Straits, B. C., Straits, M. M., & McAllister, R. J., 1988).

The essence of survey method can be explained as questioning individuals on a topic and then describing their responses (Jackson, S. L., 2015). Survey could work as an accurate means of assessing information about the sample and enables the researcher to draw conclusions about generalizing the findings from a sample of responses to a population (Creswell, J. W., 1994). Besides, this method is suitable for a research with a large sample size 2 (Hair, B., Bush, R. P., & David, J., 2003) as a survey is quick, inexpensive and efficient to be administered (Churchill, G. A., & Iacobucci, D., 2006; Sekaran, U., & Bougie, R., 2016; William, G. Z., 2003). Finally, a survey is suitable when asking about respondents thoughts, opinions and feelings (John J. Shaughnessy and Eugene B. Zechmeister., 1997) as well as collecting data relating to beliefs, attitudes and motives (Burns Alvin, C., & Bush, R. F., 2000).

Survey method pursues two main purposes:

- Describing certain aspects or characteristics of population and
- Testing hypotheses about the nature of relationships within the population. Because the lecture review, for this examination things for the seven constructs work overload, work-home conflict, strain, Invasion of privacy, role ambiguity, Job satisfaction and organizational commitment are created. Things for, Job satisfaction, Organizational commitment were drawn from Ragu-Nathan et al.(2008). Things for Work-Home Conflict, Invasion of Privacy, Work Overload, Role Ambiguity , Strain were taken from Ayyagari *et al.* (2011).The things for each of the seven builds were altered as proper for the setting of this investigation. All things were estimated on a seven point Likert scale: 1 – strongly disagree to 7 –strongly agree. A option of ‘‘Neutral’ ’was also provided to make the responses more flexible.

3.4 Survey Questionnaire Development

This is a common approach used in developing a survey instrument as it would bring two major advantages such as the existing instruments have already been assessed for validity and reliability and also by using the existing instruments, it enables comparison to be made between the new results with the previous results from other studies (Kitchenham, B. A., & Pfleeger, S. L., 2002). Questionnaires should be simple, straight to the point and easy to read (Lorelle Frazer, L., & Lawley, M., 2000). So, Watchful consideration has been paid in designing the instrument especially in the wording used and ordering of the questions. The maximum words used in most of the questions did not exceed 20 words as suggested by Horst (1968) and Oppenheim (1986). Respondents possible fatigue in the form of responding carefully to the earlier questions and carelessly to later ones was minimized by placing the relatively less important questions (demographic details) in the later part of the research instrument (Alreck, P. L., & Settle, R. B., 1995). The overall length of the questionnaire was less than 12 pages which is a preferable length for a survey (Lorelle Frazer, L., & Lawley, M., 2000). The questionnaire consists of two sections. The first section was focused on items to measure the constructs of our research model and the second section elicited the demographic data.

Table 4 : Questionnaires Adaptation

Antecedents	Adapted from
Work Overload	Moore, J. E., 2000
Work-Home Conflict	Kreiner, G. E., 2006; Netemeyer, R. G., et al., 1996
Invasion Of Privacy	Alge, B. J., 2001; Eddy, E. R., 1997
Role Ambiguity	Moore, J. E., 2000
Strain	Moore, J. E., 2000
Job Satisfaction	Jena, R. K., 2015
Organization Commitment	Jena, R. K., 2015

3.5 Questionnaire

The method has been recognized as an effective means of gathering data from large samples (McClelland, S. B., 1994) and could be considered as the most common method applied in collecting data. This research related questionnaires as an instrument of information gathering. The questionnaire could be defined as a reformulated written set of questions to which respondents record their answers usually, within rather closely defined alternatives (Sekaran, U., & Bougie, R., 2016). The questioner has two section.

Section A, has 25 questions asking respondents to prove our hypothesis and participant had to answer by marking based on the scale where Seven-point Likert items were mentioned.

Section B covered the demographic information of participant.

3.6 Data Collection Procedure

Self-administered questionnaire refers to a data collection technique in which the respondents reads the survey questions and records his or her responses without the presence of a trained interviewer (Hair, B., Bush, R. P., & David, J., 2003). Dillman (2007) argued that considerable evidence suggests that people are more likely to give honest answers to self-administered than to interview questions. Agein, a self-administered survey helps to minimize the tendency of social desirability bias to take place whenever sensitive data are requested (Burgoon, J. K., Stern, L. A., & Dillman, L., 2007). However, In collecting the data we use self-administered questionnaire. Respondents can take time to think and answer the questions and look for further information when necessary (Aaker, D. A. day, GS, 1990; Emory, C. W., & Cooper, D. R., 1991). This method enables respondents to finish the questioners at their own particular time and accommodation. We travelling to the respondents location and a representative of the researcher hand-delivering survey questionnaires to respondents that called drop-off and collect method. This method ensures the availability of a person to answer questions as questionnaires were hand delivered by the representative who is working in the same company with the respondents this method also helped to stimulate interest of the respondents in completing the questionnaire through interaction between surveys were collected by the representative after the respondents finished (Hair, B., Bush, R. P., & David the representative and respondents (Hair, B., Bush, R. P., & David, J., 2003). Then, the completed, J., 2003; William, G. Z., 2003).

A total of 170 questionnaires were distributed among the teachers of primary and secondary level of several school of our country. 152 questionnaires were returned with a response rate of 89%. The questionnaire consists of two sections. The first section was focused on items to measure the constructs of our research model and the second section elicited the demographic data.

3.6.1 Demographic Profile

The statistic of the respondents arranged in Table 5 were gotten from survey. A Large portion of the respondents was Male which is 77%, and the recurrence of the females is 23%. Most of teacher are over 15 years of duration services and maximum teachers teaching area are arts 96%. Among the teachers a large handed 54.6% are spent 1-5 hours per day on information technology or information system. Also show that greatest teachers have ICT training.

Table 5: Demographic Information

Category		Frequency	Percentage
Gender	Male	117	77
	Female	35	23
Duration of service	Less than 5 years	24	15.8
	6-10 years	30	19.7
	10-15 years	38	25
	Greater than 15 years	60	39.5
Education	HSC	8	5.2
	Bachelor	91	59.9
	Postgraduate	53	34.9
Teaching area	Arts	96	63.2
	Science	40	27
	Commerce	16	10.5
Spent per day with IT/IS	Less than 1 hour	35	23
	1 to 5 hours	83	54.6
	6 to 10 hours	34	22.4
ICT training	Yes	146	96.1
	No	6	3.9

3.6.2 Data Analysis strategy

To break down the exploration demonstrate we used the Partial Least Squares (PLS) analysis using the SmartPLS 3.0 software. Following the prescribed two-stage analytical strategies by Anderson and Gerbing (1988). We experimented the measurement model (validity and reliability of the measures) followed by an examination of the structural model (testing the hypothesized relationship) (see F. Hair Jr, J. et al., 2014). To examine the significance of the path a bootstrapping method (152 resamples) was used (F. Hair Jr, J. et al., 2014).

RESULT AND DISCUSSION

To evaluate our model we measured **Average variance extracted (AVE)**,

Composite Reliability (CR), Discriminate validity and Effect Size.

4.1 Average variance extracted (AVE)

AVE is a measure of the error-free variance of a set of items. It was proposed by Fornell and Larcker (1981) as a measure of the shared or common variance in a Latent Variable (LV), the amount of variance that is captured by the LV in relation to the amount of variance due to its measurement error (Dillon, W. R., & Goldstein, M., 1984; Fornell, C., & Larcker, D. F., 1981). Adequately convergent LV's should have measures that contain more than 50% explained or common variance in the factor analytic sense less than 50% error variance (Dillon, W. R., & Goldstein, M., 1984). Fornell and Larcker also suggested. λ_i is the loading of x_i on X , Var denotes variance, ϵ_i is the measurement error of x_i , and Σ denotes a sum (Fornell, C., & Larcker, D. F., 1981).

4.2 Composite reliability

Composite reliability is usually calculated in conjunction with structural equation modeling. Latent Variable (LV) reliability is a measure of the correspondence between the items and their LV, the correlation between an LV and its items, and "correlations less than 0.7" ignore measurement error. Sum all factor loadings, square this sum (call this SSI). Sum of all error variances of each indicator (call this SEV).

$$\text{CR} = \text{SSI} / (\text{SSI} + \text{SEV})$$

4.3 Discriminate Validity

The quality criteria are the square root of AVE is must be greater than the corresponding construct correlation which indicates that model construct is truly distinct from other constructs (Hair et al. 2010). To assess the measurement model, two types of validity will be examined. first the convergent validity and then the discriminant validity. The convergent validity of the measurement is usually ascertained by examining the loadings, average variance extracted and also the composite reliability (Gholami et al., 2013). The composite reliabilities were all higher than 0.7 and the AVE was also higher than 0.5 as suggested in the literature (see Table 6). The discriminant validity of the measures (the degree to which items differentiate among constructs or measure distinct concepts) was examined by following the Fornell and Larcker (1981) criterion of comparing the correlations between constructs and the square root of the average variance extracted for that construct (see Table 7). All the values on the diagonals were greater than the corresponding row and column values indicating the measures were discriminant.

F2: F2 measure to determine the effect of independent variable. Cohen (1988) names the thresholds of 0.02, 0.15 and 0.35 as measuring small, medium and large effects.
Measurement Model

We measured average variance extracted (AVE) and composite reliability (CR) and discriminate validity. As F. Hair Jr, J. et al. 2014 suggested after the research model was formed, researchers must test the outer model. See table 6.

Table 6: Convergent Reliability and Average Variance Extracted

	Composite Reliability	Average Variance Extracted (AVE)
EX	0.888	0.622
IP	0.846	0.581
JS	0.854	0.663
OC	0.800	0.571
RA	0.794	0.581
WHC	0.823	0.610
WO	0.841	0.639

Table 7: Latent Variable Correlations (discriminate validity)

	EX	IP	JS	OC	RA	WHC	WO
EX	0.789						
IP	0.492	0.763					
JS	0.557	0.215	0.814				
OC	0.578	0.282	0.679	0.756			
RA	0.300	0.392	0.327	0.254	0.762		
WHC	0.640	0.361	0.508	0.469	0.438	0.781	
WO	0.522	0.323	0.498	0.506	0.540	0.679	0.799

Focusing on the quality criteria where AVE must be greater than 0.5 which will reflect at least 50% of items explains the construct and composite reliability must be greater than 0.7 (F. Hair Jr, J. et al. 2014). Table 7 shows that the square root of AVE is greater than the corresponding construct correlation which indicates that our construct is truly distinct from other constructs (Hair et al. 2010). We can state that both criteria is fulfilled for our variables.

4.4 Structural Model

The hugeness of the speculation is estimated by the essentialness level of every way coefficient. the relationship between EX on JS and OC has significant positive impact. We got Ex($\beta= 0.557$, $p < 0.01$) on JS and EX ($\beta= 0.578$, $p < 0.01$) on OC. Which support our H1 and H2.

We also found IP ($\beta= 0.317$, $p < 0.01$), RA ($\beta= 0.119$, $p < 0.01$), WHC ($\beta= 0.462$, $p < 0.01$), WO ($\beta= 0.170$, $p < 0.01$) has significant positive impact on EX.

Table 8: Structural model result

Hypothesis	Relationship	Path coefficient	T Value	Result
H2	EX -> JS	0.557	9.882	Supported
H3	EX -> OC	0.578	11.049	Supported
H1c	IP-> EX	0.317	4.210	Supported
H1d	RA -> EX	-0.119	1.688	Supported
H1b	WHC -> EX	0.462	5.286	Supported
H1a	WO -> Ex	0.170	1.846	Supported

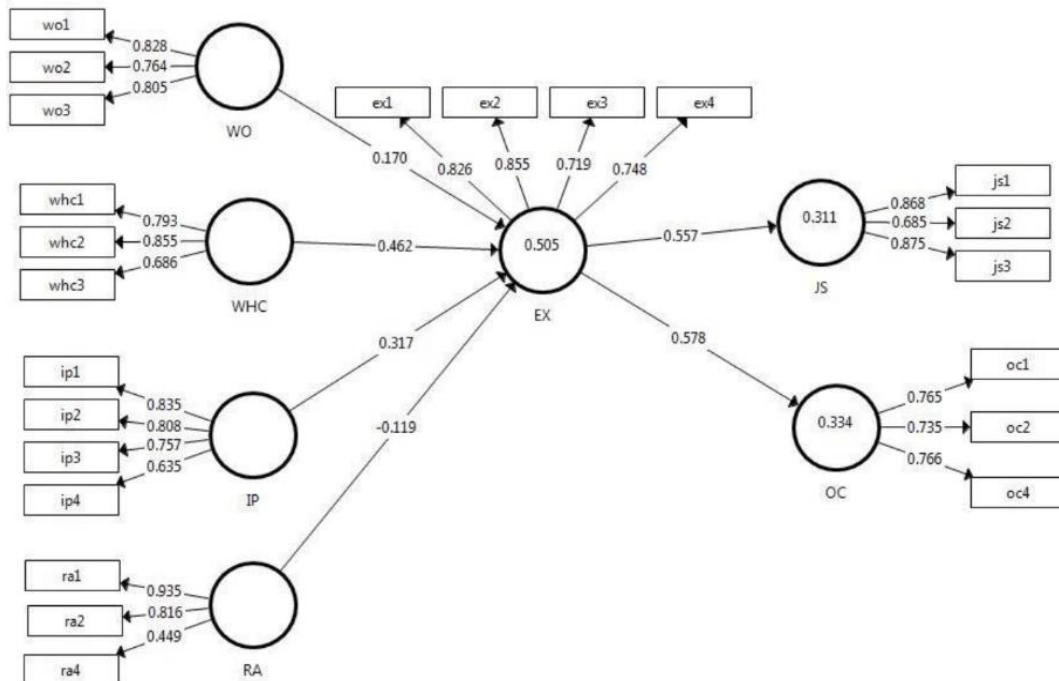


Figure 2: Tested model with result

4.5 Discussion

In an effort to add to the information on Technostress look into collective learning conditions, this investigation gave further understanding of Technostress, its sources, segments and appearance. This study evaluated the appearances of Technostress among different primary and secondary level education institutes in Bangladesh. Different causes of Technostress (work overload, work-home conflict, strain, invasion of privacy, role ambiguity, Job satisfaction and Organizational commitment) were related using six different hypotheses. The hypothesis test found a significant relationship found between work overload, work-home conflict, invasion of privacy, role ambiguity and exhaustion. Similarly, significant relationship between exhaustion and job satisfaction, and organizational commitment (see Table 8). The use of most recent ICT devices in community-oriented learning has moved toward becoming progressively vital in the present community-oriented instructive condition. The use of smart collaborative tools efficiently and effectively facilitates classroom collaboration among students and instructors both in voice and data communications. Disappointment to draw in understudies in the present community oriented learning condition will result in lost profitability, duty, fulfilment for the two understudies and academicians. Discoveries of the current ponder propose that techniques be created to address the teacher's affectability in the community-oriented instructive condition utilizing unique ICT empowered shared devices in order to decrease Technostress-related impacts. For example, adequate training on the latest tools and techniques, content, and instructional strategies should be utilized to reduce Technostress. So, ICTs appear to be creating situations where work demands exceed individuals' abilities (Tu, Q. et al. 2005). The results indicate that the constant connectivity provided by ICTs increases the workload by enhancing the speed of workflow and expectations of productivity (Clark, K., & Kalin, S., 1996). These findings support the arguments that constant connectivity provided by ICTs encroaches on the personal space of individuals. In the present networked world, the results indicate that it is a challenge to maintain a work-life balance. The model proposed that Perceived invasion of privacy is positively related to perceived strain. These discoveries propose that people are vigilant about the likelihood that their activities with ICTs be followed or observed. These findings support the arguments that constant connectivity provided by ICTs encroaches on the personal space of individuals. In the present networked world, the

results indicate that it is a challenge to maintain a work-life balance. It also shows that these results indicate that constant connectivity enables interruptions at work and constant changes in ICTs create situations in which conflicting demands exist known as role ambiguity. All of them are significantly positively related to Exhaustion. Exhaustion also negatively influences job satisfaction and organization commitment from the model we can see. Higher administration ought to give advance preparation and innovative help before executing new instruments and procedures in the shared learning environment. In collaborative learning and instruction, the administration should find a way to manufacture the required foundation to help cooperative learning. Stress-administration strategies are required to disprove unreasonably.

CONCLUSION

Firstly, effective improvement should be researched to reduce technostress among teachers, which harms them psychologically and behaviorally. There has no doubt about our technology that connected us personally and professionally. But, the more usage of technology can be stressful for us. This thesis paper will show us that the higher usage of technology could be a cause of stress related issues. It is also clear that particular IT properties carries over into our daily life. Therefore, IT providers have should give a look for responsive IT. Due to the technostress poor performance at work conduct to negative impact on organization. Secondly, teachers should increase their usage habit of IS and deal with stressors psychologically and behaviorally. To reduce technostress, they have should to deal with efficient time and management strategies

5.1 Limitations and Future Research

The primary constraint of this study was that it neglected to mirror the particular conditions that may have created overburden for every person. What's more, this study just sorted technostress on participants of school and could not separate the of social over-burden that happened outside of the organization. Work over-burden at school, where connections are more equivalent in nature, had all the earmarks of being experienced in an unexpected way, rivalry to that saw in the working environment, in which the various leveled structure of the associations is more conspicuous; along these lines, social overburden gave off an impression of being a more significant issue in the working environment in respect to that accomplished at school.

Age difference, gender, and skill is also a factor in reaction to technostress. Older people have more experience of negative stimuli and may react in a less negative manner (Ragu-Nathan et al., 2008)

Here the result is not reflected by particular variables. Other variables like individual's engagement, job insecurity which is affecting psychologically and behaviorally were not included in the research model. Researchers who studied technology overload as technostress identified various environments, which affected stress factors such as technology overload, surrounding different organizations (Ragu-Nathan et al., 2008). There are not very many related studies accessible in the literature, the validation and discussion of the result couldn't establish properly.

To overcome the above-mentioned limitations future research should expand the legitimacy of discoveries by means of an exact research show that mirrors the attributes of individual technostress and incorporates a bigger and more different gathering of innovation clients.

The outcome of this research collaborated to accepting the fact that there is a technological stress known as technostress and it is causing stress related issues. Our thesis is a step to find out the specific stress related issues and their impact on secondary and higher secondary level teachers' lives. This research was to find out whether there have any negative effects of ICT usage on teachers in organizations. In particular, the objectives of this study were to (i) presence of stress when using IS, and (ii) the negative impact of technostress on organizational commitment and job satisfaction. The results indicate levels of stress. For future work we recommend to include finding ways to reduce the stress. If opportunity arrived, we would like to review our questionnaire to add some questions and would like to ask the teachers for their recommendations for reducing technostress among them. We believe that our outcomes contribute to increasing literature to develop our view. So, we could figure out how to decrease the measure of stress among them and discover approaches to information communication technologies among teachers.

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ARTHA RIN ADALAT AIN AS A BOTTLENECK TO INDUSTRIAL PROGRESS: BANGLADESH PERSPECTIVE

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ABSTRACT

Artha Rin Adalat Ain (ARAA) of 1990 which was amended in 1997, 2003, 2004 and 2010 in Bangladesh, treats the industrial entrepreneurs of the private sector as like as slaves of a primitive age. The judgment of the aforementioned statement is the prime message of the research. In the ARAA, the researchers are intended to show some second-rated and inauspicious sections which are conducted barriers to continuing industrial expansion. As a consequence, large, medium and small industries are on the edge of the extinction for the practicing of ARAA which affects the overall development of our economy. Entrepreneurial risk is a common phenomenon over the life cycle of an industry. Thus entrepreneurs are not willing to break through an idea. Axiomatically our economy depends upon import-oriented goods and most of the organizations apply the monopoly product in the market. In this article, the researcher tried to manifest the controversial practices of the ARAA through the observation methods of research which is aimed to divulge the conspicuous sections of ARAA, those sections can be treated as the bottleneck to the industrial progress of Bangladesh.

Keywords: *Artha Rin Adalat Ain, Entrepreneurial Risk, Section, Industry.*

INTRODUCTION

Bangladesh is a common law-based jurisdiction. Generally, the most widespread legal systems in the world are the civil law, common law and religious law. The law of Bangladesh is primarily in accordance with the English legal system (Badruzzaman, An Overview of the Business Law and the Legal System of Bangladesh, 2016). Early British colonial government introduced the English Law and Polity in India which included present-day Bangladesh. The East India Company introduced the civil-military systems in

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the Indian subcontinent. This imposition had resulted to the conversion of simple indigenous law of India into the complex legislative and justice systems of the British colonial authority. After the end of the British colonial rule in 1947, Bangladesh went under the ruling of Pakistan. But, the legal system had minimal changes during 1947-1971 until the independence of Bangladesh from Pakistan. Thus, the trends of judiciary and sociology of modern Bangladesh law indicate that over the last 47 years, it has been struggling with an inherited judiciary, which is questionable from its own context (Mohiuddin, 2005). There are 999 laws in Bangladesh of which 366 are pre-independence laws and 633 have been made after the independence (Halim, 2006). There are different types of tribunal courts in Bangladesh. Apart from the aforesaid civil and criminal courts within the structure of the subordinate judiciary, there are good numbers of special courts and tribunals to deal with specific matters or offenses (Badruzzaman, An Overview of the Business Law and the Legal System of Bangladesh, 2016). The Artha Rin Adalat is one of the special courts and tribunals of Bangladesh. The Artha Rin Adalat is established under section of the Artha Rin Adalat Ain Act, 2003. Every financial institution is eligible to file suit for recovery of money against a loan defaulter under this act and every suit is filed through affidavit.

Now the fact is that, the judicial system of Bangladesh is jammed by huge backlog suites and cases similar to some other common law countries. Backlog of cases in the courts, and widespread judicial corruptions, put the condition of law and order in Bangladesh at hazard. Such a position of legal situation influences the world entrepreneurs badly who are interested in investing money in Bangladesh. The poor people of the country also suffers because of such legal situation (Mohiuddin, 2005).

Money plays a vital role in an industry and business organization. From the inception to the termination of industry money is required. Liquid money is very important to meet up the working capital of an industry. In our industrial system, banks and financial institutions (FIs) are indispensable and integral part of borrowing money for investment and working capital. One of the major characteristics or natures of business and industry is risk and uncertainty. Every business organization or industry remain under risk and uncertainty. So, Banks and financial institutions (FIs) should help the investor and owner of an industry to borrow money and to disburse the loan properly. In the product life cycle of an industry, we see the life line of a product is never stayed in a certain point. At that time, banking and financial institutions should help the industry by providing the loan to revive the critical situation.

When industry defaulted any loan amount, banks and financial institutions (FIs) try to impose hard and fast rules to collect that capital amount without any consideration and then banks use Artha Rin Adalat Ain (ARAA) for legislative action. At that time, they also violate many other rules and regulations. Bank tries to exercise some bad sections of Artha Rin Adalat Ain to ascertain the loan amount. Thus, different types of government help and subsidies are not fruitful, owing to the ARAA, for the betterment of industrial progression. It is known to all that at the time of transaction of loan, banks and financial institutions (FIs) never think about to the collection of that capital amount without any consideration. It is obvious that any law is established to ascertain to solve the efficacious and certain problem or conflict by ensuring proper justice. At the time of application of the Act, if there found certain faults it should be amended immediately.

Through this research, interested parties will get a transparent idea of the legal barrier of some sections of the ARAA which should be amended immediately for the betterment of the industrial progression and to ascertain the healthy environment for the industrial sector of Bangladesh. In the scenario of the development of financial institutions to the industries, many discrepancies are noticeable in this country. This study will help to show legal barriers of the industrial development.

LITERATURE REVIEW

Artha Rin Adalat or Money Loan Court was established under a law in 1990 to adjudicate the cases relating to the recovery of loans of financial institutions (Islam M. N., 2013). Prior to setting up of Artha Rin Adalat, there was no special law for recovery of loans. Banks had to file cases in sub-judge commercial courts to sue any defaulter. The Bankruptcy Act, 1997 has been enacted in March 1997. According to the Bankruptcy Act, all the District Judges are deemed as bankruptcy courts and they are empowered to authorize Additional District Judge to deal with and dispose of bankruptcy issues (Ali, Uddin, & Hossain, 2015). To strengthen the Artha Rin Adalat (Money Loan Court), a new Artha Rin Adalat Ain was enacted in 2003. Under the law, specialized courts for the settlement of disputes between the borrowers and the lenders were established in the premises of the District Judges Court. The Courts of Joint District Judge established under the new law have overriding powers over other laws of the land. This means, in case of conflict with any other law in force, the provisions of the new law relating to money loans shall prevail. Under the provisions of the Act, subordinate judges are appointed judges of the money loan courts in consultation with the Supreme Court (Islam M. N., 2013). However, the disposal of cases was procrastinated due to long legal

procedures and overburdened judges (Ali, Uddin, & Hossain, 2015). The law requires filing of all suits for realization of the loan of the financial institutions, banks, Investment Corporation, house building Finance Corporation, leasing companies and non-banking financial institutions, constituted under the provisions of financial institutions Act 1993, with the money loan courts for trial. Owing to the civil court, the money loan court has all the powers of the civil court (Islam M. N., 2013). Enactment of the Artha Rin Adalat Ain 2003 was to provide mainly for speedy procedures for obtaining decrees and execution. Provision was also made for Alternative Dispute Resolution to ensure early settlement of disputes through settlement conference and negotiations (Ali, Uddin, & Hossain, 2015). The overall suggestion for the Adalat is that the Ain, 2003 is aimed at expeditious disposal of the bank's/financial institution's claim for recovery of money which is, in fact, the money of the State (Petition, Heard 2015 & Judgement 2016).

OBJECTIVE OF THE STUDY

The main objective of the study is to show the first and foremost legal barrier of Artha Rin Adalat Ain (ARAA) to the progress of industry. Other related objectives are:

1. To highlight some important sections of Artha Rin Adalat Ain (ARAA) exercised by the banks and financial institutions (FIs) to collect the loan amount from the borrower.
2. To identify the contrast between Artha Rin Adalat Ain (ARAA) and banking policy.
3. To state the responsibility of ARAA in the wind-up policy.
4. To show the specific logical arguments in favor of the amendment of this act as early as possible for the enhancement of industrial sectors.

METHODOLOGY OF THE STUDY

This study has employed exploratory research methods owing to the nature of the study, with the aim of achieving the best outcome possible. The subjective assessment has been applied based on secondary sources of data to investigate the sufferings of the industrial entrepreneurs of the private sector. While doing this part of the research, the existing literature on the Artha Rin Adalat Ain (ARAA) and Alternative Dispute Resolution (ADR) has been explored and examined thoroughly. The study focuses on describing the litigation risk of the Arha Rin Adalat Ain (ARAA) to the industrial entrepreneurs of private sector in Bangladesh.

SOURCES OF DATA

Primary data were collected from the face to face unstructured personal interview of the joint director of Bangladesh Bank (BB), deputy secretary of Ministry of Industry, co-chairman of the Federation of Bangladesh Chambers of Commerce and Industry (FBCCI), standing Committee on Rehabilitation of Sick Industry, officials of Metropolitan Chamber of Commerce & Industry (MCCI), officials of Dhaka Chamber of Commerce & Industry (DCCI), some of the owners, managing directors and financial directors of selected industry. Secondary data were collected from the study which was as a source of different journals, articles, newspapers, laws, acts, rules, ordinances, sections, writ petitions, gazettes, agenda and the minutes of the meeting and the report of the ministry of Industry regarding the industrial rehabilitation in Bangladesh.

ANALYSIS AND FINDINGS

Mainly two objectives are conspicuously found in the act of Artha Rin Adalat Ain (ARAA). 1. The Act only confines to the loan recovery by financial institution and 2. Only confines to loan (Hoque, 2012). The adverse effect of this proposition is that it fails to amalgamate all the loan recovery disputes between the financial institutions and parties. ARAA is used to collect the loan amount by treating the defaulter as a fraudulent person. This activity destroys the purposes of the loans of financial institutions (FIs) and industries.

There are different initiatives taken by the government to expedite industrial activities. The government of the People's Republic of Bangladesh subsidizes different amounts of money and provides incentives in different years to survive the sick industry. But the fact is that the sick industry couldn't revive them from the sick condition owing to some intrinsic barriers of ARAA.

When any policies, laws, ordinances, acts, rules, and regulations are implemented by the government, there remain the blessings of both parties. But in the Artha Rin Adalat Ain (ARAA), the researchers have found a disparity, and basically, it is beneficial to the banks and financial institutions (FIs). Banks and financial institutions (FIs) provided loans according to their policy, but at the time of collecting the loan amount (Chowdhory, 2017), they take the help of some second-rated sections of the Artha Rin Adalat Ain (ARAA) and also take legitimate action against the defaulted borrowers. It can be treated as one sided rule. Some of these sections are stated below which are inauspicious for running an industrial smooth movement.

SELLING MORTGAGE PROPERTY

(1) Subject to the provisions of sub-section (2), any financial institution, any property owned or controlled by the defendant, who has been lien with a lien or pledge, and the legal right to sell, or the plaintiff has been deported, without making any sale, and not adjusting the amount of money received from the sale of the loan, the lender will not file a suit in the court².

(2) Notwithstanding the provisions of sub-section (1), if any financial institution makes a lawsuit without selling lien or pledge of any property of defendant which is possessed by the same and which may have the authority to have its disposal of the same, being sold immediately the property aforesaid as per the rule mentioned earlier, and thereafter the money incurred by sale, shall be adjusted with the loan and the matter shall be notified to the court³.

(8) Notwithstanding anything contained in any other Acts for the time being in force, if any secured moveable property and immovable property is sold by the power of Attorney under line pledge, hypothecation or mortgage, this sale may create legitimate title in favor of the purchaser and purchase of the purchaser may, by any means, not be challenged⁴:

Provided that, if there is any illegality or procedural loop-hole existed in the line of sale, the purchaser may ask for compensation from the end of the mortgagor-financial institution.

Under the Section 12, selling the mortgage property before filing suit or before getting final judgment is not just and violation of our constitution. Because if entrepreneur win in the case than bank cannot return.

The bank and financial institution (FI) took due care in ensuring that a mortgage was secured. The loan receiver can't file a case against the financial institutions under the aforementioned law (ARAA) (TheDailyStar, 2015). It is transparent to all that if an entrepreneur is in such a condition, industrial activities are not possible to continue for further activities. As a result, the industries are forced to stop their operation.

² Under the Section 12 and Subsection 1 of Artha Rin Adalat Ain 2003

³ Under the Section 12 and Subsection 2 of Artha Rin Adalat Ain 2003

⁴ Under the Section 12 and Subsection 8 of Artha Rin Adalat Ain 2003

The notorious provision as described under section 12 of this Act makes the financial institution very arbitrary. This is an absolute bias law in favor of financial institutions (FIs). Clause (1) of section 12 makes a provision that before selling of mortgage property the financial institution cannot file suit and clause (8) of the same section denotes that once a mortgage property is sold in auction no question can be raised against it. That means once sold the property is sold forever (Hoque, 2012).

HANDOVER THE POSSESSION OF THE PROPERTY

(5) If a financial institution, in favor of its purchase or sale of movable or immovable property under sub-section (3) for the benefit of the activities undertaken under this section, before or after the sale of possession or control of such immovable or movable property, If he considers it necessary to surrender to the owner or to control him, or, as the case may be, the surrender of the buyer. If the financial institution requests in writing, the defendant or the debtor will surrender the possession immediately to the financial institution or, as the case may be, to the favor of the buyer⁵.

(5A) In spite of a request made in sub-section (5), if the defendant or debtor has not possessed the possession and possession of the property mentioned in the sub-section, financial institution or, as the case may be, the buyer has not surrendered, then the financial institution is concerned with the local jurisdiction by applying to the District Magistrate, the possession and control of such property shall be obtained from the defendant or the debtor, As the case may be, in favor of the buyer may request to surrender; And, in the same manner, the District Magistrate or its designated first-class magistrate, subject to the satisfaction of being mortgaged or liable against the debt given in favor of the financial institution, its possession and control can be obtained from the defendant or the debtor, financial institution or, as the case may be, financially On behalf of the company, the customer will surrender⁶.

According to the Section 12, sub-section (5) and (5 Ka) (as per amendment of 30 march, 2004): Handover possession of the property in favor of the bank or financial institution as per the desire of the banking professional, which is a direct violation of human rights and constitutional rights of the citizen. But it is a common phenomenon of the law of Artha Rin Adalat Ain. Under the Banking Company Act 1991, the company (financial institution) can sell the mortgaged property in default of payment of any loan or any installment within six months thereof, the financial institution gets exclusive authority to

⁵ Under the Section 12 and Subsection 5 of Artha Rin Adalat Ain (Amended 2004)

⁶ Under the Section 12 and Subsection 5 (Ka) of Artha Rin Adalat Ain (Amended 2004)

sells the mortgage land. So, if any person for any unavoidable or grave necessity, fails to pay his loan or any thereof and without any compromise the financial institution sell that mortgaged land, then party has no remedy at all to get back his property; most of the time this vanishes the bright future of many growing industries and business institutions (Hoque, 2012).

COUNTER CLAIM OF BORROWER

(1) No financial loan shall be recovered by any officer or employee of any financial institution, by the court under this Act, in the form of a loan⁷.

(2) In case of a debtor, a financial institution, in the court under this Act, in any case arising out of the concerned loan, no suit can be filed by claiming any remedy, and by submitting written reply in the case lodged by the borrower-plaintiff, plaintiff-financial institution, In the written reply, the counter-off or counter claim cannot be included⁸.

(3) If a case has been filed in any court other than related to debt arising out of the loan, the case shall not be accompanied by an analog hearing in the court established under this Act, or the case pending in the court established under this Act. - The other court shall not be heard together in another court, along with the case pending in another court; and the case filed under this Act shall not be postponed for any such reason⁹.

In the provision of section 18(1), it is denoted that no suite can be eligible, under above mentioned fault, for dismissed or discharged for default or above mentioned fault of any bank official and in the section 18(2) & (3), Defendant or owner of industries will not be able to claim any set-off or to make counter claim against the bank or bank official nor will be allowed to claim any compensation by submitting any suit against bank (plaintiff) analogously hearing or simultaneously in Artha Rin Court due to violation of contract, fraudulence activities including negligence, malpractices of bank officials.

If banks and financial institutions (FIs) do so, it is impossible to a private sector entrepreneur to sustain in the industrial development. It was thought that there are many causes to be lone defaulter and there may some further steps to be taken by the owner (defaulter) for a counterclaim. But the Artha Rin Adalat Ain (ARAA) stops all procedurs by one section. There remains no chance to revive or to survive any organization or industry.

⁷ Under the Section 18 and Subsection 1 of Artha Rin Adalat Ain 2003

⁸ Under the Section 18 and Subsection 2 of Artha Rin Adalat Ain 2003

⁹ Under the Section 18 and Subsection 3 of Artha Rin Adalat Ain 2003

PROVISION OF LOAN AMOUNT

(6) Money cannot be dismissed because of any suit, plaintiff's absence or failure in the loan court, and in such a case, the court will examine the documents presented in the document, and decide the suit in the quality analysis¹⁰.

As per section 19(6) of the Artha Rin Act of 2003, it is clearly denoted that any pending suit in the Act, shall not be aside in the consequence of the absence of the plaintiff or failure.

At the time of providing loan to the a loan receiver, bank and financial institution ensure the loan amount by mortgage of property and when they claim the loan amount, they claim the capital amount with interest (Chowdhory, 2017). As a result, a different subsidy of government and industry owners' initiative never goes in a positive line. Thus, industry owners are forced to stop their activities.

Without the provisions of this Act, no question shall be raised regarding any proceeding or any order, verdict or decree of the court in the debt loan court, and without any provision of this Act, and by appealing to any court or authority, seeking any remedy or prayer No court or authority shall entertain such an application if he is made¹¹.

As per section 20, regarding any order or proceedings of Artha Rin Adalat Ain cannot be raised to High Court or to any other superior authority and no logical reason of the plaintiff is acceptable according to the aforementioned section which is totally misleading against any law. Once again, the Artha Rin Adalat Ain (ARAA) shows that it's a second one-sided rules. This provision is one of the main reasons to create a barrier of industrial progress.

CIVIL ORDER TO ARREST WITHOUT ALLOWING PROOF

1) subject to the rules of subsection (12) in part of an effort to cause of payment of the decreed money against the application so submitted by the decree-holder, the Artha Rin Adalat, may direct to arrest the debtor in the civil jail for 6 (Six) months¹².

¹⁰ Under the Section 19 and Subsection 6 of Artha Rin Adalat Ain 2003

¹¹ Under the Section 20 of Artha Rin Adalat Ain 2003

¹² Under the Section 34 and Subsection 1 of Artha Rin Adalat Ain 2003

As per section 34, Defendant or the owner of industries in the Artha Rin Adalat case can be put to the jail for compelling or forcing him to pay the bank money without allowing him to prove the matter of violation of contract, fraudulent activities, negligence, malpractices of bank and financial institution officials.

These types of activities discourage entrepreneurs to take an endeavor to establish a new idea for a business/organization/industry. In the context of Bangladesh, there are many other unavoidable risk and uncertainty. This type of uncertainty and risk may cause the matter of violation of contract. But according to the Artha Rin Adalat Ain (ARAA) there is no scope to prove the industry owners the exact cause of the breach of contract.

APPEAL COST OF BORROWER TO THE HIGH COURT

(1) If a third party submits a claim in the case of a lawsuit under the provisions of the Code of Criminal Procedure, in the case filed by the Debt Court of Decree or Order, the court shall not hear the claim directly by the written objection against it in the 30 (thirty) days unless the direct debate is rejected¹³. [(2) above, the claim in the case, the applicant, the decree of money, or decreed amount of money, partly already earning as has outstanding parts of the 10% of the equivalent securities or bonds shall submit, and similar securities or bonds submitted, unless the claim is rejected and the demand shall be overruled]¹⁴.

(1) If any amount of money is aggrieved by the order or decree of the loan court, if the amount of the amount of the accumulated money is more than 50 (fifty) lac taka, then subject to the provisions of sub-section (2), [the next 60 (sixty) days] of the High court, and decree the amount of 50 (fifty) lac taka or less, [the next thirty (30) days to appeal the District Judge's court]¹⁵.

(2) If the appellant does not submit the declaration to the court in the cash decree financial institution, or the claimant's claim as partial recognition of the amount of money equivalent to 50% of the amount of the decree, then submitting the declaration to the court, and if the application is not submitted in court with the proof or application of the same, No appeal shall be entertained under section (1)¹⁶.

¹³ Under the Section 32 and Subsection 1 of Artha Rin Adalat Ain 2003

¹⁴ Under the Section 32 and Subsection 2 of Artha Rin Adalat Ain (Amended 2010)

¹⁵ Under the Section 41 and Subsection 1 of Artha Rin Adalat Ain (Amended 2010)

¹⁶ Under the Section 41 and Subsection 2 of Artha Rin Adalat Ain (Amended 2010)

42 (1) No court shall receive any petition for revision against the judgment or decree so pronounced in the appeal, unless the petitioner accompanied by an evidence of depositing an amount equivalent to 75% of the decreed money to concerned financial institution along with a sum of money equivalent to 50% money on the eve of lodgment of appeal or unless he admits the claim of the plaintiff, he may submit a token to the court that the same has duly deposited bank draft, pay order or any negotiable instrument as a security thereof¹⁷.

(2) Notwithstanding the provisions of sub-section (1), if the plaintiff-financial institution has filed a revision under this section, it shall not be deposited or submitted for any money or security as per the above-mentioned amount¹⁸.

As per section 32(2), 41(2), and 42(1)(2): The owner of industries are not allowed to file any appeal or revision to High Court or Superior Court against any order of Artha Rin Court without paying 25% and 50% for appeal and for revision 75% of the decimal amount in advance, but as per sub-section(2) of section 42, the bank and financial institution officials are not required to pay any amount in the High Court, allowing a great disparity of law and justice. This is quite injustice for the industry owners.

It is transparent to us that, if the industry owners (defaulter) are able to pay the decreed amount they must be able to pay their loan amount first. These types of rules are only imposed for the owners of the industry, not for the banks or financial institutions. This is very much unethical and encumbrance law of this act. These provisions must be abolished to save the industrial sector.

REPLY AGAINST THE MOBILE COURT

If the defendant-nominated party does not file an appeal, revision, appeals or appeals in any higher court against the decree given by the debt-receiver, on the amount of money accrued for a period up to the day of the receipt of the decree from the day of the suit, [12% (twelve percent)] annual simple rate, no appeal, revision or any other application, if any superior court for the aforesaid period of [16%], appeals in the appeal section against the decree or order of appeals or higher courts, and 18% (eighteen percent) annual simple interest, subject to the provisions of sub-section (3), shall be imposed¹⁹.

¹⁷ Under the Section 42 and Subsection 1 of Artha Rin Adalat Ain 2003

¹⁸ Under the Section 42 and Subsection 2 of Artha Rin Adalat Ain 2003

¹⁹ Under the Section 50 and Subsection 2 of Artha Rin Adalat Ain (Amended 2010)

Section 50(2) which was amended in 2010 acts like a mobile court on the street. Such as if one tries to reply against the order of magistrate, he will be punished by double. If one file a case in the higher court and do not win the case than he will pay 25% interest. Bank authority will not be liable for violation of contract, negligence malpractices, including fraudulent activities or any fault of the bank official unilaterally.

In several times we found that the industrial owner has never gotten their (borrowed money) loan amount in due time when they needed it, owing to a bureaucratic problem (red-tapism). Bank officials observe an excessive adherence to the rules and formalities. Hence, the victim is only the industry owner.

INJUSTICE OF BANKING POLICY

Notwithstanding anything contained in this Act or any other law where any loan and advance or any other debt received from any bank company shall be written off, there shall be no obstruction in taking legal proceedings in respect of the loan, advance or debt related to the abolition²⁰.

Section 28 (Ka) of Banking Company Act of 2001 which explain written off does not mean weaver which is simply to misguide the international community & Bangladesh nationals so as to severe the interest of the vested group (Chowdhory,2017).

Only the financial institutions (FIs) can invoke the jurisdiction of the court for filing any suit if any party becomes a victim of the settlement of his / her loan or fined discrepancies about the amount of loan or interest amount, then he / she has no right to protect his right under this act (Hoque, 2012).

RECOMMENDATIONS

If the government helps the industry to become free from the litigation harassment, different blockage amounts of money will be collected from the defaulter and the industry can be regenerated its activities. So, our government should consider reforming the malicious sections of Artha Rin Adalat Ain (ARAA).

1. For the willful defaulter, Artha Rin Adalat Ain needs to be applied.
2. Alternatively, a direct provision can be created in ARAA empowering the lender to recover the asset with the help of the police or similar agency.

²⁰ Bank Company Act 2001 (Amended) Under Section 28 (KA)

3. The problem of loan recovery cannot be addressed only by undertaking legal reforms. At the same time, the issues like ethical standards and accountability of the concerned individuals and the overall law and order situation must be improved.
4. To save a vulnerable defendant from the unreasonable demand of the banks and financial institutions (FIs), and also to save the defendant's property from being sold at a shockingly low price, which very often takes place in connivance with the staff of the bank or financial institution and the concerned court staff, if needed, the Adalat may exercise its inherent power to record the detailed reasons to substantiate its order.
5. The Adalat should bear in mind that while there are unscrupulous defendant/s to delay the disposal of the Artha Rin suits and thereby frustrate the scheme of the Ain, 2003.
6. Some bonafide defendants might be victimized by Adalat's inconsiderate hurriedness.
7. Banks and financial institutions (FIs) should follow one law for providing and collecting the amount of defaulted loans.
8. The government should impose the exact law on both parties to eliminate the disparity.
9. The government should immediately make a new law for sick industries and proper governance of all private banks.
10. For the industrial development of Bangladesh, the government should remove hard and fast rules and regulations by providing different types of policies and counseling support.
11. Artha Rin Adalat Ain should be considerate of the unavoidable risks and uncertainty of any industry.
12. To maintain the sustainable development of the economy in the country, the government should maintain a standard ration of industries and financial institutions.

Artha Rin Adalat Ain (ARAA) will ensure effective and prompt remedies regarding loan dues of financial institutions, especially to save interest on the financial condition and to check the balance of our economy. To convert the loan into an effective investment, some provisions of Artha Rin Adalat Ain (ARAA) need to be revised immediately.

CONCLUSION

The government of the People's Republic of Bangladesh, banks, and financial institutions have to rethink about the revival of the industry from the sick condition when any signal of sickness is shown in a specific industry. Otherwise, our ultimate economic growth will not be ascertained as desirable growth. If we see the present scenario of broad industry in Bangladesh, it contributes 35.14 percent in FY2018-19 to the GDP (Finance, Bangladesh Economic Review (Archive), 2019) whereas the contribution of the manufacturing sector is holding the highest position. If the prescribed amateur provision of the section of the Artha Rin Adalat Ain (ARAA) is changed, industrial sector will help to increase the GDP at a great percentage.

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Printed in March 2022