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## Editorial

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With thanks,

### **Editor in chief**

Abdullah Al Masud, Ph.D.

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## Challenges of Floristry amid COVID-19: Bangladesh's Perspective

Amrita Nandy<sup>1\*</sup>, Joysree Das<sup>2</sup>, Md. Sohel Rana<sup>3</sup>, and Md. Alamgir Hossain<sup>4</sup>

### Abstract

In the course of COVID-19, floristry all over the world passed through great distress. The paper examines the recent condition of the flower business amid the pandemic time in Bangladesh. A mixed-method approach has been applied where secondary data reveals the harm done to the flower cultivatable lands as many flower farmers started harvesting to meet their day's end once demand shattered. Further, primary data collected through interviews with retailers highlights the new threat of artificial (plastic) flowers, which are replacing the cut flower market because of their long product life and low cost. Yet again, this study indicates the prospect of the Bangladeshi floral business in cultivating exotic flowers, as nowadays even local people demand those rather than native flowers. Based on the findings, several recommendations have been suggested; successful implications of which will create employment, widen the domestic market, and promote Bangladesh towards international competition.

**Key words:** Floristry; Floral Business; COVID-19; Bangladesh; Flower Retailers.

### Introduction

Since ancient days, the flower has been considered as a heavenly gift item, a product of decoration, beautification, and elegance. Being a perishable good, flowers have always been admired and demanded by individuals irrespective of their age, race, gender, or nation. From the research of Laboni et al. (2019), it is found that the flower business was first introduced to the international market by Colombia in the early eighteenth century, which was later adopted by several countries as a source of foreign money including Bangladesh. Fortunate with a favorable climate and fertile land, Bangladesh produces different kinds of flowers and ornamental plants according to international standards. In recent days, flower cultivation has been recognized as a cash crop business for farmers. Over the years, the flower business has developed a good market in Bangladesh mostly fulfilling the domestic demand.

In the fiscal year 2016-2017, Bangladesh exported Cut flowers worth nearly TK. 72 lakh to various countries, especially in Saudi Arabia, The United States, South Korea, The Philippines, Singapore, Japan, Germany, Britain, Denmark and France (Cut flower export, 2019). Yet, the country occupies only a 3% share in the global flower market which is insignificant (Laboni et al., 2019). The emergence of the coronavirus has frozen the whole world where every nation, economy, and life of individuals are passing through limitless anxieties, sufferings, and complexities. In general, people prioritize satisfying basic needs like food, and medicines in

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crises, rather than meeting luxurious demands like gifting flowers. Furthermore, lockdown imposition and movement restrictions by the government have clogged the celebration of many social, cultural, and religious programs to stop the contamination. Thus, the lack of suitable storage facilities, disruption in transportation, and a sharp drop in demand resulted in a huge waste of flowers (Khan, 2020). The Bangladesh Flower Society mentioned that the ongoing COVID-19 pandemic has severely affected flower markets where the gardeners have already incurred a loss of TK. 250 crore in the year 2020 (Bhuyan, 2020). Research by Kumar et al. (2020) highlighted not only the flower farmers; workers, and entrepreneurs related to this business suffered irrevocable loss and identity crisis in some cases. Though the government of Bangladesh has initiated many stimulus packages to boost the agricultural sector, this segment got less attention even to summarize the total loss (economic and moral) of the flower farmers, suppliers, and retailers. Thus, the core objective of this study is to recognize the challenges arisen in the flower business due to this pandemic. Additionally, the shortcoming of adequate investigation in Bangladesh's floral industry is also a motivating factor to engage in this study. According to WHO, the world is optimistic about the end of this pandemic by the middle of this year (COVID pandemic's 'acute phase', 2022), hence, it is high time for policymakers to plan suitable strategies that will instigate the floral business to grow once again in Bangladesh. All these gaps, therefore, set this research to identify the emergency that has arisen in floristry due to the pandemic and to define the stakeholders need to promote the business even beyond the territory of Bangladesh.

## **Literature Review**

### **COVID-19**

The disease, coronavirus was first identified in Wuhan City, China, in December 2019 and ruined the whole world within a short duration (Nandy, Biswas & Das, 2022). In short, it is referred to as the Covid-19 pandemic. Coronavirus is a kind of common virus that causes infection through the nose, sinuses, or upper throat. The virus can lead to pneumonia, respiratory failure, heart problems, septic shock, liver problems even death. Many COVID-19 complications may be caused by a condition known as cytokine release syndrome. This is when an infection triggers one's immune system to flood the bloodstream with inflammatory proteins called cytokines which can kill tissue and damage body organs (Narzario, 2021). According to the International Monetary Fund (IMF), the effect of COVID-19 resulted in at worldwide economic decline of 3% in the year 2020, mainly in two ways; by creating instability in the financial and capital markets, and by regulating human movement that significantly reduced economic activities (putting pressure on consumer and productive economic activity together) (Mofijur & Mahlia, 2021).



Table 1: COVID-19 outbreak in Bangladesh at a glance

First confirmed case	March 8, 2020
Duration of 1 <sup>st</sup> nationwide lockdown	March 26th, 2020- May 30, 2020
GDP in first year (2020) of Pandemic	5.47 % (8.2% in the year 2019)
GDP in second year (2021) of pandemic	6.9%
Unemployment rate of year 2021	5.2% (4.20% in year 2019)

Source: Nandy and Biswas (2022), Bangladesh Economic outlook (2022), World Bank (2021), Bangladesh unemployment rate (2019)

In the mid of 2021, the Delta (B.1.617.2) variant of this coronavirus emerged in India during the time of low vaccine coverage; which had high transmission rates and replaced all other SARS-CoV-2 variants in cruelty. (Liu & Rocklöv, 2021). At present the world is struggling against the Omicron variant (B.1.1.529) (identified first in South Africa at the end of the year 2021) which has faster infection rates than previous all variants and has pushed the world economy into great uncertainty (as many countries imposed lockdown once again) for another time (WHO, 2021).

### **Floristry**

In short, floristry is the production and trade of flowers which is similarly referred to as floriculture, flower or floral business. Trading flowers is a major global industry in both developing and developed countries (Ara & Hosen, 2017). From the view of Kolita (2019), the flower business is the branch of horticulture that focuses on the production and marketing of flowers such as bedding plants, flowering plants, houseplants, cut flowers, etc. In an investigation, Mahalle et al. (2020) state that traditionally flowers are used for social and religious occasions, however, some flowers are medicinal. Raw material (flowers) comes into the business mostly from the cut flower industry. Flower cultivators get engaged in multiple states as whole sellers and retailers (running small shops, online platforms, etc.) to sell flowers. At present, few supermarkets, and garden supply stores also trade flowers. The business requires limited skills (grading, packing, harvesting, tending beds, watering, etc.) while it creates lots of job opportunities. Henceforth, cheap labor plays a significant role in the success of this business. Again establishment of floriculture subsidizes other agro-businesses such as export and import, nursery, seed production, organic manure production, manufacturing of horticultural implements, etc. (Kolita, 2019).

Likewise, in other horticulture businesses, flower traders in developing countries have many challenges such as deficiency of good seeds; lack of technological assistance; shortage of capital, poor post-harvest management; lack of pest and disease control, etc. (Mondal, 2017). According to Khan (2020), because of highly perishable product- quality and short salve-life, supply chain efficiency at each level of transport and storage is imperative in this business. Additionally, the acquisition and retention of talent, starting from farm labor to floral designers are major issues for the investors (Maschke, 2019).

## **Floral Business of Bangladesh**

In Bangladesh, December to April is the business season of flowers while sales rise especially on Victory Day, Ekushey February, Independence Day, Pahela Falgun, Valentine's Day out, and the Day of Bengali New Year's celebration (Khan 2020). Flower is related to almost all the festivals and its range of demand has been enlarged with the rising income of the citizens'. Even for a few people, daily fresh flowers are essential for home decoration in modern times. Research of Bhuyan (2020) estimated the prosperous floral industry is worth about TK. 1500 crore. A vivid inquiry by Wardad (2021) disclosed the annual turnover of local cut flowers and foliage is TK.16 billion, of which only February month generates TK. 5 billion in revenue. Commercial flower cultivation was started in the year 1983, at Jessore district, and gradually spread all over the country. Among the 35 districts in the country especially Jessore, Rangpur Makinkganj, Gazipur, Faridpur, and Dinajpur cultivate commercial flowers (Bhuyan, 2020). According to the Department of Agriculture Extension (DAE) Horticulture Wing, annually the country generates 3.2-3.3 billion pieces of commercial flowers (Wardad, 2021). The shrill upswing of flower demand in the domestic market suppressed the flower export business to grow at a lower-than-expected level (Chowdhury & Khan, 2015). Study of Prodhon et al. (2017) established that Bangladesh has worldwide popularity and demand for its produced flowers. Flower cultivation generally provides 3-5 times and 1.5-2 times more returns respectively than other harvests like rice and vegetable cultivation (Mohiuddin, 2016). Generally, a favorable climate, cheap capital, and cheap labor work behind the profitability of commercial flower cultivation despite some limitations in the country (Das, 2017).

Godkhali of Jessore district generally known as the capital of flower cultivators accomplishes 70 percent of the total demand in Bangladesh (Mia, 2021) and is the largest flower wholesale market (Jessore florists devastated, 2020). According to the Department of Agricultural Extension, in the year 2020, around 2200- 2300 hectares of land were used in floriculture in Bangladesh (Parvez, 2020). In the year 2016-2017, 2,034 hectares of land were used while in 2018-2019 the usage raised to 3,034 hectares of land (Mowla, 2020). A study by Zaman (2020) stressed that almost 10,000 hectares of land in 35 districts of Bangladesh were brought under flower gardening till 2020. At present, 20,000 farmers are involved in flower cultivation in Bangladesh while around 5 million individuals are directly and indirectly engaged in this business (Bhuyan, 2020). Research conducted by Bristhy (2018) recognized the engagement of a good number of women in flower collection, sorting, and packaging activities which is again contributing the society at large.

Rudro (2022) explored that the country mainly produces native flowers as these are less costly while some societies in Bangladesh also prefer exotic flowers like Orchids, Calla lilies, Bird of Paradise, Lily of the Valley, Tulips, etc. that are mostly imported from China and India. Approximately, there are 6000 flower retail shops engaged in the flower business around the country (Zaman, 2020). Again study of Bristhy (2018) identified, that 40 percent of the retail flower shops are located in Dhaka, while Chittagong and Sylhet have 25 percent of flower retailers each and the rest 10 percent are found in other districts (mostly in cities).

Wardad (2021) further argued that up to the year 2019, the flower business had an annual growth rate of more than 10%. All these indicated a positive prospect of that business right

before the emergence of this epidemic. Currently, unlike other businesses, flower traders are also struggling to survive amid the devastations of corona disease. The government has undertaken various measures to stimulate the economy, yet the sufferings (mental and physical) and losses (perishable and nonperishable) of the flower traders are undervalued. The study has instigated to scrutiny the struggles of this potential business which has been befallen as a consequence of the COVID-19 pandemic.

### **Methodology**

A mixed-method has been applied aiming at both qualitative and quantitative analysis. To conduct the assessment, a combination of both primary and secondary data has been used to assess the present situation of the business. Further, an in-depth interview was carried out with 20 retail flower sellers in Chattogram City to assemble primary data. A convenience sampling technique was adopted to select participants. As part of the qualitative study, at first, secondary data has been used to examine the devastation of COVID-19 on the flower business in Bangladesh. For this, various published journals, periodicals, newspapers, and online news portals were considered as sources to evaluate the florist business in recent timeframe.

Besides, 20 retail flower sellers in Chattogram City were interviewed in-depth as a quantitative measure to evaluate the further consequences of the coronavirus on the business. A convenience sampling technique was adopted to select participants. Due to participants' reluctance, this method was adopted for possible easy sampling without any specific criteria (Given, 2008). A semi-structured questionnaire was used to collect the feedback. All interviews were conducted face to face. Each interview lasts for a maximum of 30 minutes due to the retailers' busy work schedule and unwillingness to participate (which is a cultural trend of small entrepreneurs in Bangladesh). Hence, only two interviews get voice recordings. Later, through thematic analysis, feedbacks were evaluated. Again, Given (2008) described such analysis as a qualitative data collection strategy where segmentation, summarization, and reconstruction of the sample are usually followed for reduction.

### **Analysis & Findings**

#### **Overall Challenges arisen due to Lockdown**

Generally, in Bangladesh, a five months period (starting from December to April) is the crowning season of the flower trade as several national and cultural occasions are being observed in educational institutions, governmental, semi and non-governmental aspects, and even at the individual level. Therefore, once the government declared nationwide lockdown in March 2020 which lasted till May 2020; several celebrations were missed. Though the lockdown eased (despite restrictions on mobility and public gathering) from June 2020; educational institutions remained closed till September 2021. Within a year, the floriculture trade witnessed a negative growth of 30-40% (Wardad, 2021). As per the Dhaka Ful Baboshaye Kalyan Samity (an association of flower traders), daily TK. 1.5 crore worth of flowers were written off since March 20, 2020 (Parvez, 2020). Even after the lockdown withdrawal, weddings, other occasions, and celebrations were taking place on a small scale (according to the

governmental restrictions) in order to stop the contamination. Therefore, the demand for flowers was yet less compared to early pandemic times.

Further, the loss of demand and circumstances caused huge frustration among flower cultivators which forced them to use matured flowers as cattle feed (Jessore florists devastated, 2020). Many farmers even struggled to manage the day's meal. Being labor-intensive in nature, farmers mostly laid off their loyal workers while some of them continued to bear the fixed cost of wages. All these financial, mental, and physical challenges demotivate them to take care of and stop flower cultivation. On the contrary, several of them started harvesting rice and vegetables to bear the family. As a result, flower prices remained high even after the lockdown withdrawal (Rubhani, 2020).

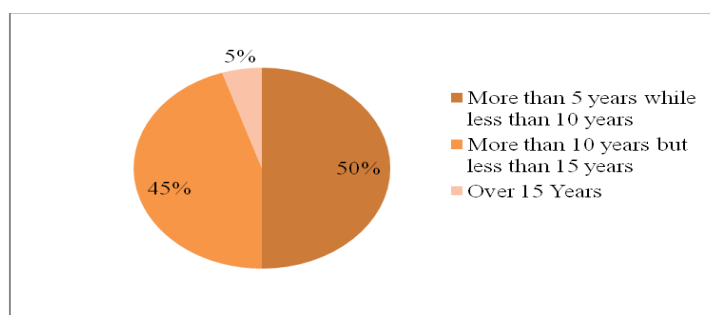
On the other hand, the pandemic had lowered the income level of people which indirectly reduced the flower demand as mid-level income people have a significant contribution to the growth of this business in Bangladesh. Again, the closure of educational institutions played a big role in cutting the flowers' additional requirements. Meanwhile, in mid-2020, two gigantic cyclones namely Amphan and Jawad, hit the country which severely damaged the flower cultivation lands (Reja, 2020). The estimated loss of cyclone Amphan was 20 crore TK. and the cumulative total cost of this pandemic was 50 crore TK. only in Jassore district, the heart of the flower business (Jessore florists devastated, 2020).

Though business moved up a bit by the end of 2021, it fell again due to the recent outsurge of the omicron variant of the Coronavirus; hampering social and cultural events another time (Sarkar, 2022). Labor costs also jumped high as many farmers got engaged in other businesses in the meantime.

### Challenges at the Retailers' Point

Situated in the Bay of Bengal, Chattogram is the port city of Bangladesh and the second metropolitan city after Dhaka, the Capital. There exist around 100 flower retailer shops in the city, among them only 20 retailers agreed to face the interview. Figure 1 represents the shoppers' tenure ship in the business.

Figure 1: Respondents' Tenure in Floral Business



Source: Interview responses

Among the retailers, 50% shops have tenure more than 5 years while less than 10 years. 45% of them have been running this business for more than 10 years but less than 15 years and only 5%

have business experience over 15 years. This signifies the business's profitability which encourages many to continue.

On average, the invested capital ranges from TK. 15,00,000 - TK. 10,00,000. Additionally, 80% of those retailers started the business as sole proprietors while only 20% run the business as a second option. That finding indicates the opportunity for youth to grow as entrepreneurs through this business.

As stated, data was gathered using a semi-structured questionnaire. Their grief and sufferings have guided at large to draw the full picture of corona devastation on the floral market in Bangladesh.

*"We are facing tremendous financial crisis in the pandemic due to low sales, rising demand of exotic flowers (low demand of native flowers) while we have to bear all fixed costs".* - Anonymous flower retailer

As mid-level people have income cuts; the demand for native flowers falls while the elite or some people yet demand exotic flowers. On the other hand, the supply of exotic flowers also dropped (due to low production in the country). Again, high price also demotivates customers to buy flowers (as it is not a necessity like food, clothing, or medicine). Thus, the retailers have to bear all fixed costs like rent, utilities, salaries, etc.

*"Even in this hard time, the existence of artificial (plastic) flowers in the market (imported from China), hampering our business a lot".* - Anonymous flower retailer

In recent years, the use of artificial flowers has increased due to their long salve life and low cost (easy storage). The situation has worsened in the pandemic while mid-level people started using this flower due to the high market price of real flowers in Bangladesh.

*"Now we have a dual crisis: price hike and flower shortage."* - Anonymous flower retailer

As many farmers abandoned flower cultivation, the supply of both native and exotic flowers dropped which in return pushed the price up. On the contrary, customers are not willing to bear this cost. Therefore, the retailers are facing a double crisis to continue the business.

*"Farmers need to offer fair prices to establish sustainable flower industry in the country."* - Anonymous flower retailer

Due to the middleman's existence farmers are often deprived of getting a fair price for the flowers in Bangladesh. The middleman also plays a role to keep the price high. Hence, the industry needs to set a clear supply channel by eliminating the middleman where farmers can directly deliver their products to the retailers.

*"There is no proper storage facility where we can store raw (imported) flowers."* - Anonymous flower retailer

Being perishable in nature, flowers need to be delivered fast. However, often the traders face difficulties to store the imported flowers. Storage facilities would have saved some revenue even in the pandemic. Moreover, due to the short life cycle, the price of those flowers remained high, which again dropped the sales at the end.

*"Farmers need favorable conditions to cultivate exotic flowers."* - Anonymous flower retailer

Prior to the pandemic, varieties of exotic flowers were cultivated locally, which fell drastically during this epidemic. Farmers damaged the land by harvesting. Lack of proper cultivation knowledge is also a barrier. As the market is growing, favorable cultivation conditions need to be established in order to meet the local demand for those flowers, to keep the price low, and to export globally.

*“I was so disheartened (due to the financial crisis in the pandemic), thought of failing the business many times”.* - Anonymous flower retailer

Many businesses have been offered various stimulus packages by the government of Bangladesh where agriculture has also enlisted. As a part of agriculture, flower traders are eligible to receive loans, yet such facilitation is not happening in reality; rather the fund is being prioritized to other segments of agriculture. (Reja,2020). Frustrations owed from all such financial difficulties have forced many flower traders to discontinue the business.

### **Discussion & Recommendations**

It has been observed that due to unstable demand for the necessary items, flower dealers faced terrific miseries throughout the COVID-19 pandemic. Besides, the callous scenario revealed through this study highlights the lack of coordination within the value chain and the absence of adequate support from respective bodies to sustain the business. Thus, despite of the economic turnaround, that industry is struggling to flourish again (Halder, 2020). Further, the lack of managerial capabilities of the traders is another significant problem that encumbers the continuance of that business in cases. Managers while dealing with perishable goods need to adopt differentiated strategies in times of crisis by considering new forms of trade and right restructuring to tackle the detrimental loss of such a difficult period (Anacleto et al., 2021). Technological gap further added loss of this sector (Mitra et al., 2022) which is again a worthwhile lesson to learn and to adapt in stable time for succession.

Altogether, the research has established the potentiality and importance of floristry in the economy of Bangladesh. Hereafter, the investigation has drawn a few supportive measures to grab the market once again. At first, policymakers need to draw detailed guidelines for loan disbursement from the stimulus packages offered by the government. Then, farmers need to be encouraged and to provide extended support like incentives, and training to cultivate exotic flowers which will reduce the flower import cost and the total selling price as well. Additionally, this will open a new window of foreign currency (through export). After that, the government is required to preserve or allocate suitable lands for flower cultivation, for which strong agricultural knowledge has to be ensured at the root level. The respective ministry needs to formulate proper strategies in this regard. Next, district-wise flower storage facilities have to be established to prolong the lifetime of fresh flowers. Finally, the government has to encourage young entrepreneurs to join this business by providing incentives. As the pandemic has brought about huge job cuts and unemployment, this will contribute to further reviving the economy.

### **Implications of the study**

From both theoretical and practical perspectives, this research has a noteworthy contribution. Theoretically, this study will assist the managers in evaluating the prospects of the floral business in Bangladesh, utilizing the opportunity, and assuming the required measures for further progression. Additionally, the recommendations suggested in this research will support the policymakers to design suitable policies that will support farmers, and retailers to engage themselves more in the floral business which will stimulate the economy which signifies the practical proposition of the study. Moreover, the research will encourage entrepreneurs to join the business at any suitable branch (farming, wholesaler, distributor, or retailer) of the entire

supply chain. Over again, the recommendations will guide the government to turn this perishable good into a cash crop (flower) business, by seizing prospectus international flower markets.

### **Limitations and Future Research Directions**

Due to the out surge of the omicron variant, the study was confined to Chottogram City where the majority of flower retail shops are clustered. Thus, the findings of this study do not generalize the overall scenario in cases. Shortage of secondary Data is another limitation faced while conducting the research. Lastly, the unwillingness of the participants is the key problem that mostly appeared as a barrier to performing the research. Therefore, current research can be further extended by collecting data from a large sample size. Field surveys to identify actual controlling variables of this industry can be another interesting topic to study. Again it is important to analyze the value chain of the business for restructuring and to take adaptive measures of flower shops in times of crisis.

### **Conclusion**

Even in its devastation, the coronavirus failed to trash people's hope completely, the vaccination is underway in Bangladesh and the economy has started to swing. Henceforth, opportunities are yet there for probable floristry in the land. The research has brought light on the economic prospects and potentiality of self-employment of this business; which two are the burning issues arisen through this pandemic. Therefore, the policymakers need to play a dynamic role to utilize the business potentialities and advantages and to eliminate all related obligations. Successful establishment of farmer-friendly policies, training, incentives, and moral enhancement of all respective agencies of the floral business will pave the way to contribute vastly to economic development and will recognize Bangladesh as the market leader in the international floral marketplace hereafter.

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# Impact of Capital Structure on Firm Performance: An Empirical Analysis on Pharmaceutical Industry of Bangladesh

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## Abstract

The impact of capital structure on financial performance of publicly traded pharmaceutical companies in Bangladesh has been explored in this study. This study has used panel data of twenty DSE listed pharmaceutical companies over the period of ten years from 2011 to 2020. The fixed effect OLS regression model has been applied to this research to find out the impact of capital structure on firm performance. The findings of the study show that short term debt has a significant positive impact on the performance of pharmaceutical industry. In addition to short-term debt, some firm specific factors including sales growth and firm size have significantly positive impact on the financial performance. The results also reveal that long-term debt and liquidity have not any statistically significant impact on firm performance. These findings lead to conclude that less costly and easy availability nature of short- term debt relative to long term debt has positive contribution to the performance of pharmaceutical industry in Bangladesh.

**Keywords:** Capital Structure, Financial Performance, Pharmaceutical Industry, DSE, Bangladesh.

## 1. Introduction

The capital structure of a company refers to the proportion of debt and equity that it employs to finance its operations. Several studies have attempted to investigate the effect of firm's capital structure on performance. In this context, (Modigliani & Miller, 1958) claimed that, under perfectly competitive capital market conditions, capital structure has no effect on corporate performance. Following this initial theory, they claimed that by considering the effect of tax advantages on debt, a firm's value may be maximized by integrating more debt in its capital structure (Modigliani & Miller, 1963). However, it is not beyond dispute because of some unrealistic assumptions it holds and that is why several other theories have evolved to assess the capital structure's influence on the firm performance.

In accordance with the trade-off theory, (Brigham & Houston, 2004) argued that company with greater physical assets should use more debt capital since these assets serve as collateral and have a stronger potential to repay debt. In accordance with the pecking order theory, (C.Myers, 1977) believed that there is no optimal capital structure and advocates that every firm has a preferred hierarchy for financing decisions and that internal funding is favored over external financing. According to some other research, debt has its benefits, but excessive use of debt can lead the company in bankruptcy. The financing arrangements determine how the value of the

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firm is divided & how they can determine their expected capital structure. Therefore, for maximizing the company value, managers must analyze the capital structure carefully.

### **1.1 Objective of the Study**

The principal objective of this study is to determine the impact of capital structure on the financial performance of pharmaceutical companies of Bangladesh. Again, the study aims to explore the comparative significance of short term and long-term debt ratio on maximizing the firms' performance.

## **2. Literature Review**

Capital structure is considered as one of the most important concepts related to the finance. There are many theories discovered to support the capital structure and many investigations on capital structure by researcher throughout the world. Bigger and Mathur (2011) had examined an empirical study on the influence of capital structure on profitability based on the US listed firms. They used correlation and regression analysis for this research. (Singh & Bagga, 2019) (M, 2019) also conducted this analysis for finding the relationship. They have found that a positive relationship exists among STDTA, TDTA, LTDTA with profitability. This result is similar with (Singh & Bagga, 2019)(Nenu, et al., 2018) who found a positive relationship with the capital structure.

Rahimi et al. (2013) made a study on impact of capital structure on firms' performance based on the pharmaceutical companies of Iran. They took NPM, ROA & ROE as endogenous variables and STDTA, LTDTA & TDTA as exogenous variables. (Hailu, 2015) & (Hasan et al. 2014) also used this variable. They conclude that there exists a negative relationship between profitability and capital structure.

Hasan et al. (2014) intended to investigate the impact of capital structure on firms' performance. They found that short-term debt has a positive relationship with EPS but long-term debt has a negative relationship with it while no significant relationship with total debt. (Khatoon & Hossain, 2017) also found similar result with one exception in TDTA model. ROA has significant negative relation with capital structure (STDTA, LTDTA & TDTA). Finally, they concluded that capital structure has a negative impact on firm performance.

Amin &Jamil (2015) demonstrated that short term debt to total asset has significant positive association with profitability measured by ROA & ROE. (Vijayakumaran, 2017) & (Jadah et al.2020) also used same dependent variables as (Amin & Jamil 2015) and found a positive relationship with capital structure except long term debt ratio.

Gohar et al. (2016) examined the impact of capital structure on bank performance. In their research, they found that capital structure is negatively related to bank performance in Pakistan which is similar with (Mohammazadeh, et al., 2013) (Hasan, et al., 2014). Siddik et al. (2017) explored that liquidity has negative relation; Size has a positive relation & Growth opportunity has positive relation with Profitability of the Banks. (Hasan, et al., 2014) also used same types of control variables and also found in addition of independent variable, control variable has significant impact on the firm performance.

Priyadharshini & Vakayil (2017) conducted research on capital structure based on the pharmaceutical sector of India. In their analysis, they used ROCE & NPM as dependent variables and debt to asset ratio, debt to equity ratio as independent variables. (Tanni, 2013) had also used these variables and found positive impact on NPM & EPS.

Khatoon & Hossain (2017) conducted research on capital structure and explored current assets and cash flow have significant positive influence on the explained variables. They have found that long-term assets and liquidity have inverse association with the performance of the financial institutions except ROE. Another study (Hailu, 2015) found that short term debt has positive relationship and long-term debt & total debt have negative relationship with the firms' performance.

Singh and Bagga (2019) made a study on the effect of capital structure on profitability based on 50 listed companies for the period of ten years from 2008-2017. They found similar to (Gill, et al., 2011) that capital structure has significantly positive impact on firms' profitability. Doku et al. (2019) conducted research on the effect of capital structure based on 21 commercial banks over the period of 2000-2014. They explored a positive relationship exists between capital structure and the profitability of commercial banks of Ghana. Similar result is found in many other studies (Priyadharshini & Vakayli, 2017)(M, 2019)(Nenu, et al., 2018) that capital structure has positive relationship.

Fatima & Mohiuddin (2020) explored the effect of capital structure on profitability & corporate performance of listed cement companies of Dhaka stock exchange in Bangladesh. They took endogenous & exogenous variables like (Hailu, 2015) & (Khatoon & Hossain, 2017) for finding the impact of capital structure on the corporate performance and found similar results.

According to the all of the literature review, it is found that capital structure has significant impact on the Firms' profitability as well as Firms' financial performance. From the above-mentioned empirical literature review, the following research hypotheses are developed with a view to finding the impact of capital structure on the firm performance.

### **Research Gap**

Though there are several numbers of studies have been conducted on this topic, a very few specific studies for the impact of capital structure on the pharmaceutical industry of Bangladesh are found. Also, the studies of capital structure in this industry did not include recent data. Therefore, an effort has been made to identify the impact of capital structure on the firm performance by using the most recent available data.

*Hypothesis 1: Capital structure (STDTA, LTDTA, TDTA, DER, EAR) has a significant impact on the firm financial performance (ROA, ROE, NPM, EPS).*

### **3. Methodology and Research Design**

This research is based on panel data of 10 years of 20 DSE listed pharmaceutical companies for the period of 2011 to 2020. Although there are 32 pharmaceutical companies are listed under DSE, data of ten years or more is not available for most of the companies. Some companies provide 5 years or less & there are some companies where data are inaccessible. Because of

these limitations & as per requirement of the balanced panel this study has been conducted by using most recent 10 years annual data of 20 companies.

The data is found non-normal initially. All statistical tests have been performed after the data was transformed from non-normal into normal by using a rank case method with the help of SPSS 25.

### 3.1 Measurement of the Variables

Generally, there are various profitability measures such as ROA, ROE, NPM, ROS & EPS. But in this report, ROE, ROA, EPS & NPM have been uses as dependent variables. In addition to independent variables, control variables are used in the regression model to avoid omitted variable bias.

**Table 1:** Summary of Endogenous and exogenous variables

<b>Endogenous Variables</b>	<b>Formula</b>	<b>Sources</b>
Return on Equity (ROE)	Net profit after taxes/Equity	(Fatima & Mohiuddin, 2020)(Gill, et al., 2011)(Hasan, et al., 2014)(Tanni, 2013)
Return on Asset (ROA)	Net profit after taxes/Total Asset	(Fatima & Mohiuddin, 2020)(Umar, et al., 2012)(Amin & Jamil, 2015)
Earnings Per Share (EPS)	Net Income/ Number of Share Outstanding	(Hasan, et al., 2014)(Fatima & Mohiuddin, 2020)(Umar, et al., 2012)
Net Profit Margin (NPM)	(Net Income/Revenue) *100	(Umar, et al., 2012)(Fatima & Mohiuddin, 2020)(Khatoon & Hossain, 2017)
<b>Exogenous Variables</b>	<b>Formula</b>	<b>Sources</b>
Short term debt to asset ratio (STDTA)	Current liability/Total asset	(Khatoon & Hossain, 2017)(Gill, et al., 2011)(Siddik, et al., 2017)
Long term debt to asset ratio (LDTTA)	Noncurrent liability/Total asset	(Hasan, et al., 2014)(Siddik, et al., 2017)
Total debt ratio (TDTA)	Total liability/Total asset	(Tanni, 2013)(Siddik, et al., 2017)
Debt to equity ratio (DER)	Total liability/Total Equity	(Tanni, 2013)(Hailu, 2015)(Madiha Gohar, 2016)
Equity to total Asset ratio (EAR)	Equity/Total Asset	(Doku, et al., 2019)(Jadah, et al., 2020)
<b>Control Variables</b>	<b>Formula</b>	<b>Sources</b>
Liquidity (LIQ)	Current asset/Current liability	(Fatima & Mohiuddin, 2020)(Siddik, et al., 2017)

		(Ghayas & Akhter, 2018)
Size (SIZ)	Natural Logarithm of total asset	(Gill, et al., 2011)(Hasan, et al., 2014)
Sales Growth (GRO)	(Current year Turnover-previous year Turnover) / Previous year Turnover	(Gill, et al., 2011)(Mohammazadeh, et al., 2013)(Hailu, 2015)
Firm Age (AGE)	Natural logarithm of the number of years since the establishment of the firm	(Vijayakumaran, 2017)(Amin & Jamil, 2015)

Sources: This table is compiled by the author

### 3.2 Model Specification

Based on the previous researcher (Siddik, et al., 2017) (Fatima & Mohiuddin, 2020) (Umar, et al., 2012) & (Hailu, 2015) and hypotheses of this study, the following multiple regression model have been used to test the hypotheses in this study. The models are as follows:

#### Model-1 [ROE]

$$ROE_{it} = \beta_0 + \beta_1STDTA_{it} + \beta_2LTDTA_{it} + \beta_3TDTA_{it} + \beta_4DER_{it} + \beta_5EAR_{it} + \beta_6LIQ_{it} + \beta_7SIZ_{it} + \beta_8GRO_{it} + \beta_9AGE_{it} + \varepsilon_{it}$$

#### Model-2 [ROA]

$$ROA_{it} = \beta_0 + \beta_1STDTA_{it} + \beta_2LTDTA_{it} + \beta_3TDTA_{it} + \beta_4DER_{it} + \beta_5EAR_{it} + \beta_6LIQ_{it} + \beta_7SIZ_{it} + \beta_8GRO_{it} + \beta_9AGE_{it} + \varepsilon_{it}$$

#### Model-3 [EPS]

$$EPS_{it} = \beta_0 + \beta_1STDTA_{it} + \beta_2LTDTA_{it} + \beta_3TDTA_{it} + \beta_4DER_{it} + \beta_5EAR_{it} + \beta_6LIQ_{it} + \beta_7SIZ_{it} + \beta_8GRO_{it} + \beta_9AGE_{it} + \varepsilon_{it}$$

#### Model-4 [NPM]

$$NPM_{it} = \beta_0 + \beta_1STDTA_{it} + \beta_2LTDTA_{it} + \beta_3TDTA_{it} + \beta_4DER_{it} + \beta_5EAR_{it} + \beta_6LIQ_{it} + \beta_7SIZ_{it} + \beta_8GRO_{it} + \beta_9AGE_{it} + \varepsilon_{it}$$

Where:

i = the individual firm, t = the year,  $\beta_0$  = Coefficient of Intercept (Constant),  $\beta_1$  = Coefficient of Short-term debt to total asset,  $\beta_2$  = Coefficient of long-term debt to total asset,  $\beta_3$  = Coefficient of total debt to total asset,  $\beta_4$  = Coefficient of debt-to-equity ratio.  $\beta_5$  = Coefficient of Equity to total asset,  $\beta_6$  = Coefficient of Liquidity,  $\beta_7$  = Coefficient of Firm Size,  $\beta_8$  = Coefficient of Growth,  $\beta_9$  = Coefficient of Age,  $\varepsilon$  = The Error Term.

## 4. Empirical Result and Analysis

### 4.1 Descriptive Statistics

Descriptive Statistics (Appendix 1.1) shows that average return on equity of the pharmaceutical sectors is 15.73% which is the highest among all the performance measures and the earnings from asset or return on asset is 6.51% which indicates that the earning from the asset is not so good. The negative mean of NPM tells that pharmaceutical companies can't earn after tax

income properly from their annual turnover or total revenue. Firms use minimum long-term debt in order to maximize their profit.

#### **4.2 Pearson Correlation Matrix**

The Pearson coefficient of correlation shows that the correlation coefficient of the independent variables is free from multicollinearity and thus suitable for conducting the regression analysis. (Appendix 1.2)

#### **4.3 Multicollinearity Test**

The centered VIF for the STDTA, LTDTA, TDTA, DER, EAR, LIQ, SIZ, GRO & AGE are 5.93, 1.75, 2.90, 5.69, 1.96, 1.99, 1.39, 1.08 & 1.38 which are all below than 10. So, it can be concluded that there exists no severe multicollinearity among the explanatory variables. So, this study is free from the multicollinearity problems. (Appendix 1.3)

#### **4.4 Unit Root Test**

From the table (Appendix 1.4), it is seen that dependent variables and independent variables are stationary in nature. Though the total debt to total asset ratio is non-stationary in nature in ADF test, it is stationary in LLC test. So, Phillips-Perron test is conducted for this variable and in where it is stationary. In case of debt-to-equity ratio it is also non-stationary in LLC test but stationary in ADF & PP test. So, variables are free from non-stationary in this research.

#### **4.5 Heteroskedasticity Test**

In the likelihood ratio for determining the homoscedasticity, the likelihood probability value of ROE, ROA, NPM & EPS are 0.9538, 0.4306, 0.9059 is 0.9538 & 0.9868 which are far greater than 0.05 (insignificant). As the p value of this test is greater than 0.05 that is why we can't reject the null hypothesis. Therefore, the test result suggests that residuals are homoscedastic and free from Heteroskedasticity problem. (Appendix 1.5).

#### **4.6 Hausman Test**

In order to select the appropriate model among (pooled regression model, Fixed effect regression model & Random effect model), Hausman test was employed (Hailu 2017). According to Hausman test result, the null hypothesis is rejected and that's mean that the preferred model is fixed effect regression model. (Appendix 1.6)

#### **4.7 Fixed effect regression Model**

The result of fixed effect regression model has been summarized in Appendix 1.7. The coefficient of determination ( $R^2$ ) 0.7912, 0.7682, 0.7288 & 0.8419 denotes that 79.12%, 76.82%, 72.88% & 84.19% total variation of the dependent variables namely ROE, ROA, EPS & NPM that can be explained by the independent variables STDTA, LTDTA, TDTA, DER, EAR, LIQ, SIZ, GRO & AGE. The DWS value is greater than 1 and less than 2, that means there exists very low level of positive autocorrelation among the variables. Finally, the



probability of F (overall significance) is 0.0000 in all the model which denotes that there has strong evidence of rejection of null hypothesis. So, the overall variables are highly significant.

**Table 2:** Summary of result of the research

Model	Significance		Result	
	Significant	Insignificant	Positive impact	Negative Impact
Return on Equity (ROE)	STDTA, TDTA, DER, EAR, GRO & AGE	LTDTA, LIQ, SIZ	STDTA, LTDTA, DER, GRO & SIZ	TDTA, EAR, LIQ & AGE
Return on Asset (ROA)	STDTA, TDTA, GRO	LTDTA, DER, EAR, LIQ, SIZ & AGE	STDTA, DER, EAR, LIQ, GRO & SIZ	LTDTA, TDTA & AGE
Net Profit Margin (NPM)	STDTA, SIZ, GRO, AGE	LTDTA, TDTA, DER, EAR & LIQ	STDTA, DER, EAR, LIQ, SIZ & GRO	LTDTA, TDTA & AGE
Earnings per Share (EPS)	STDTA, TDTA, SIZ & GRO	LTDTA, DER, EAR, LIQ & AGE	STDTA, DER, GRO & SIZ	LTDTA, TDTA, EAR, LIQ & AGE

*Sources: This table is compiled by the author*

In the table 2, it is seen that short-term debt to total asset is significant in all the model and it has significant positive impact on the firm performance including ROE, ROA, NPM & EPS. (Khatoun & Hossain, 2017) (Amin & Jamil, 2015) also found similar result that STDTA have positive impact on all the exogenous variables. Since the short-term debt is less expensive than long-term debt and incorporating more-short term debt with low level of interest rate have resulted in an increase profit. Besides Pharmaceutical industry can easily manage this type of funding. Long-term debt to total asset has negative association with all the variables but it is insignificant.(Amin & Jamil, 2015) (Ghayas & Akhter, 2018) also found insignificant and negative association with long-term debt. The reason of insignificant may be the pharmaceutical industry use very lower amount of long-term debt which may result from higher borrowing cost and strict covenants. Furthermore, long-term debt incurs financial distress cost as well as additional supervisory cost, which may outweigh the advantage of long-term financing. Total debt to total asset is significant all the model except NPM and it has negative association with all of the explained variables which is similar with (Jadah, et al., 2020) (Khatoun & Hossain, 2017) and contrast with (Tanni, 2013) & (Ghayas & Akhter, 2018). Debt to equity ratio is significant only ROE and it has positive association with all of the variables which is also found by previous researchers (Fatima & Mohiuddin, 2020) (Jadah, et al., 2020). Equity to asset ratio is significant only in ROE and it has positive impact on ROA & NPM which is similar as (Jadah, et al., 2020) and negative association with ROE & EPS which is not similar as the previous researcher covered in this research. Liquidity is insignificant and it has negative

association with the firm performance. This result is similar with the previous researcher namely (Khatoon & Hossain, 2017) & (Siddik, et al., 2017). Sales growth is significant in all the case and it has positive impact on the firm performance. (Ghayas & Akhter, 2018) and (Jadah, et al., 2020) also found positive impact of sales growth on the predictand variables. Firm Size is significant in NPM & EPS and it has positive association with all of the performance measures variables. This result is similar with (Vijayakumaran, 2017) and (Jadah, et al., 2020) who found positive association with firm size & corporate performance. The reason of positive association can be the larger firm has better market condition & debt obligation capabilities which can help the firm to easily manage. Firm Age is significant in ROA & NPM and it has negative relationship with the firm performance which is similar with (Vijayakumaran, 2017). This result of inverse relationship can be explained as firm with longer term of operation is well established in the marketplace. This is why they use more of their internal financing system & external fund is less required in their financial operations. So, it can be concluded that except TDTA, capital structure has slightly positive impact on the pharmaceutical Industry of Bangladesh.

## **5. Conclusion**

The findings of the results conclude that the short-term debt has significant positive impact on the firm performance because it is less expensive than long term debt and increased earnings have resulted from adopting more short-term loans with low interest rates. On the contrary, a large amount of long-term debt in a company's capital structure will mostly result in poor financial performance. The result also shows Individual firm specific factors other than capital structure ratio are observed to create more profound impact on the performance of the firms.

This research has some constraints that limit its efficiency in some extent. The availability of data was not sufficient enough to test some specific statistical technique which can help to make the research more efficient.

Finally, from the research it was concluded that capital structure has slightly significant positive impact on the Firm performance. So, financial manager should be more conscious about the setting and adjusting the short-term and long-term debt level in the firm's capital structure in order to maximize the firm's profitability as well as the financial performance of the firm.

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## Appendices

### *Appendix 1.1: Descriptive Statistic*

	Mean	Maximum	Minimum	Std. Dev.	Jarque-Bera	Prob.	Obs.
ROE	15.73	168.90	-136.28	58.48	0.61	0.74**	200
ROA	6.51	37.76	-25.02	12.08	0.49	0.78**	200
NPM	-0.55	245.70	-247.07	93.49	0.49	0.78**	200
EPS	9.58	46.43	-27.58	14.21	0.56	0.76**	200
STDTA	34.83	90.43	-20.45	21.15	0.64	0.73**	200
LTDTA	10.01	37.58	-17.53	10.45	0.49	0.78**	200
TDTA	45.09	103.31	-13.25	22.12	0.51	0.77**	200
DER	0.98	24.19	-22.43	8.95	0.57	0.75**	200
EAR	55.03	121.41	-9.37	22.93	3.19	0.20**	200
LIQ	2.58	24.07	-19.01	8.20	0.61	0.74**	200
SIZE	22.02	26.23	17.84	1.61	0.39	0.82**	200
GRO	8.67	80.70	-63.48	27.36	0.50	0.78**	200
AGE	3.25	5.02	1.47	0.68	0.44	0.80**	200

\*\* Indicates that residuals are normally distributed

*Appendix 1.2: Pearson Correlation Matrix*

	ROE	ROA	NPM	EPS	STDTA	LTDTA	TDTA	DER	EAR	LIQ	GRO	SIZE	AGE
ROE	1.00												
ROA	0.87	1.00											
NPM	0.54	0.76	1.00										
EPS	0.74	0.72	0.43	1.00									
STDTA	0.25**	-0.04	-0.38	0.19	1.00								
LTDTA	-0.28	-0.39	-0.43	-0.14	-0.04	1.00							
TDTA	0.15	-0.21	-0.49	0.12	0.64	0.29	1.00						
DER	0.25**	-0.16	-0.41	0.14	0.66	0.20	0.70	1.00					
EAR	-0.15	0.22	0.50***	-0.11	-0.48	-0.29	-0.66	-.48	1.00				
LIQ	-0.09	0.15	0.37	-0.08	-0.68	-0.12	-0.65	-.58	0.62	1.00			
GRO	0.21	0.27***	0.27	0.19	-0.14	0.01	-0.09	0.09	0.08	0.09	1.00		
SIZE	0.00	0.17	0.25	0.35	-0.29	0.12	-0.24	-.21	0.25	0.21	0.15	1.00	
AGE	0.14	0.06	-0.10	0.39***	0.11	0.24	0.14	0.10	-0.13	0.00	-0.13	0.37	1.00

*Appendix 1.3: Multicollinearity Test*

Variable	Coefficient Variance	Centered VIF
STDTA	0.162124	5.935641*
LTDTA	0.196692	1.759080*
TDTA	0.571845	2.903792*
DER	0.869368	5.698733*
EAR	0.301399	1.963923*
LIQ	0.362519	1.996173*
SIZE	6.598821	1.396325*
GRO	0.017651	1.081216*
AGE	36.07038	1.384147*

\*\*\* indicates that there exists no multicollinearity

*Appendix 1.4: Unit Root Test*

<b>Table 6: Panel Unit Root test</b>						
H <sub>0</sub> = Panel data has unit root H <sub>a</sub> = Panel data are stationary						
	Augmented Dickey Fuller (ADF Test)			Levin, Lin and Chu (LLC Test)		
Variables	(With Individual Intercept & Trend)			(With Individual Intercept & Trend)		
	Statistics	P value	Process	Statistics	P value	Process
ROE	86.3238	0.0000*	Stationary	-9.93036	0.0000*	Stationary
ROA	58.9495	0.0270*	Stationary	-6.91843	0.0000*	Stationary
NPM	73.9316	0.0009*	Stationary	-5.88566	0.0000*	Stationary
EPS	66.1930	0.0057*	Stationary	-7.42932	0.0000*	Stationary
STDTA	60.4680	0.0199*	Stationary	-6.40274	0.0000*	Stationary
LTDTA	87.3218	0.0000*	Stationary	-5.32658	0.0000*	Stationary
TDTA	47.9214	0.1823	Non-Stationary	-3.32548	0.0004*	Stationary
DER	-1.80509	0.0355*	Stationary	51.1520	0.1113	Non-Stationary
EAR	45.0310	0.0000*	Stationary	-1.22573	0.0000*	Stationary
LIQ	59.2868	0.0253*	Stationary	-4.64523	0.0000*	Stationary
SIZE	49.2715	0.0000*	Stationary	-1.30746	0.0000*	Stationary
GRO	94.1070	0.0000*	Stationary	-8.63363	0.0000*	Stationary
AGE	47.6052	0.0190*	Stationary	-2.2163	0.0133*	Stationary

\*\*\* indicates that variable is significant at 5% significant level

*Appendix 1.5: Heteroskedasticity Test*

Model name	Model Summary			Decision
	Test Name	Likelihood Value	P Value	
ROE	Likelihood Ratio	10.69215	<b>0.9538***</b>	Residuals are homoscedastic
	Test Name	Likelihood Value	P Value	
ROA	Likelihood Ratio	20.44180	<b>0.4306***</b>	Residuals are homoscedastic
	Test Name	Likelihood Value	P Value	
NPM	Likelihood Ratio	12.28534	<b>0.9059***</b>	Residuals are homoscedastic
	Test Name	Likelihood Value	P Value	
EPS	Likelihood Ratio	8.631825	<b>0.9868***</b>	Residuals are homoscedastic
	Test Name	Likelihood Value	P Value	

*Appendix 1.6: Hausman Test*

Model Name	Regression Model	Summary of Hausman Test		Appropriate Model
		Chi-sq	Prob.	
ROE	Fixed Effect Reg. M	15.3872	<b>0.0308***</b>	Fixed Effect Regression Model
	Random Effect Reg.			
ROA	Fixed Effect Reg. M	10.3`506	<b>0.0228***</b>	Fixed Effect Regression Model
	Random Effect Reg.			
NPM	Fixed Effect Reg. M	15.0358	<b>0.0406***</b>	Fixed Effect Regression Model
	Random Effect Reg.			
EPS	Fixed Effect Reg. M	14.9208	<b>0.0391***</b>	Fixed Effect Regression Model
	Random Effect Reg.			

\*\*\* indicates that model is fixed effect regression model

*Appendix 1.7: Model Summary of the fixed effect regression Model*

<b>Table 8: Result of fixed effect regression model</b>								
	Return on Equity		Return on Asset		Net profit Margin		Earnings per share	
Variable	Coef.	Prob.	Coef.	Prob.	Coef.	Prob.	Coef.	Prob.
STDTA	0.64	0.045*	0.19	0.007*	1.04	0.075**	0.11	0.068**
LTDTA	0.01	0.978	-0.06	0.505	-0.54	0.450	-0.15	0.105
TDTA	-2.50	0.000*	-0.15	0.063**	-1.27	0.158	-0.09	0.070**
DER	4.45	0.000*	0.08	0.514	0.78	0.467	0.04	0.742
EAR	-0.63	0.088**	0.09	0.217	0.48	0.470	-0.01	0.834
LIQ	-0.01	0.993	0.17	0.170	1.54	0.145	-0.19	0.110
GRO	7.81	0.203	1.08	0.418	35.45	0.002*	4.13	0.002*
SIZE	0.34	0.004*	0.07	0.002*	0.37	0.027*	0.07	0.001*
AGE	-31.2	0.090**	-3.53	0.388	-117.5	0.001*	-6.30	0.114
R Squ.	0.7912		0.7682		0.7288		0.8419	
DWS	1.2738		1.0608		1.2027		1.0608	
F Value	0.0000		0.0000		0.0000		0.0000	

\* Indicates that variables are significant at 5% level of Significance

\*\* Indicates that variables are significant at 10% level of Significance

Source: All the above tables are compiled by author



# Relationship between Intelligence and Entrepreneurial Intention of Business Graduates of the University of Chittagong

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## Abstract

The study aims to explore the relationship between emotional intelligence (EI), social intelligence (SI), cultural intelligence (CI), and entrepreneurial intentions (EnI) among the sample of business students of the University of Chittagong. The social learning theory (SLT) was used to determine the association between independent variables and dependent variable. The required data were collected through an online questionnaire using the google survey form administered among the current MBA students of the Faculty of Business Administration, University of Chittagong. The total number of valid responses was 289. Convenience sampling technique was used to select the students. Correlation and regression analysis were examined by using SPSS 21.0 to examine the hypotheses. The results of the study revealed that emotional intelligence, social intelligence, and cultural intelligence have a significant impact on entrepreneurial intention among the business students. The study recommends providing necessary initials and guidance to the business students for developing their emotional, social, and cultural intelligence, which will trigger them to become successful entrepreneurs. The study was failed to count all universities in Bangladesh. If respondents were selected randomly and it able to count other universities' business students, then the findings would be more significant of the study. Both practical and academic implications contains in the study. Some of the limitations along with some directions for future research endeavor have also been provided in this study.

**Keywords:** Emotional Intelligence, Social Intelligence, Cultural Intelligence, Entrepreneurial Intention, and Social Learning Theory.

## 1. Introduction

To ensure the socio-economic growth and development of any country, particularly for underdeveloped and developing countries creation of employment is a crucial task. But the economic, technical, intellectual, and other infrastructural facilities may not support the smooth creation of a sufficient level of employment thereby. To overcome this obstacle, creation of self-employment or engagement in entrepreneurial works is the best alternative in this regard. Because numerous historical experiences and world crises (like Corona Virus pandemic) have shown the necessity of entrepreneurship development to face the incident of frequent job loss and other forms of insecurity particularly during this type of critical situation (Farrukh et al. 2017). Entrepreneurship is vastly considered as one of the efforts to decrease the rate of

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unemployment and to reduce poverty rates in many countries like- Germany, Pakistan, Malaysia, Spain, Greece, and Italy (Farrukh et al. 2017; Othman, Muda & Amira 2018; Palalić et al. 2017; Zampetakis et al. 2009). In order to support socio-economic growth and development, policymakers and strategic planners are also compelled to consider entrepreneurship development as a vital job in this regard (Sitepu 2020).

To engage individuals (mostly business students) in entrepreneurship, it is of utmost importance to create entrepreneurial intentions among them. Because an individual's entrepreneurial intention is considered as a critical antecedent of his/her actual entrepreneurial works in terms of the creation of self as well as others employment by starting a new venture (Miao et al. 2018). To engage in entrepreneurial work by the business students a certain level of emotional, social, and cultural intelligence may be supportive in the process of creation of entrepreneurial intention among them. People who are highly interested to be entrepreneurs usually they have the higher entrepreneurial intention to be so (Naim 2018). In the process, entrepreneurial education enables creation of the required knowledge, skills, and intelligence base among the business students which allows them to rethink in searching for jobs rather it drives them to create jobs (Kabir, Haque & Sarwar 2017; Akter et al. 2021). Emotional intelligence may allow them (business students) to be more cautious about their own and others' emotions (Othman et al. 2017; Rahim et al. 2002; Archana & Kumari 2018). Social intelligence lets them be more competent in their social interactions (Ivashkevych & Yatsjuryk 2019; KS & Amalraj 2019; Rahim, Civelek & Liang 2018) and cultural intelligence permits them to be more aware and knowledgeable about other cultures (Berraies 2019; Fang, Schei & Selart 2018; Dheer & Lenartowicz 2018; Presbitero & Quita 2017). In this way, possession of a certain degree of EI, SI, and CI by the business students may allow them to get a good platform in order to nurture their (own) entrepreneurial intention to initiate a new venture in near future (Archana & Kumari 2018). Though all grads should strive to have some level of EI, CI, and EnI, the business graduate is the one on whom we will be concentrating. The entrepreneurial inclinations of business graduates have been addressed here because of this. The matter of interest to conduct the study is to explore whether the business students' mindset actually focusing to engage themselves towards the entrepreneurial works or not. More specifically the study aims to:

- i) Examine the relationship between EI and entrepreneurial intention,
- ii) Evaluate the association between SI and entrepreneurial intention, and
- iii) Assess the connection between CI and entrepreneurial intention.

The study attempts to use the social learning theory introduced by Bandura and Walters (Bandura & Walters 1977) which is most popular and adapted theory to draw the background of how individual observing, modeling, and imitating the behaviors, attitudes, and emotional reactions of others. This theory is used for looking at the interaction between cognitive as well as environmental factors that affect human learning and behavior. The social learning theory is based on three fundamental concepts: idea generation through observation, internal mental processes, and acts as a guide for behavior.

## 2. Literature Review

### 2.1 Emotional Intelligence

To manage people successfully in any position, it is of utmost importance to know and understand yourself as well others thereby. For doing so one needs to be emotionally intelligent enough in this regard, which actually drives towards the exploration of emotional intelligence concept. Initially, EI notion was introduced by Mayer and Salovey (Salovey & Mayer 1990) and popularized by Goleman (Books & Goleman 1995). EI is defined as a type of social and personal intelligence which involves the capability of one's to observe one own along with others' moods and emotions, to differentiate among them, and to use that info to direct one's thinking and actions (Salovey & Mayer 1990). EI refers to the ability of a person to perceive one's along with others' emotions, realizing the meaning of those emotions and regulating those emotions accordingly (Rahman & Uddin 2016; Robbins, Judge & Vohra 2019). EI is also described as the ability to give absolute reasoning about emotions along with the use of emotions and emotional knowledge in this regard to enhance one's thought (Mayer, Salovey & Caruso 2008).

EI falls between the intersections of one's mental processing of emotional information and its combination with cognitive information (Cartwright & Pappas 2008). EI is the capability, attribute, or set of diverse skills and proficiencies that captures fascinating distinct differences (Miao et al. 2018). Sitepu (2020) similarly defined EI by focusing on the five dimensions (self-awareness, self-regulation, self-motivation, recognize other people's emotions/empathy, and social skills). EI suggested by Goleman (Books & Goleman 1995) as one's ability to control oneself, eagerness and determination, as well as the ability to persuade oneself. Five components of EI (Rahim et al. 2002; Books & Goleman 1995; Biswas & Rahman 2021; Bhattacharjee & Rahman 2016; Rahman, Ferdausy & Uddin 2012) are as follows:

- 1) **Self-awareness** is connected with the ability to check what types of moods, emotions, and instincts one is experiencing and why (Rahim et al. 2002). It also considers the effects of one's feelings on others. Sitepu (2020) described it as the self-capability of observing and examining diverse feelings that happen.
- 2) **Self-regulation** refers to the ability to preserve one's own emotions and compulsions in check, to stay cool in potentially unstable circumstances, and to preserve composure notwithstanding one's emotions (Rahim et al. 2002).
- 3) **Motivation** represents to stay focused on one's goals regardless of any form of hindrances in achieving those goals, moving forward with the hope of attaining success without

holding the fear of failure, and always be ready to accept and adopt any sort of changes that may arise (Rahim et al. 2002). The ability to control one's emotions can later be converted into an instrument in accomplishing goals and better self-management (Sitepu 2020).

4) **Empathy** is linked with interpreting the feelings communicated through verbal as well as nonverbal cues, making available emotional support to others when needed, and realizing the links between others' emotions and actions (Rahim et al. 2002). Sitepu (2020) stated empathy as the ability to provide emotional support to others.

5) **Social skills** connected to one's capability to manage any complications without undermining those along with s/he works, without permitting his/her own or others' undesirable feelings to hinder cooperation and to manage emotional conflicts by applying appropriate techniques and diplomacy thereby (Rahim et al. 2002).

## 2.2 Social Intelligence

As all humans are social beings, they have to continuously interact with others within their social relationships. And these social interactions have also required the possession of certain skills and levels of competencies to interact/ communicate with others effectively. This essence of social interactions pushes the concept of social intelligence. The concept of SI first introduced by Dewey in 1909 and then popularized by Thorndike in 1920 (Rahim et al. 2018; Rahim et al. 2019). Thorndike described SI as the ability to comprehend and manage gender and age differences and accordingly to behave sensibly in human relations (Tamunosiki-Amadi, Sele & Ernest 2020). SI refers to the capability to build relations with others having interpersonal proficiency, the capacity to assess others' feelings, tempers, and inducements, to understand and being an expert in interpreting nonverbal gestures (Tamunosiki-Amadi, Sele & Ernest 2020). SI encompasses understanding others' thoughts, values, beliefs, attitudes, behaviors, desires, and intentions, and interacting accordingly (Malik, Siddique & Hussain 2018; Rahim et al. 2014). That means SI is the individual's bank of knowledge about various social matters (Habib, Saleem, & Mahmood 2013).

SI is also seen as a function of a specific culture that may vary in other cultures (Dong, Koper & Collaço 2001). One's capacity of understanding and acting realistically and emotionally with others in their interactions are considered as SI (Herzig, Lorini & Pearce 2019). KS and Amalraj (2019) stated that SI is connected with individuals' ability to relate and interact their skills in a meaningful way to any social situation. More comprehensively, SI is suggested as the ability to be conscious of pertinent social situational contexts; to deal with the circumstances or challenges effectively; to comprehend others' apprehensions, moods, and emotional states; and to speak clearly and convincingly knowing what to say, when to say it and how to say it and to build and maintain positive relationships with others (Rahim et al. 2014). This definition of SI encompasses four different abilities: situational awareness, situational response, cognitive empathy, and social skills. Where, the first two abilities namely, situational awareness and situational response were classified as primary abilities and which are essential for one's career success and effective leadership and the remaining two are cognitive empathy and social skills called the secondary abilities which can help a leader to stay alert of various social situations,

and thus it improves their competence in responding to social situational contexts (Rahim 2014).

1. **Situational awareness** is connected with the ability to understand or analyze the relevant social situational perspectives (Rahim et al. 2018). It is also seen as one's capability to read and comprehend various social situations which may influence behavior and allow selecting effective strategies thereby (Albrecht 2007).

2. **Situational response** involves one's know-how or competencies to deal with or to adjust to any social situations effectively to obtain the desired results (Rahim et al. 2018).

3. **Cognitive empathy** is linked with putting oneself knowingly into another person's mind, to recognize what that person thinks or feels about a particular issue/situation and where that person can be from either inside or outside of the organization (Decety & Yoder 2016; Decety 2015; Batson 2009).

4. **Social skills** is related with one's clarity to speak convincingly by knowing clearly what, when and how to say it (Rahim et al. 2018). One's proficiency in social skills helps him/her to communicate and rationalize his/her decisions and actions with others more effectively.

### 2.3 Cultural Intelligence

In the era of globalization, there is a wide scope of free flow or movement of manpower and other resources from one geographical arena to another. Due to this mobilization specifically, human resources need to adapt and work in a completely new or unknown culture of another country context. That means being an employee needs to work in a multicultural environment as everybody knows the reality of workforce diversity in a particular workplace. This workforce diversity here refers to the cohabitation of employees with diverse characteristics like- age, sex, caste, language, religion, skills, and so on (Berraies 2019). Therefore to survive and succeed in a diverse work environment or culture one needs to be culturally competent enough and which creates the urgency of the notion of CI. CI refers to an individual's capability to execute and manage tasks effectively in culturally diverse states and work settings (Ott & Michailova 2018). CI is defined as a person's capability for successful adaptation to new and vibrant cultural situations (Ang & Van Dyne 2008; Earley & Ang 2003). It refers to an individuals' skills and abilities to work in a relatively multicultural work settings rapidly, easily, and effectively (Caligiuri et al. 2011). CI is the competency for successful interactions in the cross-cultural context by expatriates, managers, and others who are involved thereby (Fang et al. 2018). More broadly, CI as the integration of cultural knowledge particularly- knowing the fundamental principle about cultures, ability to differentiate one culture from another, and the behavioral ability to adjust behavior based on a particular situation demands based on the origin and culture of individuals with whom one's are interacting (Thomas 2006). Ang and Dyne (Ang & Van Dyne 2008) enumerated four basic constituents of CI which are- cognitive CI, meta-cognitive CI, motivational CI, and behavioral CI:

1) **Cognitive CI** focuses on the existing knowledge of norms, behaviors, and customs in different cultures. That means knowing the similarities and differences between cultures

namely- the norms, practices, and conventions of another culture which can be learned either by formal education or by personal experiences (Ang et al. 2007).

2) **Meta-cognitive CI** refers to the capability of processing information during and after a culturally diverse experience. This allows an individual to recognize the specific preferences of culturally diverse people with whom s/he is interacting and be able to adjust his/her mental models accordingly before and after those interactions thereby (Ang et al. 2007).

3) **Motivational CI** reflects the drive and willingness to seek out and participate in intercultural experiences and to be spurred to learn more about cultural diversities. It refers to the individual's inherent interest and confidence to embrace an appropriate and adaptive behavior to interact with individuals of diverse cultures (Berraies 2019).

4) **Behavioral CI** refers to the ability to participate in suitable verbal and nonverbal actions in intercultural settings (Ang & Van Dyne 2008). This dimension of CI assumes that an individual holds a flexible range of behavioral responses and which allowed that individual to successfully implement the appropriate responses thereby as the situation demands (Ang et al. 2007). Individuals with high CI are considered to be culturally competent and better capable of working effectively with others' in diverse cultures (Ott & Michailova 2018).

## **2.4 Entrepreneurial Intention**

One's intention can drive him/her towards the desired destination eventually. So, for doing anything one must have the right intentions for that. Similarly, to be an entrepreneur or to start an entrepreneurial career one must possess the intention for doing so. EnI can be defined as an individual's level/extent of devotion in initiating a fresh venture (Miao et al. 2018). Sitepu (2020) described EnI as one's interest in becoming an entrepreneur and also suggest five different dimensions of entrepreneurial intention, which includes- a) the frequency of joining in entrepreneurial activities, b) the aspiration to do or own something, c) the things or doings that are liked, d) the types of activities that are liked, e) the effort to realize the desire or feeling happy about something. EnI implies the individuals' commitment and behavior to engage in or the individuals' intention to set up or start a new venture (Dinis et al. 2013; Gerba 2012) and deliberately plan for doing so in the future (Thompson 2009). EnI is stated as a focused mindset that directs the individual's attention and know-how toward intentional entrepreneurial behavior (Wu et al. 2019). EnI has also been seen as the replication of one's state of mind (Gupta & Bhawe 2007) and stimuli to take up the initiative to be self-employed rather than being employed (Gerba 2012; Karimi et al. 2016). More comprehensively, understanding of EnI offers insight hooked on the venture creation process of individuals' (Galanakis & Giourka 2017). EnI also acts as an antecedent to entrepreneurial action which involves spotting opportunities, seeking information, finding relevant resources, and establishing and launching a business (Lee et al. 2011).

### 3. Hypotheses Development

#### 3.1 Relationship between EI and EnI

Existing studies (Archana & Kumari 2018; Kanonuhwa, Rungani & Chimucheka 2018; Ingram et al. 2019; Ngah, Salleh & Sarmidy 2016) showed a substantial relationship between EI and EnI. Studies have found a strong relationship between EI and transformational leadership style (Rahman et al. 2012; Rahman et al. 2020); components of EI and charismatic leadership (Biswas & Rahman 2021). Studies also revealed that leaders with high EI use positive emotions to improve their decision-making and leadership in organizational settings (Biswas & Rahman 2017; George 2000). Sitepu (2020) revealed in a study which was conducted in Indonesia and Malaysia context, that the variable of emotional intelligence has a positive effect on student entrepreneurial intention variables. The results of the study indicate that the dimensions of emotional intelligence have given positive impetus to entrepreneurial intentions. Study findings also support that the overall emotional intelligence level has a strong impact on entrepreneurial intentions and behavior (Kanonuhwa, Rungani & Chimucheka 2018; Fakhreldin & Hattab 2019; Archana & Kumari 2018; Biswas, Rahman & Ferdausy 2017). Fakhreldin and Hattab (2019) stated that the individuals, who have certain entrepreneurial attributes, usually possess a higher chance of becoming an entrepreneur(s) and commencing their venture in near future; where EI of them contributes positively to their entrepreneurial attributes in pursuing their entrepreneurial intentions.

Miao et al. (2018) conducted a meta-analysis on EI and EnI, the results confirmed that EI and EnI is positively related. Individuals having a high level of EI, are capable of monitoring and managing emotions effectively and coping with negative emotional states and stresses, which eventually decreases the tension when launching and functioning a new venture (Humphrey 2013). EI also allows individuals openness in their interactions when they are communicating with others and better able to manage their own and others' emotions thereby ensuring the attainment of desired goals (Mayer, Caruso & Salovey 2016). Studies also assist that the notion of EI is very much influential to enhance the propensity of individuals to become an entrepreneur or to engage in an entrepreneurial career (Othman et al. 2017; Ingram et al. 2019; Fernández-Pérez et al, 2019). Other research (Ramy, Beydokhty & Jamshidy 2014)) rejects the idea that emotional intelligence and creativity are directly related. Therefore, based on the existing literature it can be hypothesized that

**H1:** Emotional intelligence is positively associated with the entrepreneurial intention of the business students in the University of Chittagong.

#### 3.2 Relationship between SI and EnI

To make sure healthy co-existence with others within a social interaction, SI helps in solving social life problems and provides supports to tackle various social issues as well (KS & Amalraj 2019). Hence, SI is very necessary for a person to ensure effective interpersonal interaction and successful social adjustment either in one's personal life or in an organizational setting. The existing study confirmed that, when an organization is constituted with socially intelligent people, it allows its employees to be motivated to do their jobs, sustain in the organization, and

become committed to their jobs (Tamunosiki-Amadi et al. 2020). That means individuals who are possessing a high level of SI can interact effectively with their surroundings (Tamunosiki-Amadi et al. 2020). Higher level of social intelligence in students can contribute towards their acquiring and strengthening entrepreneurial skills (Karimi & Ataei 2022). Socially competent faculty members would better understand and measure the pupils' needs to orient and facilitate their learnings to allow them to be self-sufficient and employable (Pandey, Bhalerao & Kulkarni 2021).

A study conducted in Istanbul, Turkey revealed that SI had a significant and positive contribution to the entrepreneurial intention of newly graduated university students and the study concluded that SI is an important factor in entrepreneurial intention (Aykol & Yener 2009). Study also provide an insight that students' entrepreneurial intentions are significantly influenced by their level of social competencies (Bonesso et al. 2018). Therefore, based on the above literature the hypothesis can be developed as follows:

**H2:** Social intelligence is positively associated with the entrepreneurial intention of the business students in the University of Chittagong.

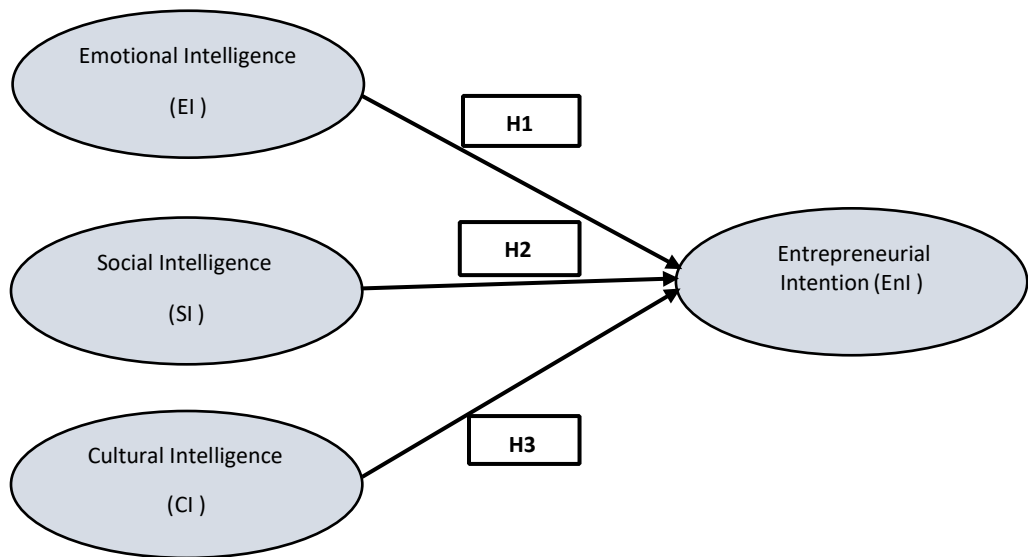
### **3.3 Relationship between CI and EnI**

CI is considered as one of the major concerns for the self-employed at the different phases of the entrepreneurial activity: from the realization of self-employment intentions to opportunity utilization, entry, and success (Baluku et al. 2019). Studies (Magnusson et al. 2013; Jiang & Park 2012) have shown that CI is associated with EnI and performance including the capabilities to identify and inclination for exploitation of business opportunities arises in different culture. Various studies have suggested that CI act as a key element of successful interactions in international markets (Alon & Higgins 2005); such as leadership effectiveness (Rockstuhl et al. 2011); cultural adaptation (Lee & Sukoco 2010) and innovation (Elenkov & Manev 2009). CI is also considered as an important competency in different areas, like management, decision making, leadership, effective teamwork, and negotiations (de la Garza Carranza & Egri 2010; Brislin, Worthley & Macnab 2006; Earley & Mosakowski 2004) along with motivating in creativity (Bogilović & Škerlavaj 2016). When a culturally diverse environment is properly managed, it can lead to an excellent performance outcome such as creativity (Darvishmotevali, Altinay & De Vita 2018). Entrepreneurs with the possession of a high level of CI tend to exhibit a positive attitude toward new cultures and have a stronger intention to engage in international entrepreneurship (Jie & Harms 2017; Helms et al. 2014). Multi-cultural identities positively impact the entrepreneurial intentions of individuals (Dheer & Lenartowicz 2018). Study findings also explored that the university students with the higher CI, indicate the possibility of greater liking and intention to pursue a career as an expatriate (Presbitero & Quita 2017). Therefore, based on the above discussion the following hypothesis can be suggested:



**H3:** Cultural intelligence is positively associated with the entrepreneurial intention of the business students in the University of Chittagong.

Based on the literature review and suggested hypotheses, the proposed research model of the study can be developed as follows:



**Figure -1:** Proposed Research Model

## 4. Research Methods

### 4.1 Participants

The structured questionnaire via the google survey form was sent to the existing MBA students' email addresses which were collected from the MBA students' data bank by considering them as business students. This study selected business students because, usually, they have a better understanding and intention towards engaging in entrepreneurial works. Total 500 questionnaires were sent out, 311 were returned, of which 22 were rejected due to incomplete and inconsistent responses. The response rate was, therefore, 62.2%. In business and management research, response rate can range from 50% to 80%, with an average of 55.6% found by Baruch & Holom (2008). However, 57.8% (289 of 311) of responses were finally used for data analysis.

Demographic features also provide some useful information about the respondents regarding their gender, age, and department. Among the respondents, the percentage of male respondents was 52% (151 out of 289) which is slightly higher than female respondents (48%). The age range of the respondents discovered majority of the respondents' age falls between the range of age 24 to 25, which is 57% of the total respondents (165 out of 289). 31% of respondents' age range is age 23 or less (89 out of 289). And the rest of the respondents (35 out of 289) represent 12% of the total respondents' age range which is age 26 or more. The number of respondents

from several departments shows that the majority of the respondents were from the Management Department (97 out of 289), followed by the Human Resource Department (73 out of 289), Accounting Department (35 out of 289), Finance Department (31 out of 289), Marketing Department (30 out of 289) and the Department of Banking and Insurance (23 out of 289).

#### **4.2 Measurement Scales' Reliability and Validity**

Reliability ensures the consistency of a set of items when one attempts to measure any study variables/concepts (Cooper, Schindler & Sun 2006). The measurement scales used in the study collected from previous studies. A five-point Likert scale (5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly disagree) was used for ranking each of the items in the study.

Emotional intelligence was measured by using the instrument developed by Rahim et al. (2002). According to the instrument, emotional intelligence was measured by using forty items (sample items are: I keep my distressing emotions in check, I am well aware of my moods). The Cronbach's alpha (internal consistency reliability) of the instrument was 0.82.

Social intelligence was measured by using the instrument originated by Rahim (2014). According to that survey instrument, social intelligence was measured by twenty eight items (sample items are: I am aware of what is happening around me, I make appropriate decisions to deal with crisis situations). The Cronbach's alpha (internal consistency reliability) of the instrument was 0.80.

Cultural intelligence was measured by using the instrument used by Gozzoli and Gazzaroli (Gozzoli & Gazzaroli 2018). According to the survey instrument, cultural intelligence was measured by twenty items (sample items are: I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds; I enjoy interacting with people from different cultures). The Cronbach's alpha (internal consistency reliability) of the instrument was 0.84.

The entrepreneurial intention was measured by using the instrument used by Liñán and Chen (Liñán & Chen 2009). According to the survey instrument, the entrepreneurial intention was measured by six items (sample items are: I'm ready to make anything to be an entrepreneur, my professional goal is becoming an entrepreneur). The Cronbach's alpha (internal consistency reliability) of the instrument was 0.94.

To measure the scale reliability most widely used method is Cronbach's alpha (Malhotra & Dash 2016). Cronbach's alpha value may range from 0 to 1, but the satisfactory value is required to be more than .60 for the scale to be reliable (Malhotra & Dash 2016; Cronbach 1951). However, Cronbach's alpha of the emotional intelligence, social intelligence, cultural intelligence, and entrepreneurial intention scales for the current study were 0.82, 0.80, 0.84, and 0.94 respectively. Therefore, these four instruments were highly reliable for the data collection.

Validity reflects the degree to which a measure truthfully represents a concept (Zikmund et al. 2013). The instruments used in the study were well-established and widely used instruments which ensure the face, content, and construct validity of the instruments. So, no particular validity tests were required in the study.

### 4.3 Data Collection

An Online Google Survey form link was sent to the target respondents through their personal e-mail, messenger inbox and WhatsApp addresses. Respondents' personal e-mail, messenger, and WhatsApp addresses were collected from the reserved database of students with the help of their respective class representatives. A convenience sampling technique was used to collect the responses from the respondents. During the COVID-19 lockdown, data for the study were gathered. In order to make the survey participants more accessible, the convenience sampling technique was adopted. In collecting data, the researchers personally contacted most of the respondents and requested them to give 10 to 15 minutes to complete the questionnaire (in the Google Survey form) which was sent to them via their e-mail, messenger, and WhatsApp addresses.

### 4.4 Analytical tools

Firstly, Pearson correlation analyses were conducted to examine the associations among the emotional, social and cultural intelligence with the entrepreneurial intention of business students. Secondly, to evaluate the impact of EI on EnI, SI on EnI, and CI on EnI linear regression analysis was conducted (Rodrigues et al.2019; Mortan et al. 2014). Analyses were conducted with the aid of SPSS 21.0.

### 5. Findings

Table 1 displays the total number of respondents of each variable, mean and standard deviation, and reliability coefficient using Cronbach's Alpha of the study variables. It is clear that the reliability coefficient of the constructs and scale values are higher than 0.6 (minimum cut-off value), hence the scale is reliable for statistical measurements and analyses.

**Table 1:** Means, Standard Deviations, and Cronbach's Alpha of variables

	N Statistic	Descriptive Statistics		
		Mean Statistic	Std. Deviation Statistic	Cronbach's Alpha
EI	289	4.03	.44	0.82
SI	289	4.09	.35	0.80
CI	289	3.80	.38	0.84
EnI	289	3.99	.66	0.94

**Note:** EI = Emotional intelligence, SI = Social intelligence, CI = Cultural intelligence, and EnI = Entrepreneurial intention

**Source:** Authors' own research, 2022

### 5.1 Correlations among emotional, social, cultural intelligence with entrepreneurial intention

From Table 2, it is found that there is a significant positive correlation between emotional, social, and cultural intelligence with the entrepreneurial intention.

**Table 2:** Correlations among Variables

Correlations				
	EI	SI	CI	EnI
EI	1			
SI	.61**	1		
CI	.65**	.58**	1	
EnI	.43**	.33**	.39**	1

\*\* . Correlation is significant at the 0.01 level (2-tailed). N=289  
**Note:** EI = Emotional intelligence, SI = Social intelligence, CI = Cultural intelligence, and EnI = Entrepreneurial intention

**Source:** Authors' own research, 2022

It is revealed from the table that a moderate positive relationship between EI and EnI ( $r=0.43^{**}$ ) while a low /weak positive correlation between SI and EnI ( $r=0.33^{**}$ ). CI also displays a modest positive correlation with EnI ( $r=0.39^{**}$ ). As Taylor (1990) stated the cutoffs value of correlation coefficients (in absolute value) which are less than or equal to 0.35 are generally considered to represent low or weak correlations, 0.36 to 0.67 modest or moderate correlations and 0.68 to 1.0 strong or high correlations with  $r$  coefficients greater than or equal to 0.90 represents very high correlations. Although Table 2 showed a positive correlation between EI, SI, and CI with the EnI of the business students, it cannot explain how much the entrepreneurial intention of the business students was affected by emotional, social, and cultural intelligence. The following regression analysis will provide an additional explanation about the impact of emotional, social and cultural intelligence on the entrepreneurial intention of the business students.

## 5.2 Regression analyses among emotional, social, cultural intelligence and entrepreneurial intention

Review of Table 3 demonstrated that about 18%, 11%, and 15% of the variances in the dependent variable - entrepreneurial intention were explained by the predictor variables - emotional intelligence, social intelligence and cultural Intelligence respectively. That means EI explains 18%, SI explains 11%, and CI explains 18% of the variance in the EnI of the business students in the University of Chittagong. Above discussion implies that emotional intelligence, social intelligence and cultural Intelligence act as influencers in the EnI of the business students in the particular context.

**Table 3:** Summary of Regression Analysis regarding EI, SI, CI and EnI  
**Source:** Authors' own research, 2022

Predictors	Dependent Variable: Entrepreneurial Intention				
	Co-efficient ( $\beta$ )	S.E. ( $\beta$ )	Value of t-statistic	Value of R Square	Value of F-statistic
<b>EI</b>	.43	.08	8.01**	.18	64.12**
<b>SI</b>	.33	.11	5.87**	.11	34.45**
<b>CI</b>	.39	.10	7.15**	.15	51.13**

\*\*. Significant at the 0.01 level (2-tailed). N=289

**Note:** EI = Emotional intelligence, SI = Social intelligence, CI = Cultural intelligence, and EnI = Entrepreneurial intention.

## 6. Discussions

The first purpose of the study was to explore the relationship between emotional intelligence and entrepreneurial intention. Hypothesis 1 stated that there was a positive relationship between emotional intelligence and entrepreneurial intention. The result of the current study also supported this hypothesis. Thus, individuals (particularly business students) with higher EI have more entrepreneurial intention to engage themselves in entrepreneurial works. The result of this hypothesis is also consistent with the findings of several studies (Othman et al. 2017; Sitepu 2020; Miao et al. 2018; Kanonuhwa et al. 2018; Ingram et al. 2019; Archana & Kumari 2018; Fernández-Pérez et al, 2019; Yıldırım, Trout & Hartzell 2019; Nuha & Fasana 2018). This result also offers support for the theoretical argument that EI may be an important aspect in fostering business students' entrepreneurial intention.

The second purpose of the study was to discover the relationship between social intelligence and entrepreneurial intention. Hypothesis 2 stated that there was a positive relationship between social intelligence and entrepreneurial intention. The result of the current study also supported this hypothesis. Thus, individuals (particularly business students) with higher SI have more entrepreneurial intention to engage themselves in entrepreneurial works. This positive relationship is also consistent with the previous research findings (Aykol & Yener 2009; Bonesso et al. 2018). This result also offers support for the theoretical argument that SI may be an important aspect in nurturing business students' entrepreneurial intention.

The third purpose of the study was to see the relationship between cultural intelligence and entrepreneurial intention. Hypothesis 3 stated that there was a positive relationship between cultural intelligence and entrepreneurial intention. The result of the current study also supported this hypothesis. Thus, individuals (particularly business students) with higher CI have more entrepreneurial intention to engage themselves in entrepreneurial works. The result of this hypothesis is also found similarity with the results of several studies in this regard (Dheer & Lenartowicz 2018; Presbitero & Quita 2017; Jie & Harms 2017; Helms et al. 2014). This result also offers support for the theoretical argument that CI may be an important aspect in promoting business students' entrepreneurial intention.

Above all, the study found that there was a positive correlation between emotional, social, and cultural intelligence with entrepreneurial intention among the business students. By the improvement of business students' emotional, social and cultural intelligence can ensure their active and extensive engagement towards entrepreneurial works in the near future.

## **7. Implications of the Study**

From the theoretical perspective, this study not only addresses the literature gap particularly in the Bangladeshi context concerning the study of the relationship between emotional, social, and cultural intelligence with the business students' entrepreneurial intention but also boost the body of knowledge from the academic perspective. This study also contains practical implications. It creates an urgency for business students to advance their intelligence (in terms of emotional, social, and cultural) base in order to drive their entrepreneurial intention to engage them in entrepreneurial works. Therefore, business students should acquire and possess an adequate level of intelligence base to make them successful entrepreneurs both in local and global markets. When business students possess sturdy entrepreneurial intention due to their potential intelligence base they will be more likely to engage in entrepreneurship. This will ultimately benefit the individual themselves and the society as well by creating sufficient employment opportunities, by increasing individuals' income level and their standard of life, by eliminating social chaos and inequalities and in the broader sense, it benefits the whole nation.

## **8. Limitations and Future Research Directions**

Despite the inclusive relevance of the study in the Bangladesh context, the present study is not above criticisms. The major limitation of the study was of using convenience sampling that might limit the generalizability of the findings. Another limitation of this study is that the respondents were asked to rate their own intelligence. A person himself or herself cannot always be entirely rational or fair in judging him/herself and thereby it is not possible to provide an independent estimation. Moreover, the scope of the study was only the Chittagong University business students which are very narrow in terms of revealing generalized results.

Since the study conducted based on the convenience sampling; it should be carried out by using other sampling techniques like random sampling to get more generalized results. Further research should count other private and public universities' business students as their potential respondents to ensure a cross-sectional study. The study can also be extended to include a larger sample size to ensure robust findings. Additionally, longitudinal studies may be conducted to ascertain the validity of the study. Moreover, region basis (like Dhaka, Chattogram, Rajshahi, Khulna, Sylhet, Barisal, Rangpur, and Mymensingh) study among universities' business students within the country can be conducted to get comparable results of the study. And most importantly cross-cultural study can be carried out to find more generalized results internationally.

## **9. Conclusion**

The study scrutinizes the pervasive applicability of the business students' entrepreneurial intention with the help of Bandura and Walters's social learning theory (Bandura & Walters

1977). The study finds the positive effects of both environmental and cognitive factors interact to influence human learning and behavior as guided in social learning theory on the generation of entrepreneurial intention of business students'. In conclusion, emotional, social, and cultural intelligence is believed to be the key factors in determining the entrepreneurial intention of individuals (particularly of business students), which leads them to participate in entrepreneurial doings. The more they engaged in entrepreneurial works the more will be the country's employment rate and economic efficiency. The level of industrialization and the overall GDP of the country will certainly increase. The result of this study is believed to have contributed considerably towards understanding the driving issues in entrepreneurial intention, particularly among business students. So the proper nurturing of motivating matters in entrepreneurial intention among business students are expected to be ensured.

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# Social Support and Work-Life Balance among Female Bankers: An Empirical Study

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## Abstract

Drawing on the Conservation of Resource (COR) theory, the purpose of this study was to analyze the role of multiple foci of support (perceived workplace support, perceived family support, perceived supervisory support) on work-life balance (WLB) of female workers in the perspective of a developing economy (i.e., Bangladesh), particularly in Barishal City. This study considers the broad concept of social support influencing work-life balance and applies it in Barishal city particularly. The proposed research framework was empirically tested by the data collected from 75 bankers (N=75) of Barishal city using a convenience sampling technique. To evaluate the collected data, sophisticated statistical techniques and structural equation modeling (SEM) were used to analyze the hypotheses. The result revealed that perceived workplace support and perceived family support positively influence women's work-life balance. This research extends the literature on work-life balance by representing significant aspects influencing work-life balance among banking women workers. The implications are elaborated with some recommendations.

**Keywords:** Perceived Family Support, Workplace Support, Supervisory Support, Work-Life Balance, Structural Equation Modeling.

## 1. Introduction

A healthy work-life balance includes both professional and personal pursuits. Due to its potential to improve business and individual outcomes, work-life balance (WLB) has gained greater attention from academics, professionals, practitioners, and politicians worldwide (Wilkinson et al., 2017). In (Lockwood, 2003) coined the term "work-life balance" to describe the juggling of work and personal commitments. Workers need a healthy work-life balance to be effective and focused in their professional and personal lives. Perceived support from coworkers and supervisors (Bagger & Li, 2014), perceived support from family and the job and perceived support from friends are only a few of the social support sources that researchers have suggested for achieving WLB (Bosch et al., 2018; Darabdhara et al., 2015). Thus, we aim at analyzing the role of multiple foci of support on the WLB of female workers in the perspective of a developing economy. Such an effort will make it clear how different supports influence women workers WLB in our perspective. Focusing on one part of life has a beneficial effect on all the others; thus, as a society, population, globalization, technology, and the number of

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working women have all changed rapidly, and so has the significance of WLB (Kossek et al., 2014). For working women, having a high level of (perceived supervisory support) PSUS is a key factor in realizing their full economic potential. Though studies on WLB are developing, they are still in their infancy (Kossek & Lautsch, 2018).

An increasing body of research examines the impact of organizational and individual factors on WLB, but research on the impact of various social support foci on WLB is just getting started (Feeney & Stritch, 2019). The more basic characteristics of WLB have gained limited attention, even though some study has concentrated on the specifics of work-family balance (Ferguson et al., 2012). Our findings are especially relevant in light of recent calls for more research on women's WLB (Achour et al., 2017), in particular concerning emerging market economies (Kumar et al., 2018), in contrast to the vast majority of cases cultured individuals from the enriched and Western world (Bosch et al., 2018).

Bangladeshi women are largely responsible for childrearing and housekeeping (Hossain & Rokis, 2014). In addition, they confront obstacles such as violence, social instability, early marriage, economic reliance, and gender discrimination (Bashir et al., 2016) and workers in Bangladesh receive fewer statutory benefits under the WLB than workers in Western and industrialized economies (Ogasawara et al., 2016). They also get only ten to fifteen days of annual leave, three months of maternity leave, one month of medical leave, and ten to fifteen days of required leave (in the banking industry) (10 to 15 days only in the banking sector). Due to harsh competition, intense job expectations, and a lack of official support structures and legislation, WLB is particularly necessary for women in the banking business of Bangladesh (Danelljan et al.). However, government help and WLB policies are limited, and people with a high WLB need more everyday work and family support (Bosch et al., 2018). Thus, it is interesting to look at how social support affects the WLB of women bankers in developing countries. As a result of socioeconomic upheaval and a surge in women's education, there has been a major shift in women's labour in Bangladesh. The employment of women can considerably help to enhance national productivity and fulfilling inclusive development goals. According to a 2015 estimate by the European Union, women may contribute \$28 trillion (26%) of the world's yield by 2025 if they are permitted to enter the workplace at the same rate as men. If women have sufficient aid and family-friendly policies are established, Bangladesh can likewise make such economic contributions. Women are compelled to give up careers and aspirations for non-work responsibilities, insufficient support and legislative protection (Bashir et al., 2016).

Given what has been said, it is important to find out what makes it hard for working women in Bangladesh, especially in the banking industry, to balance their work and personal lives. This study looks at how help at work, help from family, and support from society affect the WLB of women in the banking industry, especially in Barishal.

### **Research Objectives**

Within the context of a developing economy (i.e., Bangladesh), the objective of this study was to investigate the impact of multiple foci of support (perceived workplace support, perceived

family support, and perceived supervisory support) on the work-life balance (WLB) of female workers, with a particular emphasis on Barishal City.

## **2. Literature Review and Hypotheses Development**

### **2.1. Theoretical Background**

This study is based on the (Hobfoll, 1989) Conservation of Resources(COR) theory. Hobfoll says that people want to keep and protect their valuable resources (Hobfoll, 1989) and get more of them (Verma et al., 2018). This theory suggests that social support structures like the workplace, coworkers, supervisor, and family are good ways to find a better balance between work and life (Achour et al., 2017). Also, social support can help people keep and find their resources. Further, it is also useful for dealing with demanding role expectations and personal pressures. These PSUS sources could strengthen people at work and in everyday life, benefiting their health. We base our theory on the conservation of resource (COR) theory to explain why and how having social support at work and at home might assist employees in obtaining more WLB and so foster a sense of psychological availability and positive energy in the banking industry in Bangladesh, particularly in the city of Barishal.

### **2.2. Perceived Workplace Support**

Perceived workplace support measures how much employees think their company cares about them and values what they do (Eisenberger et al., 1986). The extant research on work-life balance has found that it is more important than family-friendly regulations in promoting a good work-life balance (Allen, 2001; Thompson & Prottas, 2006). It can be defined as the workplace's availability and quality of helpful relationships (Leavy, 1983). These social relationships are formed between employees, their immediate bosses, and other organizational members. Therefore, we define workplace assistance as a composite concept that comprises both aids from direct supervisors and assistance from members of the organization in general. It has been established that workplace support is a crucial contextual resource that can aid workers in attaining their objectives, including a higher WLB (Aryee et al., 2005; Greenhaus et al., 2012). (Behson, 2005; Frye & Breagha, 2004; Secret & Sprang, 2001; Warren & Johnson, 1995) found, perceived workplace support is associated with perceived levels of work-life balance for employees. Based on this discussion, we posit the following hypothesis,

***H1. There is a positive relationship between perceived workplace support and work-life balance.***

### **2.3. Perceived Supervisory Support**

PSUS stands for the understanding and help that higher-ups give to make work and life better (Kossek et al., 2014; Kottke & Sharafinski, 1988). It measures how employees feel their boss appreciates their work and cares about their well-being (Allard et al., 2011). WLB's PSUS shows that showing appreciation to employees is an important way to deal with stress and protect resources (Kossek et al., 2014). It also improves work and life, boosts self-confidence, morale, and self-esteem, and reduces anger, stress, anxiety, and tension caused by role overload (King, 1995). Several researchers (Arogundade et al., 2015; Bagger & Li, 2014) found that

PSUS and role conflict are linked significantly. However, (Achour et al., 2017) looked at Malaysian women and found a link between PSUS and WLB. (Behson, 2005; Frye & Breaugh, 2004; Secret & Sprang, 2001; Warren & Johnson, 1995)found, perceived supervisory support is associated with perceived levels of work-life balance for employees.

Based on this discussion, we posit the following hypothesis,

***H2. There is a positive relationship between perceived supervisory support and work-life balance.***

## **2.4. Perceived Family Support**

When people discuss perceived family support, they talk about how their family members think of them, care about them, and support them (King, 1995). Family members can provide practical and emotional support like coworkers. Instrumental family social support refers to the practical forms of aid family members may provide one another to facilitate their daily obligations (Adams et al., 1996).

Several experiments have shown the significance of family support in obtaining improved work and non-work consequences, especially in terms of work-family facilitation (Aryee et al., 2005), work-family conflict (Griggs et al., 2013; Wallace, 2005), effective coping with life stressors (Grzywacz & Marks, 2000), and enhanced efficiency in all areas of life (Ten Brummelhuis et al., 2014). Based on what (Griggs et al., 2013) found, getting social support from a spouse can give the main actor important material and emotional resources that help them reach important goals and aspirations. In short, having family social support enables actors to draw on their partners' strengths and gain more satisfying acting experiences across a variety of roles.

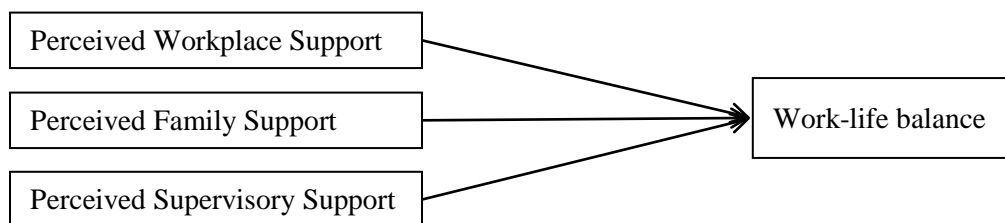
Based on this discussion, we posit the following hypothesis,

***H3. There is a positive relationship between perceived family support and work-life balance.***

## **3. Research Methods**

### **3.1. Measurement Instruments**

The measurement items for constructs within the proposed model were established from earlier studies to assure the legitimacy of all measures. The detailed measurement items of each construct with their respective sources are enlisted in appendix 1.





*Figure 1. Conceptual Framework***3.2. Samples and Procedures**

Table 1 lists the original studies from which we drew items for the research used in this study. Modifications were performed to fit the objectives of the scales used in the current research conditions. There are three parts to this questionnaire. The first part consists of information about work-life balance and the context of the current investigation. The next section includes the respondent's education, age, gender, and marital status, among other things. The final section contains measurement items used to evaluate the proposed study model's various constructs on a 5-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). Fifteen questionnaires were sent out to seniors as part of a pilot research to gauge interest and determine the questionnaire's viability. Feedback from the pilot study is applied to make proper adjustments as suggested.

The participants in this study were working women in the banking industry who care a great deal about achieving a work-family balance in Barishal City. The target population of this study was the working women in banking sector in Barishal City. However, many researchers find that at a 5% confidence level, a sample size of 30 to 500 is enough (Altun et al., 2017). The choice of sample size should be based on how good the sample is in broad intervals (Morse, 1991; Palmer et al., 2004) We collect (N=75) respondents. The researcher collected data demonstrating face to face interview.

**3.3. Statistical Tools for Analysis**

Researchers use structural equation modelling for analyzing multiple relationships of a model. It is a two-step modelling technique applied to analyze the proposed hypotheses. Both the measurement and structural models were conducted in the SEM process. Thus, we employed it in our study. It is more beneficial than any other tool (Gefen et al., 2000). Smart PLS is a popular software tool for Partial Least Square in SEM (Wong, 2013), which was applied in analyzing the proposed hypotheses. We import survey data from Google Forms into Microsoft Excel for analysis in Smart PLS. Besides, we use SPSS to analyze the demographic variables.

**Table 1. Technical Review**

Fieldwork Period:	July-August 2022
Population:	Women workers in banking industry in Barishal.
Population size:	Unknown
Survey type:	Face to face interview
Sampling method:	Convenience Sampling
Sample Size:	N=75
Confidence interval:	95%

**4. Results**

**4.1. Demographic Statistics**

*Table 2. Demographic Profile of Respondents*

<b>Items</b>		<b>Frequency</b>	<b>Percentage</b>
Age	21-30	34	45.3
	31-40	26	34.7
	41-50	9	12.0
	Above 50	6	8.0
Education	Honors	24	32.0
	Masters	51	68.0
Designation	Branch Manager	12	16.0
	Loan Officer	17	22.7
	Senior Manager	12	16.0
	TAO	34	45.3
Monthly Income	21000-30000	29	38.7
	31000-40000	13	17.3
	41000-50000	15	20.0
	Above 50000	18	24.0
Job Tenure	1-3 years	34	45.3
	3-5 years	12	16.0
	5-7 years	17	22.7
	Above 7 years	12	16.0
Marital Status	Married	47	62.7
	Single	28	37.3
Children	No	39	52.0
	Yes	36	48.0

Table 2 shows that out of 75 valid respondents, 45.3% fell within the age range of 21-30, 34.7% fell within the age range of 31-40, and 12.0% fell within the age range of 41-50. Additionally, 32.0% of respondents earned a bachelor's degree, while 68.0% earned a master's. Nearly two-thirds (62.7%) of those who answered the survey are married, while slightly more than a third (37.5%) are single. Nearly half of those who answered the survey (48%) do not have children younger than 10.

**Table 3. Measurement Model**

<b>Constructs</b>	<b>Items</b>	<b>Factor Loadings</b>	<b>Cronbach's Alpha</b>	<b>CR</b>	<b>AVE</b>
Perceived Workplace Support	PWS1	0.837	.866	0.885	0.608
	PWS2	0.795			
	PWS3	0.676			
	PWS4	0.808			
	PWS5	0.775			
Perceived Supervisory Support	PSUS1	0.900	.848	0.848	0.586
	PSUS2	0.744			
	PSUS3	0.616			
	PSUS4	0.775			
Perceived Family Support	PFS1	0.847	0.907	0.908	0.664
	PFS2	0.814			
	PFS3	0.712			
	PFS4	0.804			
	PFS5	0.888			
Work-Life Balance	WLB1	0.754	.855	0.854	0.540
	WLB2	0.693			
	WLB3	0.783			
	WLB4	0.700			
	WLB5	0.743			

We assess the values of item reliability, convergent validity, and discriminating validity to confirm the adequacy of the measurement model of this study (Hulland, 1999). Social researchers commonly use Cronbach's alpha to measure internal consistency and reliability, therefore prior literature prefers CR. as an alternate, and the AVE of each construct is analyzed to determine convergent validity (Bagozzi & Yi, 1988; Hair et al., 2012; Wong, 2013). The recommended value of "Cronbach's alpha" is 0.70, while exploratory research believes 0.4 or higher is acceptable (Hair Joseph et al., 1995; Hulland, 1999). The CR of the variables should be 0.7 or higher, however in exploratory research, 0.6 or higher is fine, and the AVE should be 0.5 or higher (Bagozzi & Yi, 1988). Table 3 displays the study's loadings, Cronbach's alpha, CR and AVE. All Cronbach's alpha values exceed 0.70. After confirming that its CR. and AVE values were above the recommended value, we considered it. Moreover, the factor loadings of maximum items are greater than 0.70. Table 3 further demonstrates that the ranges of acquired CR (0.848 to 0.908) and AVE (0.540 to 0.664) are within acceptable limits, indicating strong internal consistency and convergent validity. Therefore, it can be assured that there is sufficient reliability of all latent variables in the model.

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**Table 4. Correlation Matrix and Square Root of the AVE**

Constructs	PWS	PSUS	PFS	WLB
PWS	<b>.682</b>			
PSUS	.585	<b>.543</b>		
PFS	.599	.443	<b>.789</b>	
WLB	.543	.321	.682	<b>.735</b>

**Note:** PWS: perceived workplace support, PSUS: Perceived Supervisory Support, PFS: perceived family support, WLB: work-life balance.

Validation of convergent validity was performed by analyzing the AVE. All constructs, except PSUS, were found to have an AVE greater than .5, showing that they met the convergent validity criteria (Fornell & Larcker, 1981; Henseler et al., 2009).

**Table 5. Structural Model**

Hypotheses	Path	B	t-statistics	p-value	Comments
H1	PWS - WLB	.298	3.601	.001	Accepted
H2	PSUS - WLB	.103	1.364	.177	Rejected
H3	PFS - WLB	.403	5.567	.000	Accepted

**Note:** Significant at  $p < 0.05$  PWS: perceived workplace support, PSUS: Perceived Supervisory Support, PFS: perceived family support, WLB: work-life balance.

The structural model was applied to determine the relationship between the constructs in the research model. The hypothesis was tested at a significant level of  $p < .05$  (Efron & Tibshirani, 1994). The relationship between exogenous and endogenous variables was calculated by t-statistics and path coefficient B. The PLS results for the structural model are presented in Table 7. The results indicate that the relationships between PWS and WLB ( $t = 3.601$ ,  $B = .298$ ,  $p < .05$ ), PFS and WLB ( $t = 5.567$ ,  $B = .403$ ,  $p < .05$ ) were significant, but PSUS and WLB ( $t = 1.364$ ,  $B = .103$ ,  $p > .05$ ), were not significant. Thus, the hypotheses (H1, H3) were supported in this study, while H2 was rejected.

**Table 6. Predictive Relevance**

	R-square	R-square adjusted
WLB0	0.882	0.877

Table 6 depicts that the  $R^2$  and adjusted  $R^2$  for WLB were 0.882 and 0.877, respectively, indicating the explanatory power of this model.

### 5. Discussion

Based on the COR theory, we examine how the workplace, supervisory, and family social supports affect WLB among Bangladeshi women working in banking, especially in Barishal City. The results show that perceived social support is good for WLB. This research could help

find other ways for banking businesses to help their female employees get a meaningful WLB, which could improve the results of the business as a whole.

The strong effect of PWS (H1) on WLB shows how important it is to have PWS at work to improve work-life balance. It is possible because PWS gives its employees high-level strength by giving them a family-friendly workplace. Since PWS makes it less likely that roles in one domain will interfere with those in another (Darabdhara et al., 2015), it makes people more focused, dedicated and determined to meet their many commitments. (Russo et al., 2015) say that PWS gives workers independence and control over their job tasks and lets them use resources made in one area to do tasks in another.

Also, the data show how important PFS is in shaping WLB H3, which shows that the family is an important domain of support for WLB. It is important because female bankers saw it as having a good balance. Also, it makes it easier for workers to deal with stress and stay motivated and reduces role strain. PFS also lets workers work harder and focus more on their job in a stress-free and private way since their spouse and other family members help with household tasks. Further, it allows them to move and use family resources at work (Ferguson et al., 2012; Nicklin & McNall, 2013) and share their outside responsibilities. So, family support is important for the health and well-being of the public and for the family institution to work well (Achour et al., 2017).

However, PSUS (H2) did not play a big part in WLB. This backs up what (Kossek et al., 2014) found, but it goes against what (Achour et al., 2017) found when they looked into the link between PSUS and WLB in Malaysian women and found that it was a good one. From our perspective, supervisors' attitudes may need to be more supportive, and they might not focus on the well-being of the workers.

### **5.1. Theoretical Contributions**

Our study is to examine how different perceived social support sources affect WLB for women in the banking business in a developing country like Bangladesh, specifically in Barishal. In this way, it also helps researchers learn more about social support and WLB in general. Prior research on WLB was mostly done in developed and Western places, and only one or two PSS sources were looked at (Kossek & Lautsch, 2018). Only some studies have looked at the link between social support and good outcomes (e.g., work-life balance). Even though WLB is one of the biggest problems women face today, previous studies have yet to examine how having more than one PSS affects a woman's work-life balance. COR says that women's WLB is better when they have social support, which highlights the importance of social support for women, which was missing from previous research (Singh et al., 2018). (Verma et al., 2018) suggest that family support is good for women's psychological well-being and increases WLB, which aligns with our work validating the links between PSS and WLB. (Verma et al., 2018) asked us to look into the role of social support among women in the service sector, which is what we did when we looked at social support. So, our study helps by filling in a gap in the research that has already been done and by adding to and improving the research on social support and WLB.

### 5.2. Practical Implications

Our research has many implications for managers, supervisors, and people who work in the banking industry's human resource management (HRM), especially regarding how WLB is handled among women in these fields. First, our research showed that all social support sources (such as PWS, and PFS) could improve women's work-life balance, except coworker instrumental support. Because PSS is so important, it is seen as a valuable resource in the workplace. Given how important social support is, firms and managers should make it a top priority to give their employees more social support. Banking companies should think about creating a family-friendly work environment at all levels of management, with a focus on flexibility, cooperation, and tolerance from supervisors and coworkers, which will help employees get a wide range of services. The resources that come from these kinds of help can be protected by making rules and exercises that encourage people to get explicit help from each other (Danelljan et al.). Experts in HRM must teach and train employees to protect resources when juggling multiple commitments and to bring in as many resources as possible through support and WLBP.

Second, the results suggest that firms create a good work environment by putting PSS and WLB in their mission and value statements which changes how employees, supervisors, and managers think about WLB in particular sociocultural contexts. Third, this study has a unique effect on management and HRD professionals in that it shows them how they can use WLB as a key part of HRS development interventions for supervisors and employees. Darabdhara et al. (2015) noted that experts in human resource management play a key role in helping employees balance their work and personal lives. Lastly, our findings have important implications for the professional communities of bankers, which play a key role in giving women in banking careers more power and helping them move up in their careers. A lot of professional bankers are in high-level positions and make important decisions. They may be able to start, direct, or support specific steps to meet the needs of work-life balance and show more appreciation for women's contributions.

### 5.3. Limitations and Future Research Directions

This study does have some drawbacks. First, we used cross-sectional data, which can lead to response bias and makes it hard to come to a clear conclusion. We had budget limitations and time constraints. Since the sample of our study was only from Barishal city is a small area, it was hard to use the results as a whole. Second, the research only used quantitative methods, which made it impossible to look at the things being studied in depth. In our study, we only focused on women in the banking sector, but in the future, women in other sectors like university and corporate sectors can be examined. Some additional support variables along with mediating effect can also be taken into consideration for sure.

### 6. Conclusion

This study looks at PSS sources' effect on WLB for women in banking sectors in Bangladesh, especially in Barishal city. Women's WLB is better when they have social support, which shows

how important it is. The findings also prove that COR theory is an excellent way to explain WLB in Bangladeshi women, even though the social support structures and legal protections differ from those in developed and western countries, where both are well-established. Also, the Bangladeshi context shows that the focus is on resources, a central idea of the COR theory of social support sources. Findings address the problems with previous studies by clearly defining multiple PSS, their different roles, and how important they are to employees' WLB. More specifically, PWS and PFS are better at protecting and getting relatively more resources for WLB to work. Our study has important implications for organizations' operations, aiming to understand and promote women's work-life balance (WLB). It would be a good idea for future works to look into more of WLB's roots.

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### Appendix 1.

#### Measurement Items

Variables	Measurement Items	Sources
Perceived Supervisory Support	PSUS01: My supervisor is extremely worried about my well-being. PSUS02: My boss would never intentionally harm me. PSUS03: My supervisor is really considerate of my priorities. PSUS04: My supervisor has a strong sense of fairness.	(King, 1995), (Zimet et al., 1988)
Perceived Family Support	PFS01: When I am get bored at work my family shows that they understand how I am feeling. PFS02: My family members help me to get things done at home. PFS03: My family members are interested in my job. PFS04: After talking with my family about problems at work, I feel better. PFS05: My family members often provide a	(Adams et al., 1996)

	different way of looking at my work-related problems.	
Perceived Workplace Support	<p>PWS01: My company cares about how happy I am at work in general.</p> <p>PWS02: My organization strongly considers my values and goals at workplace.</p> <p>PWS03: My organization really cares about my work life balance issue.</p> <p>PWS04: My company makes my job enjoyable.</p>	(Eisenberger et al., 1986)
Work Life Balance	<p>WLB01: I'm able to spend the right amount of time at work and on other things.</p> <p>WLB02: I get opportunity to modify my duties when I required.</p> <p>WLB03: My colleagues are respectful of effort to balance work/home.</p> <p>WLB04: I have the ability to balance between professional and personal time.</p> <p>WLB05: Overall, I think my work and other things I do are a healthy combination.</p>	(Brough & Kalliath, 2009)



# Mobile Shopping Service Quality Dimensions and its Effects on Customer Trust and Loyalty

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## Abstract

This study intends to explore the key mobile shopping (m-shopping) service quality dimensions and its impact over customer trust and loyalty. Significant research study was done on identifying mobile shopping service quality dimensions and customer satisfaction but we conducted research focusing on the impacts of mobile shopping (m-shopping) service quality dimensions on customer trust and loyalty. For accomplishing this study, we collected the primary data from Patuakhali Science and Technology University students. Both online and offline method of convenience data collection were followed for this purpose. Data analysis was conducted with structural equation modeling (SEM) through PLS. The study identifies major m-shopping service quality dimensions: responsiveness, personalization, ease of use, aesthetics and perceived risk from previous research. The result of the Structural Equation modeling (SEM) displays that the five m-shopping service quality dimensions (responsiveness, personalization, ease of use, aesthetics) remarkably influence customer loyalty and trust directly or indirectly but one dimension (perceived risk) does not significantly impact on customer loyalty and trust. Most of the independent variables positively influence customer loyalty and trust.

**Keywords:** Mobile Shopping service quality, Trust, Customer loyalty.

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## I. Introduction:

The concept of mobile shopping denotes practice of using a mobile device to make purchases (Guptaa & Arora, 2017). The number of people who are mobile shoppers has significantly increased over the past couple of years (Thakur, (2018)). Since the growing number of individuals who are mobile shoppers, the research on the factors that influence their adoption has been conducted (Example: Groß M., 2018; Gupta & Arora, 2017). The objective of this study intends to explore the key mobile shopping (m-shopping) service quality dimensions and its impact over customer trust and loyalty. The main paradigms related to the development and implementation of service through mobile shopping are the perceptions of customers about the service and their loyalty. These two factors are not examined in the literature. Despite the increasing number of people who are mobile shoppers, the research on the issues that stimulates their adoption has not been conducted properly (Sarkar S. C., 2020; Thakur, 2018). (Shang &

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Wu , 2017) stated that, loyal customers generally prefer to buy from certain company to others than they are to retain an existing one. Also, acquiring a new customer can be very costly. Additionally, it might be quite expensive to acquire a new client compared to keeping a current one (Gao et al., 2015; Kim et al., 2009). The literature regarding marketing and service management has long addressed the issue of increasing client loyalty. In particular, few past research have focused on the connections amid loyalty of customer and its core perceptions in the contexts of offline and online commerce(Biscaia et al., 2017;Jiang et al., 2016; Kim et al., 2011; Kim et al., 2009). According to these research, customer trust and quality of service both have a significant influence in increasing customer loyalty (Jiang et al., 2016); and online retailing(Jiang et al., 2016); (Kim et al., 2011; Kim K. K., 2019). Mobile shopping has the power to fundamentally alter how consumers consume products and how retailers may respond to the emerging market (Marriotta & Williams, 2018; San-Martín et al., 2015). The ultimate service receivers get advanced benefits from M-shopping. In the current study, M-shopping is regarded as an innovative information system that is focused on the customer opportunity that retailers give and facilitates shopping anytime, anywhere (Guptaa & Arora, 2017).

In two respects, our study will have a noteworthy contribution on existing body of related works. Firstly, it will have contribution to the expanding study of M-Shopping research by identifying essential service quality aspects, including responsiveness, personalization, usability, aesthetics, and perceived risk. Secondly, this study offers proof of relationships between crucial aspects of M-Shopping service quality, consumer loyalty after adoption, and consumer trust in m-retailers.

## **II. Materials and Method:**

### **2.1. Mobile shopping:**

Mobile shopping has become a very popular in recent years as more and more online business are being established. (Kim et al., 2015) described mobile shopping as internet aided purchasing process by handset phone. It also defined by (Hung et al., 2012) as famous medium for ordering, buying and paying through mobile phone. It replaces the old method of buying and selling system by mobile phone-aided shopping (Yang K. , 2010)Moreover, this system allows consumers to order and pay by mobile phone from any place at any time (Wu & Wang, 2006). Likewise, (Lu & Su, 2009) stated that this system benefits consumers by solving time and place issues while purchasing product. It also provides advantage of less cost shopping as no place or time is required for transactions (Aldas-Manzano, 2019). In simple word it is defined as internet-aided shopping facilities done through handsets (Ko, 2009). (Ko et al., 2019).

### **2.2. Service quality dimensions:**

Quality of Customer service is the overall opinion or attitude of a customer regarding the fineness or preeminence of a facility (Parasuraman et al., (1988). We have found from the previous research that, satisfaction of consumer is certainly correlated with service quality (Gao et al., 2015)and customer buyback intention(Chiu et al., 2014; Yang et al., 2017)Frequent studies tried to recognize influential effects of customer service quality that have the most impacts on ratings of overall quality(Jiang et al., 2016; Lu & Su, 2009).The SERVQUAL

(Parasuraman et al., 1988) consists of twenty-two elements for surveying to find the quality of service of any product. It is well-known and significant tool for measuring service quality in traditional brick-and-mortar businesses. It has been used by several researchers in a variety of service industries (Jiang et al., 2016; Lu & Su, 2009). Zeithaml et al., 2002 said that electronic service (e-service) is the facilities exchanging e-commerce service through a website. SERVQUAL dimensions has been separated into the E-S-QUAL and E-QUAL scales where the beginning four stages seemed to be as core service scale and final three stage seemed as recovery-oriented service scale (Parasuraman et al., 2005). Furthermore, the five most important aspects of website appearance, dependability, receptiveness, trust, and customization that affect customers' impressions of the quality of e-services (Lee & Lin, 2005).

### **2.3. M-shopping service quality dimensions:**

Numerous studies on mobile commerce (m-commerce) have focused using the SERVQUAL tool to evaluate the caliber of service of the customer that involves exchange of communication (Huang et al., 2015). The SERVQUAL instrument has been used extensively in studies on mobile enabled commerce (m-commerce) for rating the effectiveness of customer service, including banking through mobile (Nisha, 2016), m-shopping (Huang et al., 2015; Lin et al., 2012). For m-commerce justification SERVQUAL model dimensions should be modified (Jiang et al., 2016). Some studies on the service quality of m-commerce have frequently recognized the personalization construct as a significant service quality dimension. The construct's scale items in these studies were mostly adopted as of the empathy dimension of SERVQUAL's (Kim et al., 2015). "Responsiveness" was found as the most used variable of service quality such as E-SERVQUAL (Zeithaml et al., 2002), M-S SERVQUAL (Huanga et al., 2015). The four M-SQUAL aspects of responsiveness, efficiency, fulfillment, and contact give a beneficial influence on overall m-shopping services quality. As a result of its ability to convince customers that an m-retailer is trustworthy, responsiveness has also been recognized as a trust cue (Kim et al., 2015; Yeh & Li, 2009). It was identified the five most important aspects: website design, dependability, responsiveness, trust, and personalization that affect customers' impressions of the quality of e-services (Yeh & Li, 2009).

Apps for mobile commerce are essentially a particular class of information system. According to one's demand and necessity one can buy specific product from mobile apps which also give m-retailers and customers more opportunity for contact (Hew et al., 2015; Shang & Wu, 2017). The ease of use construct measures how easily an m-shopper can engage with the retailers of mobile apps and complete their shopping without exerting more physical labor (Davis et al., 1989; Hubert, 2017; Ko et al., 2019). The overall appearance or enjoyable environment that a mobile app conveys to users by utilizing inputs is referred to as aesthetics (Fan et al., 2013). This concept specifically addresses different hazards that arise when consumers buy on their mobile devices, including those related to money, confidentiality, performance of product, mental well-being, bodily safety, time efficiency (Hubert, 2017; Xu, et al., 2015).

**2.4. Customer trust and loyalty:**

When customers have faith on seller’s reliability and honesty, they can trust on sellers(Morgan & Hunt, 1994).Based on the previous studies it is found that customers trust helps to make long-term relationship with the specific seller(Kim et al., (2009).When customers become confident to get utility of the product from previous retailer using the same way and request other customer to purchase from the seller, they are loyal customer and this behavior is called customer loyalty(Shang & Wu , 2017), (Thakur , (2018)). For making business profitable and sustainable, building customer loyalty is a must (Jiang et al., 2016; Shang & Wu, 2017). Loyal customer can be identified with two characteristics: repurchase motive refer other to make purchase motive(Yang et al., 2017).When a customer says positive things regarding a product and request other to purchase that product is called positive-word-of mouth(Xu et al., 2015; Thakur, 2018)).Customer loyalty certainly increase the positive-word-of mouth(San-Martín et al., 2015).

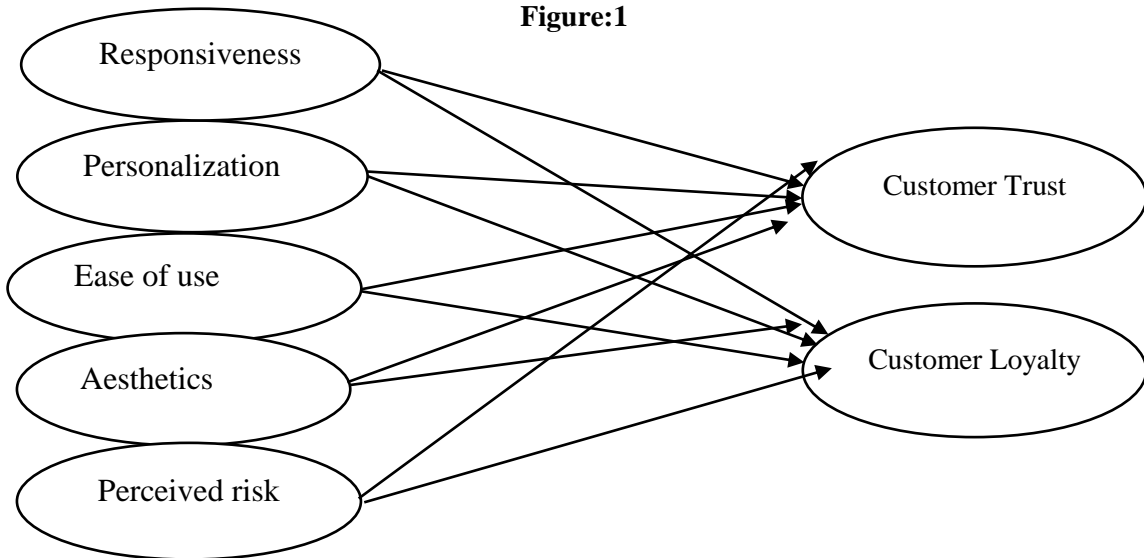
From the above discussion it can be hypothesizing that,

- H1:** *Responsiveness, Personalization, have significant influence on customer trust and loyalty towards mobile shopping.*
- H2:** *Ease of use, Aesthetics, Perceived risk have significant influence on customer trust and loyalty towards mobile shopping.*
- H3:** *Customer loyalty mediates the relationship among Responsiveness, Personalization, Ease of use, Aesthetics, Perceived risk towards mobile shopping.*

**Theoretical framework:**

The framework is created to justify the developed hypothesis based on literature review:

**Figure:1**



**2.5. Sample size:**

A non-probability sampling technique is used for this study. We know that individuals are selected based on non-random criteria, and not every individual has a chance of being included



for this study. For collecting data a designed questionnaire was used. The questionnaire has been given to customers. The sample size is 400. For money and time constraints, 400 sample were surveyed. Among them, 380 sample were used for analysis as the other were faulty data. The 380 surveys fulfill the minimum criteria for recommended sample size for analysis with SEM (Kline, 2011).

### **2.6. Data Analytical Techniques and Tools Used:**

Analysis of data tools include quantitative analysis, qualitative analysis, text analysis, statistical analysis. Statistical analysis technique has applied for this research which involves data collection, interpretation and validation. Surveys and observational data are used in statistical analysis. We used different tools to perform statistical data analysis such as Smart PLS and Microsoft Excel and so on (Fagerstrøm et al., 2016).

### **2.7. Data Collection Method:**

Survey data have been brought from customers via a Google doc that have been distributed via e-mail and social media and so on. The questionnaire link has been sent through Facebook chat and message box in different University's friends, senior and junior and Hardcopy of questionnaire were sent among PSTU Students for collecting data. Secondary data has been gathered from a variety of sources, including past studies, publications, and articles connected to the title. The primary source of data was questionnaire. The questionnaire has been prepared and sent to some mobile shopping experienced users. The format of the questionnaire is structured. The questionnaire has been sent to segmented respondents. The questionnaire aims to collect real information from the customers.

We developed self-administered questionnaires to collect data, and we developed the questionnaire to meet the research needs. Section-1 contains the respondent's demographic information. Section-2 comprises questions about the elements that influences consumer loyalty and trust and the overall degree of SERVQUAL dimension with M-shopping. We requested the respondents to give mark according to their degree of agreement and satisfaction using a category scale and Likert type scale questions. Where 1 denotes strongly Disagree, 2 denotes disagree, 3 as neither agree nor disagree (neutral), 4 as agree and finally 5 denotes strongly agree or again 1 represents very dissatisfied, 2 represents dissatisfied, 3-5 as neither satisfied nor dissatisfied (neutral), satisfied and very satisfied.

## **III. Result & Discussion:**

### **Demographic profile of respondents:**

The focused population size for our research is the customer in PSTU pupils and others university students who purchase products from online shopping site. A total of 380 samples were gathered from the participants aged 20 to over who have had prior internet purchasing experience by using online Shopping Platform.

## Mobile Shopping Service Quality Dimensions and its Effects on Customer Trust and Loyalty

Table 01: Demographic Profile of the Respondents

Particulars	Category	Frequency (N=380)	Percent (%)
<b>Gender</b>	Male	187	49.21
	Female	193	50.79
<b>Age</b>	20-24	169	44.48
	24-34	138	36.32
	35 and above	73	19.20
<b>Education</b>	Below HSC	5	1.32
	HSC	49	12.90
	Graduate	196	51.40
	Post graduate	130	34.38
<b>Mobile shopping history</b>	Less than 1 year	56	14.70
	1-2 Years	96	25.20
	3-4 Years	82	21.50
	5-6 Years	85	22.30
	Over 6 years	61	16.30
<b>Weekly (mean) usage patterns of seller's mobile apps for purchase</b>	1-2 times	177	47.70
	3-4 times	105	26.60
	5 times and over	98	25.70

Here, N is the number of respondent and valid sample size (380) from where male represents 49.21% and female 50.79% that indicates the balance of gender distribution in this survey. It is seen that the age group of shoppers is from 20 to 35 and above where the maximum shoppers from age group 24-35 (36.32%). Education level is categorized from below SSC to post graduate and the most of the shoppers are graduate and they denote 51.4% of total shoppers of our respondents. This table also shows that mobile shopping history occupied 25.2% of the shoppers from 1-3 years. While the mobile shopping by usage mobile apps is 47.7% of the users 1-2 times and 25.7% for 5 times and over. It indicates that mobile shopping is done by mostly mobile apps.

### 3.1. Measurement model:

It is used to justify the association between the construct variables and the (such as: Responsiveness, Personalization, Ease of use, Aesthetics, Perceived risk, Trust, Customer loyalty) and the indicator variables (such as R1, R2, R3 and so on) given presented in figure 2.

**Alpha:** It is mostly used for estimating reliability. Cronbach's coefficient alpha denotes how much variables are associated with one another. We generated the value of it by using PLS-SEM. Cronbach's alpha is calculated for measuring reliability. We found the Cronbach's alpha ranging from .7-.9 except one value.

**Factor Loading:** For justifying measurement model, we removed the low factor loadings (< 0.60) indicators (Gefen & Straub, 2005). These items (R3, A2, P2, EOU3, PR2, T1, T2, T3, CL3, CI4, CI5) were not considered for analysis as of low factor loading. Factor loading means in the simple terms how well these particular items represent underlying construct.

**Composite Reliability:** It acts as alternative to Cronbach's Alpha. Accepted value of composite reliability is greater or equal 0.70 (Ramayah et al., 2018). Table 2 denotes the value of it.

**Construct Validity:** Construct Validity (Bagozzi et al., 1991) is established to assess two categories of validity that included convergent and Discriminant validity.

**Convergent Validity:** It is the measurement of Average Variance Extracted (AVE) and value 50% or more is accepted (Ramayah et al., 2018). It is shown in table 2. It is shown that AVE value of all constructs are larger than 0.5, it confirms that they are in the range of accepted standard of convergent validity (Barclay & JR., 1995; Fornell & Larcker, 1981; (Henseler et al., 2009). Among statements, 5 Statement has more than 0.5 AVE value except but two statement has less than 0.5 but they have strong composite reliability value. That is why they are also taken under consideration for analysis presented below in Table 2.

**Table 2: Reliability analysis, Factor analysis and Discriminant validity analysis**

Variable	Statement	Factor loading	Alpha	Average Variance Extracted (AVE)	Composite Reliability (CR)
<b>Responsiveness</b>	R1: I get prompt service from M-Retailer.	0.795	0.392	0.448	0.705
	R2: I get prompt response from M-Retailer.	0.633			
	R3: I get help, when necessary, from M-Retailer.	0.578			
<b>Personalization</b>	P1: I receive personal attention from M-Retailer.	0.766	0.341	0.73	0.69
	P2: I am the interest point of M-Retailer.	0.541			
	P3: I get my specific product as M-Retailer knows my personal needs.	0.569			
<b>Ease of Use</b>	EOU1: I found the M-Retailer app easy.	0.681	0.378	0.728	0.68
	EOU2: I found the app of M-Retailer as friendly to use.	0.780			
	EOU3: I hassle freely use the app of M-Retailer.	0.528			
	A1: The apps design attracts me.	0.783	0.53	0.507	0.751
	A2: I think, the app of M-Retailer was designed by professional.	0.519			

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<b>Aesthetics</b>	A3: I felt appealing using this app.	0.800			
<b>Perceived Risk</b>	PR1: I fell privacy loss on M-Retailer app.	0.675	0.465	0.376	0.702
	PR2: Over charging is found here	0.541			
	PR3: I lose my money for weak purchase decision over M-Retailer app	0.603			
	PR4: I don't get the expected product/service from M-Retailer app.	0.704			
<b>Trust</b>	T1:M-Retailer app is dependable.	0.578	0.387	0.584	0.646
	T2: It is capable to meet needs.	0.460			
	T3: I found M-Retailer honest.	0.436			
	T4: I get well response by M-Retailer.	0.631			
	T5: M-Retailer app is trustworthy.	0.680			
<b>Customer loyalty</b>	CL1: I shall repurchase from M-Retailer.	0.658	0.586	0.797	0.733
	CL2: I rank M-Retailer 1 <sup>st</sup> position for my purchase.	0.605			
	CL3: I rarely think of preferring another M-Retailer for purchase.	0.591			
	CL4: I found M-Retailer is the best in business.				
	CL5: I refer my friends to purchase by M-Retailer.	0.310			
	CL6: I used positive-word-of mouth for M-Retailer.	0.509			
	CL7: I allowed other to make purchase with M-Retailer with my device.	0.663			

**Discriminant Validity:**

Henseler et al., 2015 instructed to justify for the discriminant validity and the most traditional threshold values of HTMT ratio is lower or equal to 0.90.

Table: 3 represents that, all HTMT values are lower than the threshold value of 0.90. Here, relationship among all variables is less than 0.90 or equal. So, HTMT value are good for analysis and their validity are acceptable.

**Table 3: Discriminant Validity using HTMT**

	<b>Aesthetics</b>	<b>Customer Loyalty</b>	<b>Ease of use</b>	<b>Perceived Risk</b>	<b>Personalization</b>	<b>Responsiveness</b>	<b>Trust</b>
<b>Aesthetics</b>							
<b>Customer Loyalty</b>	<b>0.510</b>						
<b>Ease of use</b>	0.580	<b>0.528</b>					
<b>Perceived Risk</b>	0.594	0.849	<b>0.567</b>				
<b>Personalization</b>	0.683	0.900	0.786	<b>0.887</b>			
<b>Responsiveness</b>	0.538	0.632	0.9808	0.821	<b>0.807</b>		
<b>Trust</b>	0.690	0.665	0.686	0.885	0.781	<b>0.631</b>	

**Correlations:** Correlation is a reciprocal relationship between two or more variables. Dependent Variables that correlating the state of being co-related. Here, will present why variable are significant or not by 5% level of significance. Customer Loyalty (CL), Trust (T). Independent variable: Responsiveness (R), Personalization (P), Ease of use (EOU), Aesthetics(A), Perceived risk (PR).

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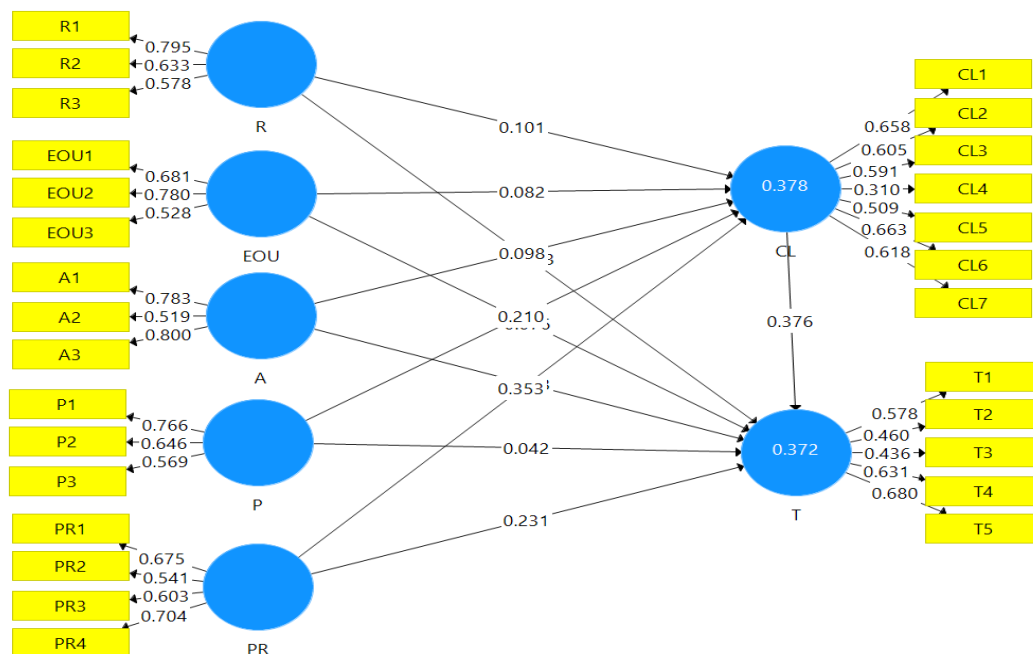
**Table 4: Correlations**

	Aesthetics	Customer Loyalty	Ease of use	Perceived Risk	Personalization	Responsiveness	Trust
Aesthetics Correlation Sig(2-tailed) N		0.102 0.000 380					0.157 0.000 380
Customer Loyalty Correlation Sig(2-tailed) N							0.332 0.000 380
Ease of use Correlation Sig(2-tailed) N		0.073 0.000 380					0.080 0.000 380
Perceived Risk Correlation InSig(2-tailed) N		0.327 .124 380					0.210 .090 380
Personalization Correlation Sig(2-tailed) N		0.219 0.000 380					0.055 0.000 380
Responsiveness Correlation Sig(2-tailed) N		0.088 0.000 380					0.125 0.000 380
Trust Correlation Sig(2-tailed) N		0.093 0.000 380					380

Correlation is seenas important at the 0.01 level(2-tailed)

Correlation is significant at the 0.05 level(2-tailed)

Figure 2



**Interpretation:**

It is shown that the association of Aesthetics and Customer Loyalty is constructive as ( $p=0.000 \leq 0.05$ ). At the same time the association of Aesthetics and Customer Trust is also constructive as ( $p=0.000 \leq 0.05$ ) and same as association for Ease of use and Customer Loyalty ( $p=0.000 \leq 0.05$ ). But the connotation between Perceived Risk and Customer Loyalty and Perceived Risk and Customer trust is statistically insignificant as the both has  $p=0.124 \geq 0.05$ . The all-other associations like Personalization and Customer Loyalty, Personalization and Customer trust, Responsiveness and Customer loyalty, Responsiveness and Customer trust have positive relation and statistically significant ( $p=0.000 \leq 0.05$ ).

**3.2. Structural model:**

It demonstrates the associations (paths) among the depended and independent variables proposed by study model.

H1: Responsiveness, Personalization have significant influence on customer loyalty and trust towards mobile shopping

**Table 5: Testing of Hypothesis and Path-coefficient**

Relationships		Beta coefficient	Tstatistics	P value	Decision
Responsiveness	-> Customer Loyalty and Trust	0.296	0.473	0.000	Supported
Personalization	-> Customer Loyalty and Trust	0.426	3.716	0.003	Supported

a. Depended variable: Customer Loyalty and Trust

b. Independent Variable: Responsiveness and Personalization

**Interpretation:**

The path analysis results presented in Table 5 confirm the hypothesis that responsiveness, personalization has statistically significant influence on customer loyalty and trust towards M-shopping(H1) responsiveness ( $\beta= 0.296$ ,  $t= 0.473$ ,  $p=0.000$ ), personalization ( $\beta= 0.426$ ,  $t= 3.716$ ,  $p=0.003$ ) that the responsiveness and personalization towards m-shopping significantly influenced on customer loyalty and trust. However, found that H1 is significantly related to mobile shopping at 5% level of significance.

So, Responsiveness, Personalization have positively influence on customer loyalty and trust towards mobile shopping.

H2: Ease of use, Aesthetics, Perceived risk have significant influence on customer loyalty and trust towards mobile shopping.

**Table 6 : Path Coefficients and Hypothesis testing**

Relationships		Beta coefficient	T statistics	P value	Decision
Ease of use ->	Customer Loyalty and Trust	0.296	7.073	0.000	Supported
Aesthetics->	Customer Loyalty and Trust	0.326	4.019	0.000	Supported
Perceived risk->	Customer loyalty and trust	0.988	11.65	0.980	Non-supported

a. Depended variable: Customer Loyalty and Trust

b. Independent Variable: Ease of use, Aesthetics, Perceived risk

**Interpretation:**

The path analysis results presented in Table 6 confirm the hypothesis that ease of use, aesthetics, perceived risk has statistically momentous influence on customer loyalty and trust towards M-shopping(H2) ease of use ( $\beta= 0.296$ ,  $t= 7.073$ ,  $p=0.000$ ) aesthetics ( $\beta= 0.326$ ,  $t=$



4.019,  $p=0.000$ ), perceived risk ( $\beta= 0.426$ ,  $t= 2.654$ ,  $p=0.980$ ) that the ease of use and aesthetics towards m-shopping significantly influenced on customer loyalty and trust but conversely found that perceived risk insignificantly influences on customer loyalty and trust. However, indicated that perceived risk is an insignificant predictor of mobile shopping towards customer loyalty and trust. Finally found that without perceived risk H2 is supported.

So, ease of use, Aesthetics and Perceived risk have positively influence on customer loyalty and trust towards mobile shopping.

Table 7

Perceived Risk - >Customer loyalty	0.373	4.748	0.373	4.748	PR -> EOU -> A -> P -> CL	0.014	1.807	0.001
Responsiveness - >Customer loyalty	0.19	2.479	0.103	1.297	R->P-> EOU- >A -> CL	0.003	0.698	0.000

Here, R=responsiveness, P=personalization, EOU=Ease of use, A=aesthetics, PR=perceived risk CL=customer loyalty

#### IV. Conclusion:

This study intends to find primary dimensions of m-shopping service quality and examine their impacts on customer trust and loyalty. It is found from the analysis that among the five m-shopping dimensions, four dimensions significantly impact on customer loyalty actively or passively and one dimension is not. According to objectives, all hypothesizes positively significant or accepted in this study.

From this study it is clear that the M-Retailer should pay more focus on customer trust and loyalty as these two factors impacts more to make decision on intention to shop from M-Retailer. Moreover, all the primary dimensions of mobile shopping are notable for creating trust of customers. Privacy, monetary security is the key issue for payment method of mobile shopping. So, M-Retailers should pay more attention to make payment option more secured for mobile shoppers.

This study also helps the future research to focus on customer loyalty and trust in mobile shopping. Our purpose was to measuring the impact of customer loyalty and trust upon mobile shopping service quality dimensions. And for this purpose, SERVQUAL model is applied with two new factors named customer trust and loyalty. For our analysis we see that all the proposed hypothesis were supported.

Though this study will help M-Retailer in their future decision-making process of business, it has some limitations also. Firstly, the analysis was done with only 380 data. Future researches may take big amount of data for analysis. Secondly, the data were collected from only one type of correspondent (PSTU students), future researchers may consider the whole region or country for data collection. Finally, future research may conduct with other mediating factor to identify the impacts upon the intention to use mobile shopping.

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# How Does Organizational Culture Impact Employee Job Performance? A structural equation modeling approach

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## Abstract

This study aims to investigate how organizational culture impacts employee job performance. In this context, we develop a research model that takes into account the four components of organizational culture: employee participation, bureaucratic culture, risk-taking and innovation, and reward systems. We used the structural equation model to analyze the data collected through a survey of 324 respondents who are employees of different private organizations in Bangladesh. The empirical study shows that employee participation, bureaucratic culture, risk-taking and innovation, and reward systems have significant and positive impacts on employee job performance. This study also indicates that risk-taking and innovation is the most important factor in predicting employee job performance. This research provides valuable insights into the domain of organizational culture and employee work performance, specifically within the setting of Bangladesh, hence offering significant implications for both theoretical and practical applications.

**Keywords:** Organizational culture, Employee job performance, Structural equation model, Bangladesh.

## 1. Introduction

Culture is often described as a fusion of values, beliefs, ideas, and principles that provide a framework for individuals to follow. When education is imparted using a systematic distribution of resources, it forms the bedrock of cultural formation. A strong organizational culture acts as a cognitive system that enhances critical thinking and decision-making skills. By adhering to sound corporate practices, a plethora of beliefs, assumptions, and values merge to create an intricate tapestry of diverse cultural levels. The glue that holds together the normative standards of organizational culture is crucial in promoting overall managerial effectiveness. The concept of effective organizational culture enables companies to make informed decisions and improves their overall performance. Managing culture effectively involves acknowledging the differences

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between domestic and foreign cultures. An organizational culture that fosters open communication among staff members helps to shape and reinforce the attitudes, customs, and beliefs that form the organizational culture.

Corporate culture serves as a guideline for employees on how things should be done. The word "culture" is a tool used to express unique patterns of behavior. Before the 1980s, culture was seen as a significant influence on organizational behavior. Companies are more interested in the cultural aspects that have the greatest impact than in other components of organizational behavior. It is believed that an organization's culture is responsible for its success. Numerous business magazines and papers have emphasized the importance of culture in organizational success. Managers are advised to embrace their organizational culture to aid in the growth and development of the organization.

Several researchers have described organizational culture and employee performance from other wider dimensions in other countries such as Nigeria, India, and the USA. Sapta, Muafi, & Setini (2021) investigated the role of technology, organizational culture, and job satisfaction in improving employee performance during the Covid-19 pandemic. Heri Erlangga, S.Sos, & M.Pd, (2021) assessed the influence of motivation, ability, organizational culture, and work environment on teachers' performance. Achieving sustainable job performance of employees through transformational leadership and employee participation was investigated through research work conducted by Nazari, Fallahnejad, & Fard (2022). Zhang & Aumeboonsuke (2022) analyzed the relationship between technological innovation, risk-taking, and firm performance. Pang & Lu (2018) examined the relationship between organizational motivation, employee job satisfaction, and organizational performance. The cultural factors influencing employee participation, bureaucratic, risk taking and innovation, and reward systems collectively were not analyzed in the private sector of developing countries like Bangladesh. So, this study intends to bridge this available gap by adopting these variables collectively including employee participation, bureaucratic culture, risk and taking innovation, and reward system as a dimension of organizational culture to investigate the job performance of employees in private sectors in Bangladesh. The study will contribute to the current literature by presenting empirical evidence about the cultural factors influencing job performance in the public sector. The main objective of this study is to determine the effect of organizational culture on employees' performance in the private sector in Bangladesh. Furthermore, to assess how various elements of organizational culture affect the employee's performance in the private sector under study. The research questions are as follows:

1. Does the organizational culture influence the employees' performance?
2. What is the influence of various elements of organizational culture on employee performance?



## 2. Literature Review and hypothesis development

According to Magee (2002), the organization culture is fundamentally associated with the employee performance. Cushway and Lodge (2000) stated that organizational culture is an organizational value system and will influence the way work is done and the way employees behave. According to Hofstede (1980), organizational culture is a method used by all members of a group to distinguish themselves from other members. In essence, organizational culture may be utilized to inspire workers to work hard and stay focused on corporate objectives. Several studies conclude that organizational culture influences performance, among others seen in the results of the research conducted by Rashid et al. (2003), Hsu (2014), Aryani & Widodo (2020) and Jogaratanam (2017).

Cultural features can affect performance, but only if they are unique to or conditioned by the environment in which they are present, according to Gordon and DiTomaso (1992) and Denison (1990). Additionally, they contend that cultural characteristics can change in response to environmental factors, improving performance. Cultural traits are unique and cannot be copied, according to researchers, making them a possible source of organizational longevity. According to the resource-based viewpoint, cultural values, rarity, and sustainability, all help an organization remain viable over time (Barney, 1986 and 1991). The overall goal of this review of the literature is to look at recent research to investigate the connections between organizational culture and employee job performance.

Due to its subjective character, organizational culture can be difficult to fully capture. Even Nevertheless, it is generally understood that corporate culture is socially organized and historically driven despite the lack of a generally agreed-upon definition. This covers the principles that underpin all facets of organizational life at all levels of the business (Pettigrew, 1990; Hofstede et al., 1990). According to Schein (1990), organizational culture includes the company's overall phenomena, such as its physical surroundings, customs and rituals, general atmosphere, and guiding principles. According to Martins and Terblanche (2003), an organization's culture is directly related to the values and beliefs that its personnel hold in common. The values, conventions, stories, beliefs, and guiding principles of an organization are combined to form its organizational culture, which affects how its personnel behave and do their jobs. According to Klein et al. (1995), organizational culture is at the core of a company's operations and has a cumulative impact on both the effectiveness of the organization and the calibre of its goods and services. According to Schein (2004), corporate culture is a dynamic, interacting force that affects management and employees' attitudes, behaviors, and emotions. Prior studies have placed a strong emphasis on culture as a shared experience that depends on social and behavioural acts (Rossman et al., 1988; Schwartz and Davis, 1981; Cooke and Rousseau, 1988; Gordon and Di Tomaso, 1992; Schall, 1983; Schein, 1992; Rousseau, 1990).

Initial studies have shown that there is a correlation between organizational culture and performance (Syafuddin & Sumartik, 2022; Tj, 2022; Anisya, 2021). Hellriegel and Slocum (2009) suggested that comprehending what sustains organizational culture can improve

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performance across the board. They argued that an organization's culture helps its employees understand its historical and current modes of operation, and this awareness provides guidance for acceptable organizational norms and behaviours in the future. According to certain theoretical models, an effective human resource system is based on guiding principles, which in turn have a positive impact on employees' attitudes and behavior, leading to a well-functioning business (Ferris et al., 1998). Moreover, Mercer and Bilson (1985) found a relationship between corporate culture and employee performance. Employee performance, in turn, affects organizational outcomes such as employee satisfaction (Schmidt, Shull, and Schmitt, 2001).

Employee participation in service organizations such as banks is very important from a job and functional perspective and is effective in promoting employee satisfaction (Marcel, 2021). The ultimate continuous improvement of job performance of individuals has helped a lot in such a way that the higher the level of employee participation, the higher the organizational effectiveness and sustainability of job performance (García et al, 2019). Many studies have demonstrated a positive relationship between employee participation and work performance (Nazari, Fallahnejad, & Fard, 2022). For example, Cotton and Tuttle (1986) found that employees who had more involvement in decision-making had higher levels of job satisfaction and were more committed to their organization. Similarly, Yukl and Becker (2006) found that there was a positive correlation between employee engagement and work performance.

A bureaucratic organisational culture is characterised by strict rules, regulations, and processes which can stifle innovation and creativity, leading to decreased motivation and job satisfaction. Researchers such as Cameron and Quinn (2011) have found that bureaucratic cultures tend to result in lower levels of employee engagement and job satisfaction. Similarly, Saffold (1988) discovered that a bureaucratic environment can lead to reduced commitment and drive in employees. However, by adopting a more flexible and adaptive management approach, businesses can mitigate the negative effects of bureaucratic culture. Strategies such as granting employees more autonomy and decision-making power, and encouraging experimentation and risk-taking, have been shown to be effective in this regard (Friedman & Riggio, 1981). Research indicates that a flexible management style is positively associated with employee performance (Damanpour, 1991; Damanpour & Schneider, 2006).

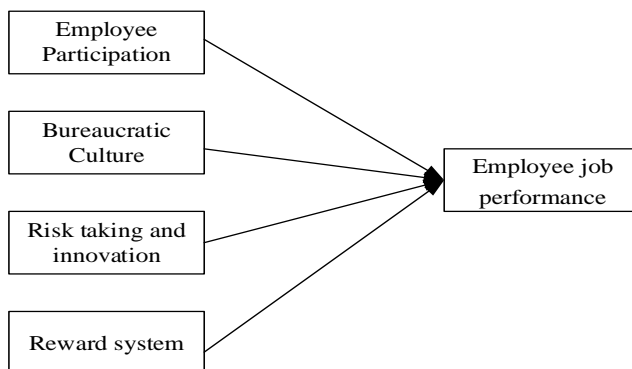
The value of a workplace culture that encourages innovation and calculated risk-taking has been recognized as a significant contributor to higher job performance. Employees are more likely to take ownership of their roles and explore creative approaches to problem-solving in such an environment. Research conducted by Scott and Bruce (1994) demonstrated that companies with a culture that prizes innovation and risk-taking are more effective overall. Similarly, Zhou and George (2001) found that innovation and job performance are closely linked. Organizations can foster creativity and risk-taking by promoting a culture of psychological safety, where employees feel comfortable taking social risks, such as expressing their ideas and concerns

(Edmondson, 1999). Studies indicate that such a culture is positively correlated with creativity and work success (Makumbe, 2021; Edmondson & Mogelof, 2006; Carmeli et al., 2010).

In order to acknowledge and encourage good work, businesses use a reward system. Studies have shown that a well-crafted system of incentives can increase job performance by boosting employee motivation and job contentment. Lawler's (1990) research demonstrated that effective incentive systems were linked to higher levels of organizational commitment and job satisfaction. Similarly, Tarigan, Cahya, Valentine, Hatane, & Jie, (2022) and Deci and Ryan, (1985) discovered that external rewards such as salary increases and bonuses were positively associated with job performance.

The bulk of research shows that there is a crucial link between organizational culture and job performance. Employee engagement, a flexible management style, psychological safety, and an effective incentive system have all been found to have a positive correlation with job performance. Conversely, bureaucratic settings that hinder creativity and innovation may have a negative impact on job performance. By comprehending the key elements of organizational culture that affect employee job performance, companies can establish a more productive and pleasant work environment to enhance business outcomes. We, therefore, hypothesize that:

- H1. Employee participation has a positive influence on employees' job performance.***  
***H2. Bureaucratic culture has a positive influence on employees' job performance.***  
***H3. Risk-taking and innovation has a positive influence on employees' job performance.***  
***H4. Reward system has a positive influence on employees' job performance.***



**Figure 1:** Proposed framework

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### 3. Research Design and Methods

#### 3.1 Measurement Questions

The measurement items for latent constructs used in the proposed model were gathered from prior research and customized in the context of job performance in Bangladesh to guarantee the validity of all instruments.

**Table 1: Measurement Items**

Constructs	Items	Measure	References
Employee participation	EMP1	I am proud to work for the company.	(Ali, 2020; Chai & Yat, 2019; Ngai & Gunasekaran, 2007)
	EMP2	I intend to stay with the company for at least the next twelve months.	
	EMP3	I would recommend our company to your friends.	
Bureaucratic culture	BRC1	Structures of the organization and systems ensure the protection of subordinates.	(Jun, 21;Kartono, 2021;Prasetyo, 2021;Ray, 2021; Limsarun, 2021)
	BRC2	The employers help in balancing and developmental structure.	
	BRC3	The organization provides welfare facilities to their employees.	
	BRC4	Responsibilities and rewards of employee's role are clearly defined.	
Risk-taking and innovation	RTI1	Where I work, innovation is encouraged.	(Limsarun, 2021;Yeo, 2017; Ngai & Gunasekaran, 2007; Prasetyo, 2021)
	RTI2	Mistakes are viewed as learning opportunities on my team.	
	RTI3	My team collaborates to ensure quality work.	
	RTI4	We are committed to serving our customers.	
Reward System	RES1	In the organization, employees are rewarded on the basis of the excellence of their job performance.	(Ray, 2021; Ali, 2020; Yuchen, 2020)
	RES2	There is a fair promotion system.	
	RES3	In the organization, rewards are handled in the same way for all employees.	
Employee job performance	EJP1	I keep in mind the work result I needed to achieve.	(Yeo, 2017; Ngai & Gunasekaran, 2007; Prasetyo, 2021; Ray, 2021;
	EJP2	I was carrying out my work efficiently.	
	EJP3	I took on extra responsibilities.	

	EJP4	I actively participate in meetings and consultations.	Yuchen, 2020)
	EJP5	I talk to colleagues about the negative aspects of my work.	

### 3.2 Design and Data Collection

The empirical data were obtained via an online survey administered to employees who work in different private organizations in Bangladesh. The survey questionnaire was designed in the English language and segmented into seven distinct sections. Section 1 briefly described the objective of this study and ensured the respondents that we maintained the privacy of their responses and used them only for research purposes. The second section of the survey included demographic questions, such as demographic characteristics of the participants in this study including their age, gender, education level, marital status, religion, and income. The subsequent sections, namely Part 3 through Part 7, encompassed questions pertaining to specific constructs. The research model (Figure 1) used various constructs, which are assessed using a 5-point Likert scale. The scale used in this study ranges from a rating of "strongly disagree" (1) to a rating of "strongly agree" (5). In order to evaluate the suitability of the questionnaire, a pretest and a pilot test were undertaken. The clarity of question-wording was ensured through a pretesting process conducted by three professional researchers. After considering the helpful feedback, we took the necessary steps to address their comments. The researchers proceeded to conduct a pilot test using a sample of 15 respondents who possessed comparable characteristics to the target population. Minor modifications were made to the measurement questions. We used the convenience sampling method to collect data. We used the Google form to prepare the questionnaire and the link to this form was shared through emails and different social media messaging apps. The empirical data collection started on January 1, 2022, and closed on February 28, 2022. We used 324 complete questionnaires for analysis.

In this study, reliability and validity were also examined. The hypothesis and path analysis were tested using a structural equation model. We used IBM SPSS Statistics 21 and Smart PLS 3.00 for analysis.

## 4. Results

### 4.1 Demographic Information

Table 2 provides demographic data on several key variables, such as education, gender, marital status, religion, age, and income. As shown in Table 2, 42.90% of the population is male while female consists of 57.10%. In addition, around 60% of the population has a master's and 33.33% have a bachelor's degree. The portion of married people (60%) was greater than unmarried (40%). In terms of religion, the portion of Muslim (47.22) and Hindu (45.37) is almost the same whereas the remaining portion is Christian. Around 50% of the total population belongs to the 25-30 years' age group.

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**Table 2: Demographic profile of respondents**

Items	Variables	Frequency	Percentage
<b>Gender</b>	Male	139	42.90
	Female	185	57.10
<b>Education</b>	HSC	13	4.01
	Bachelors	108	33.33
	Masters	197	60.80
	Doctorate	6	1.85
<b>Marital Status</b>	Single	129	40.00
	Married	195	60.00
<b>Religion</b>	Muslim	153	47.22
	Hindu	147	45.37
	Christian	24	7.41
<b>Age</b>	20-25	88	27.16
	25-30	152	46.91
	30-35	68	20.99
	Above 35	16	4.94
<b>Income</b>	Up to 20000	102	31.48
	20000-30000	66	20.37
	30000-40000	91	28.09
	40000-50000	35	10.80
	50000-60000	18	5.56
	Above 60000	12	3.70

#### 4.2 Measurement Model

The amount to which two or more items measure the same construct is known as convergent validity (Bagozzi and Phillips, 1982). The factor loadings, average variance extracted (AVE), and composite reliability test the items' convergent validity (CR). Factor loadings of 0.50 or higher, according to Hair et al. (1998), are regarded as practically significant. All remaining components in the study model have factor loadings that are larger than 0.60, which means that all of them go over and above the recommended threshold (Hair et al., 1998). The AVE provides data on the convergence of measurement items as well as assesses the shared variance in a latent variable. According to Fornell and Larcker (1981), if AVE is less than 0.5 but composite reliability is higher than 0.6, the convergent validity of the construct is still sufficient. All items, with the exception of BRC, RTI, and EJP, above the 0.50 requirement (Huang et al., 2013). There is a tolerable convergence between the items of BRC, RTI, and EJP as the AVE values of BRC (0.498), RTI (0.479), and EJP (0.431) are close enough to 0.50 and its composite reliability is 0.798, 0.786, and 0.790. All composite reliabilities achieve the minimum needed level of 0.70, which gauges the measurement model's internal consistency (Fornell and Larcker, 1981). Each construct's internal consistency is measured using Cronbach's alpha, and 0.70 is generally considered as the bottom limit (Hair et al., 1998). The average of all split-half

measurements arising from various ways of dividing the scale's variables is calculated using Cronbach's alpha coefficient. Values around one in the coefficient's range of 0 to 1 suggest acceptable internal consistency (Hair Jr., Celsi, Ortinau, & Bush, 2014). The premise of the internal consistency analysis, according to Hair Jr. et al. (2005), is that since each item on the scales must measure the same component, they must be highly linked. According to Corrar, Paulo, and Dias-Filho (2007), values above 0.6 are acceptable, however numbers nearer one suggest higher data dependability. Table 3 displays the internal consistency for each subscale (EMP: 0.534, BRC: 0.662; RTI:0.638; RES:0.792; and EJP:0.669). According to Cortina (1993), a variety of factors, including the scale's item count, affect the statistical Cronbach's alpha. The item with the lowest coefficient is EMP, which is shown in the table and has just three elements. The choice to preserve it is based on the item's conceptual significance for the service being offered in addition to its still-acceptable value (greater than 0.6). (Corrar et al., 2007).

**Table 3: Measurement model**

Constructs	Items	Loadings	Cronbach's alpha	CR	AVE
EMP	EMP1	0.728	0.534	0.762	0.517
	EMP2	0.716			
	EMP3	0.712			
BRC	BRC1	0.659	0.662	0.798	0.498
	BRC2	0.646			
	BRC3	0.779			
	BRC4	0.731			
RTI	RTI1	0.709	0.638	0.786	0.479
	RTI2	0.665			
	RTI3	0.690			
	RTI4	0.703			
RES	RES1	0.797	0.608	0.792	0.560
	RES2	0.745			
	RES3	0.699			
EJP	EJP1	0.607	0.669	0.790	0.431
	EJP2	0.669			
	EJP3	0.721			
	EJP4	0.629			
	EJP5	0.650			

**Note.** EMP: Employee participation; BRC: Bureaucratic culture; RTI: Risk-taking and innovation; RES: Reward system; EJP: Employee job performance; AVE = average variance extracted; CR = composite reliability

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**Table 4: Correlation matrix**

Constructs	BRC	EJP	EMP	RES	RTI
BRC	<b>0.706</b>				
EJP	0.622	<b>0.656</b>			
EMP	0.583	0.626	<b>0.719</b>		
RES	0.603	0.608	0.561	<b>0.748</b>	
RTI	0.549	0.654	0.568	0.547	<b>0.692</b>

**Note.** EMP: Employee participation; BRC: Bureaucratic culture; RTI: Risk-taking and innovation; RES: Reward system; EJP: Employee job performance

**4.3 Predictive Relevance**

According to the R square value of 0.587, 58 percent of the variance in employee job performance can be related to the organization's culture dimensions, while the remaining 42 percent may be attributed to variables other than the organization's culture dimension.

**Table 5: Coefficient of determination (R<sup>2</sup>)**

Construct	R Square	R Square Adjusted
EJP	0.587	0.582

**Note.** EJP: Employee job performance

Table 6: Collinearity statistics (VIF)

Constructs	BRC	EJP	EMP	RES	RTI
<b>BRC</b>		1.914			
<b>EJP</b>					
<b>EMP</b>		1.848			
<b>RES</b>		1.856			
<b>RTI</b>		1.746			

**Note.** EMP: Employee participation; BRC: Bureaucratic culture; RTI: Risk-taking and innovation; RES: Reward system; EJP: Employee job performance

**4.4 Structural model**

To get accurate findings from the structural model analysis, multicollinearity has to be taken into account. The "Variance Inflation Factor" (VIF) was discovered to vary between 1.746 and 1.914, showing that the model has no problem with Multicollinearity. Bootstrapping (5000 resamples) was used to determine the relevance of the hypothesis and evaluate the model's structural integrity. Figure 2 of the PLS-SEM model shows that each route was significant at the significance level of 5% and above when the t-values surpassed the recommended regression weight limit of 1.96. (i.e., the estimated path parameter was significant). The outcomes of the SEM model are displayed in Table 7. The evidence for hypotheses H1, H2, H3, and H4 is



shown in Table 7. Employee engagement positively influences work performance ( $\beta= 0.223$ ,  $t = 4.345$ , and  $p 0.005$ ). Besides, employee work performance is positively influenced by bureaucratic culture ( $\beta = 0.208$ ,  $t$ -value =  $3.827$ , and  $p 0.005$ ). Risk-taking and innovation also have a positive and significant impact on employee work performance ( $\beta = 0.311$ ,  $t = 5.282$ , and  $p 0.005$ ). The relationship between reward systems and employee work performance was likewise direct and favourable ( $\beta = 0.188$ ,  $t = 3.657$ , and  $p 0.005$ ). Table 7 demonstrates that all hypotheses were validated.

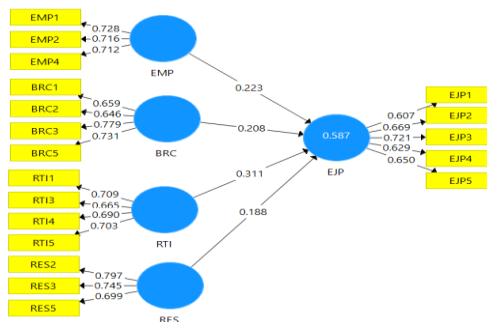


Figure 2: Structural Equation Model

Table 7: Structural model

Path	$\beta$	t- Statistics	p-Value	Comments
H1 : EMP-> EJP	0.223	4.345	0.000	Supported
H2 : BRC-> EJP	0.208	3.827	0.000	Supported
H3 : RTI-> EJP	0.311	5.282	0.000	Supported
H4 : RES-> EJP	0.188	3.657	0.000	Supported

**Note.** EMP: Employee participation; BRC: Bureaucratic culture; RTI: Risk-taking and innovation; RES: Reward system; EJP: Employee job performance

## 5. Discussion and Implications

### 5.1 Discussion

The goal of this study was to look at the effect of organizational culture on employee job performance. Based on a literature review, this study has offered four dimensions. All four assumptions were accepted after statistical analysis. This study discovered that employee participation had a considerable beneficial impact on employee job performance. The coefficient shown in Table 7 exhibits a statistically significant t value, indicating a significant influence of employee participation on employee job performance. The bureaucratic culture has a considerable favorable impact on employees' performance, according to this study. In the context of public sector enterprises, a bureaucratic culture may have a substantial impact on

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employees' performance for a variety of reasons. First, a bureaucratic culture improves alignment and establishes uniformity and shared standards for how employees should behave while interacting with one another and their surroundings. In addition to the aforementioned, a bureaucratic culture fosters a high degree of formality in how businesses run, ensuring that each employee is aware of who is in control and who is responsible for each circumstance. This supports Yiing and Ahmad's (2009) assertion that a bureaucratic culture is hierarchical, compartmentalized, organized, and has distinct lines of power. As a result, a high level of formality encourages workers to work independently with minimum intervention. When management or an employee intervenes in another person's work, the danger is reduced. This kind of setting encourages people to appreciate themselves and the work they do. Also, we identified that risk-taking and innovation have a significant and positive impact on employee job performance. This finding indicates that the ability to take risks plays a crucial role in facilitating adaptation to various environmental changes, ultimately enhancing survival and thus influencing employee work performance. The ability to take risks enables individuals to make larger investments with the goal of fostering technical progress. Therefore, risk-taking propensity impacts employee job performance. Also, the result of this study shows that reward systems influence employee job performance. This finding indicates that reward systems serve to effectively retain and incentivize individuals to fully use their capabilities. In light of the organizational context, it is necessary to utilize a blend of financial and moral incentives in order to meet the social demands of workers, thus enhancing their total productivity. A significant body of prior research has shown that organizations largely depend on incentive systems as a means to retain and motivate individuals, ultimately leading to the attainment of optimum levels of performance.

### **5.2 Theoretical Implications**

There is a theoretical application to this research. After looking through a number of studies, we discovered that none of the earlier research examined the connection between organizational culture and the four outcome criteria of employee involvement, bureaucratic culture, risk-taking, innovation, and incentive systems. The findings attempt to further our understanding of how organizational culture affects employee job performance by demonstrating how various organizational culture types connect to it in different ways. Additionally, this study suggests that an organizational culture that is conducive to improvement is one that is positive. Businesses should foster an environment where individuals are valued and fresh perspectives are embraced to retain their effectiveness and competitive advantages. The development of organizational creative practices is crucial to enhancing employee job performance.

### **5.3 Practical implications**

The organization is able to enhance its overall performance using these study findings. This may be accomplished by creating a healthy and solid organizational culture. Starting with an evaluation of the organization's current culture before creating a developmental form to achieve a more symmetrical state is highly challenging for an organization to do. The institution should

pay close attention to the underlying meaning and characteristics of that sort of culture in order to uplift the specific organizational cultures. The most important finding of the research is that changing an organization's culture takes time, and it is up to those in charge to be patient, create a growth plan that is properly tailored to that culture, and then continuously monitor its progress.

## **6. Limitations and Future Research**

Despite the significant progress made in understanding the impact of organizational culture on employee job performance, there are still some limitations that need to be addressed. Firstly, these findings relied on self-reported data, which may be subject to bias. Future research should employ more objective measures of job performance and cultural values. Secondly, the relationship between organizational culture and job performance may be affected by other factors such as industry, company size, and geographical location. It is important to examine these factors to get a more comprehensive understanding of the relationship between organizational culture and job performance. Lastly, more research is needed to explore the long-term effects of a positive organizational culture on job performance, and whether it can lead to sustained success for organizations.

## **7. Conclusion**

The study showed that a variety of organizational culture characteristics had a significant favorable effect on an organization's success. For the purpose of gathering data, a questionnaire was created and distributed. The primary research question examined relationships between four potential organizational culture elements. The four independent variables, employee participation, bureaucratic culture, risk-taking and innovation, and reward system as well as the dependent variable, employee job performance were used to generate the hypothesis. Organizational culture, which encompasses all these independent characteristics, has a significant influence on how well individuals perform at work. The researchers looked at how employee participation in decision-making and other activists' shift to organizational thinking improved employee job performance. Bureaucratic culture causes procedures and processes to be put off, stifles creativity, and discourages employee job performance. When compared to bureaucratic culture, risk-taking and innovation have the opposite effect since it fosters a culture of psychological safety at work. Reward System, the last independent variable, determines whether compensation is delivered following performance evaluation by multiple raters. The performance-based pay system links remuneration to work success via both extrinsic (salary increments and bonuses, payment for overtime) and intrinsic (autonomy, recognition, and personal growth) factors. Researchers will have a greater chance to judge the validity and generalizability of their findings if they use a bigger sample size from a range of organizations. Future research can look at how employees' opinions of culture in diverse businesses relate to their performance, which is definitely important.

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# Is There Any Association Between Banks And Stock Markets? Empirical Evidence from Bangladesh

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**Abstract:** Using time series data for the years 1990 to 2020, this study investigates the relationship between the expansion of the banking sector and stock market in Bangladesh. The stock market capitalization (MC- % of GDP) is utilized to track stock market growth, while domestic credit in private sector (DC-% of GDP) is applied to quantify bank development. This study applies the Autoregressive Distributed Lag (ARDL) -Bounds testing approach to scrutinize the affiliation between two systems. The empirical results of this study show a positive and statistically significant correlation between the growth of the stock market in Bangladesh and the banks there. Whether the stock market development model is estimated over the short or long term, the results still hold true. Other results show that the stock market development in Bangladesh is positively determined by the Government Savings (GS), Inflation Rate (INF) and FDI but negatively and significantly affected by Per Capital GDP (PCGDP) in the short run. However in the long run, stock market growth is positively determined by Government Savings (GS) and negatively affected by INF, FDI and PCGDP that are statistically insignificant.

**Keywords:** Stock Market, Banking Sector, ARDL- Bound Testing Approach, Bangladesh.

## 1. Introduction

The spine of any nation's economic system is its financial system. Economic and financial system development is intertwined. An economic system eventually outgrows the capabilities of the current financial system as it develops (Carl B. McGowan, 2008). A secure financial system is necessary for economic development because it acts as a transmission mechanism for money from savers to those seeking to borrow money for profitable investments (Banerjee). If the system is effective, it generates wealth that can be distributed throughout society and help the most vulnerable and poor people. The financial sector is extremely crucial to the country's real economy. The World Bank's Global Development Database has formed an outline. The framework proposed four groups of proxy variables that all together define a prudent financial system: financial depth, access, efficiency, and stability. In the financial sector, these four specifications are further split into two main sections: financial institutions (principally banking) and financial markets (primarily stock market). It is worth mentioning that the banking industry, particularly in developing nations like Bangladesh, contributes more to spurring real economic activity than the stock market (Biswas, Hossain, Podder, & Hossain, 2018). But It is

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essential to develop the stock market so that the financial system can stand in a good foundation. By providing investors with a clear exit strategy, the stock market offers greater flexibility mostly in financial intermediation phase. Because of these purposes, stock markets act as a bridge between financing and economic activity. Thus, the growth of stock markets is essential to the financial and economic health of the world (Ayaydin & Baltac, 2013). One of the most significant financial institutions in any economy, including Bangladesh is the stock market. It enables businesses to raise sizable sums of money from numerous individual investors both inside and outside of a nation. Today, investing in stocks is more frequent than investing in other investment sectors for millions of educated middle class Bangladeshis. Stocks are more liquid for an investor than any other form of investment because they allow for hassle-free ownership transfers at any time (Saha, 2012). However, the prevalent opinion today is that nations concerning constructing a highly complex banking-based financial system and also setting up a modest capital market to support it.

### **1.1 Objectives of the Study:**

The primary objective of this study is to carry out an evidence-based test to look into the connection between Bangladesh's stock market and bank development. Assessing the relationship between stock market growth and certain macroeconomic variables over the long and short terms is another specific goal.

## **2. Literature Review**

Since many years ago, there has been an argument about the relative contributions of market-based and bank-based financial systems to promote the growth and development of economy (Odhiambo, 2010). The adherents of the bank-based system contend that this financial systems contribute significantly to the expansion of the real economy by effectively transferring funds from savers to borrowers, enabling investments in physical capital as well as the "creative destruction process" and stimulating innovation (Abubakar & Gani., 2013). Weak banking sector not only puts an economy's long-term viability in danger, but it also has the potential to set off a financial crisis, which can then result in an economic crisis (Mhadhbi, Terzi, & Bouchrika, 2019). It is considered that the investment in the equity market is thought to be price sensitive and may not be long-term sustainable compared to the investment in the bank (Odhiambo, 2010). Other supporters claimed that the stock market mobilizes domestic savings by offering a great variety of financial instruments which fulfils the needs of the borrowers as well as the investors. A well-functioning and efficient stock market allows investors to diversify away unsystematic risk which will increase the marginal productivity of capital (Antonios, 2010). However Well-functioning financial intermediaries and market-based institutions will both contribute to the expansion of the economy in a balanced and developed financial system (Lagua, 2019). However, due to their vulnerabilities, each system has its own flaws that could cause a financial crisis.

The current argument, however, focuses on the independence versus complementarity of the two systems. The claim made here is that, rather than complementing one another, the growth of Bangladesh's banking sector and stock market from 2006 to 2015 was found to be independent

of one another (Biswas, Hossain, Podder, & Hossain, 2018). These studies also came to the conclusion that banking sector development and stock market development are both complementary with each other (Ndikumana, 2005). An investigation was carried out to assess how market capitalization and macroeconomic factors related in emerging markets (Adebayo, 2016). In the end, it was discovered that there was a connection between market capitalization and a variety of microeconomic variables but it was not statistically significant. Another study was carried out by Ayaydn & Baltac (2013) to examine the effects of corruption and the expansion of the banking sector on stock market development. The findings suggested a conflict between the growth of the financial system and the fight against corruption. It was discovered that there was a link between the expansion of the banking sector and the expansion of the stock market in emerging economies. This article also emphasized the importance of macroeconomic factors including income level, interest rate, private capital flows, stock market liquidity, investment, and inflation in determining the expansion of the stock market in emerging market nations. As well as focusing on the relationship between various macroeconomic variables and financial markets, some studies demonstrated the way the stock market and bank market contribute to economic growth. The study focused on the beneficial effects of banks on capital accumulation in low-income countries and the stock markets' positive effects on productivity and economic growth in high-income nations (Rioja & Valev, 2011). Stock markets and banks have a beneficial impact on economic growth. Financial development aids in the process of economic growth, as do stock market and bank development. (Beck & Levine, 2002). (Mian Sajid Nazir, 2010) examined the link between stock market development and economic growth using the two primary indicators of stock market development—market size and liquidity as determined by market capitalization. The results demonstrated that expanding a country's stock market and increasing market capitalization in a developing market like Pakistan can both support economic growth. (Omotor, 2014) conclusions appeared to suggest that stock market gains might be a good hedge against Nigerian inflation. In a study using primary and secondary data, (Evans O. Amata, 2016) examined the connections between interest rate, inflation, and stock market volatility. The findings demonstrated a long-term, significant, and positive connection between inflation rate and stock market volatility. The findings also demonstrated a significant and favorable short-term relationship between inflation and stock market volatility. In both the short and long runs, it was revealed that there is a weakly significant interaction between interest rates and stock market volatility. The study found the negative relationship between inflation and stock market which indicates that stock market returns may create an obstacle against inflation in Nigeria (Omotor D. G., 2014). The empirical research conducted by (Carl B. McGowan J. N., 2008) examined the relationship between economic development and stock market size in relation to total economic output. Where a positive relationship was found and contended that a well-developed stock market facilitates capital allocation in an economy, which is necessary for economic growth and development, and provides successful entrepreneurs with the large pools of funds required for corporate growth. This study (Alam & Uddin, 2009) shows an empirical relationship between stock index and interest rate as well as seeks evidence for the existence of share market efficiency based on monthly data. Interest rates have been found to have a significant negative relationship with share prices for all of the

countries, and for six of those nations, changes in interest rates have been found to have a significant negative relationship with changes in share prices. The findings by (Nazir, Nawaz, & Gilani, 2010) also showed that increasing a nation's stock market's size and an emerging market's market capitalization are two ways to achieve economic growth. Regrettably, very few studies have attempted to empirically investigate the link between the growth of the stock market and the banking industry. One empirical finding revealed a clear positive relation between South African banks and stock markets. The conclusion still holds true whether the model is applied for the short term or in the long term (Odhiambo, 2010). The association between banking sector and stock market development do not significantly fill in each other due to the canonical correlation analysis between the two set of indicators (Sumon et al. 2017). This study demonstrated that, even after considering economic and political variables, stock market liquidity and banking development both positively predict growth, capital accumulation, and productivity increases when entered together in regressions. The findings supported the ideas that stock markets offer different services from banks and that financial markets play a significant role in economic growth (levine & sarazervos, 1998).

## **2.1 Research Gap**

Previous research on this topic has relied excessively on cross-country data, where the long-standing interaction between the two systems was investigated using the maximum likelihood test proposed by Johansen (1988) and Johansen and Juselius (1990) or the residual-based cointegration test posited by Engle-Granger (1988) which hardly ever takes into account country-specific concerns. However, it has been realized that these techniques are useless with small sample sizes. Earlier papers focused primarily on how specific macroeconomic factors affected the banking or stock markets separately. Studies based on the relationship between the banking sector and the stock market is infrequent. This is why the highly regarded ARDL model was employed to determine the connection between Bangladesh's banking industry and stock market.

## **3.0 Methodology and Research Design**

**3.1 Type of Research:** The main goal of the investigation is to comprehend the relationship between dependent and independent variables; the research used in this study is quantitative in nature and is distinguished by a correlational research design. Correlational research, a kind of non-experimental research methodology, uses statistical analysis to look at the connection or association between two variables.

**3.2 Period of the Study:** This research incorporated annually time series data ranging from 1990 to 2020.

**3.3 Data Sources and Type:** The World Development Indicators were a major source of the data used in this study. The International Monetary Fund (IMF), Bangladesh Bureau of Statistics (BSS), and the annual reports of the Bangladesh Bank were also used to replenish the local data.

**3.4 Description of the Variables:** The following variables have been used in this study.

SL. NO.	Name of the Variables	Units of Measurement	Acronym	Author
Dependent Variable				
01	Market capitalization of listed domestic companies	% of GDP	MC	(Biswas, Hossain, Podder, & Hossain, 2018), (Odhiambo, 2010), (Ayaydin & Baltac, 2013), (Adebayo, 2016),
Independent Variable				
02	Domestic credit to the private sector	% of GDP	DC	(Biswas, Hossain, Podder, & Hossain, 2018), (Odhiambo, 2010), (Ayaydin & Baltac, 2013)
03	GDP per capital	Current US\$	PCGDP	(Odhiambo, 2010), (Adebayo, 2016).
04	Gross savings	% of GDP	GS	(Odhiambo, 2010), (Ayaydin & Baltac, 2013)
05	Inflation, GDP deflator	Annual %	INF	(Odhiambo, 2010), (Ayaydin & Baltac, 2013), (Adebayo, 2016).
06	Foreign direct investment, net inflows	% of GDP	FDI	(Ayaydin & Baltac, 2013)

**3.5 Model Specification:** There are several methods for figuring out whether time-series variables have long-term relationships. When it comes time to analyze an economic scenario, Autoregressive Distributed Lag Models (ARDL) are extremely important. Any change in one economic variable in an economy has the potential to influence other economic variables indefinitely. This change in a variable does not reflect immediately, but rather spreads over subsequent periods (Chetty, 2018). The dependent variable is a function of both its current value and the past values of other explanatory variables in an autoregressive distributed lag model introduced by Perasan and Shin. The ARDL co-integration strategy has a number of benefits over other co-integration strategies. It is not required for all the variables to be integrated in the same order set forth by the ARDL. The ARDL approach is feasible whether the underlying regressors are integrated of order one [I(1)], order zero [I(0)], or fractionally integrated. However, when any of the variables are integrated in the second order [I(2)], this method is inappropriate. Second, the ARDL test is more reliable and performs better with small data samples (Latif, Abdullah, & Razdi, 2015). Third, the ARDL model typically yields accurate enumeration of the long-run model and trustworthy t-statistics, in spite of the fact that some of the regressors are endogenous. The most widely used ARDL model is employed in this research to examine the linkage between bank and stock market development.

Market capitalization of domestically listed companies serves as a proxy for stock market development, and domestic credit to the private sector and other regressors serve as proxies for bank development. The ARDL model employed in this investigation is as follows:

$$\Delta \ln MC_t = \beta_0 + \sum_{i=1}^n \beta_1 \Delta \ln MC_{t-i} + \sum_{i=0}^n \beta_2 \Delta \ln DC_{t-i} + \sum_{i=0}^n \beta_3 \Delta \ln PCGDP_{t-i} + \sum_{i=0}^n \beta_4 \Delta \ln GS_{t-i} + \sum_{i=0}^n \beta_5 \Delta \ln INF_{t-i} + \sum_{i=0}^n \beta_6 \Delta \ln FDI_{t-i} + \beta_7 \ln MC_{t-1} + \beta_8 \ln DC_{t-1} + \beta_9 \ln PCGDP_{t-1} + \beta_{10} \ln GS_{t-1} + \beta_{11} \ln INF_{t-1} + \beta_{12} \ln FDI_{t-1} + \mu_t$$

Where,

$\Delta$  = First Difference Operation

$\beta_0$  = Constant

$\beta_1$  to  $\beta_6$  = Depicts the Short-run Relationship of the Model

$\beta_7$  to  $\beta_{12}$  = Depicts the Long-run Relationship of the Model

$\mu_t$  = White Noise Error Term

## **4.0 Empirical Analysis and Interpretations**

### **4.1 Multicollinearity Test**

A multicollinearity test aids to diagnose the presence of multicollinearity in a model. When two or more independent variables are interconnected or interrelated, this is referred to as multicollinearity. Multicollinearity is a problem when it exists in a dataset (Riya Jain, 2020).

The VIF (Variance Inflation Factor) assesses the level of multicollinearity in regression analysis. We are all aware that the VIF must be under 10. The presence of multicollinearity is indicated if the value is greater than 10. All of the explanatory variables have centered VIFs that are less than 10 (shown in appendix, table 1). As a result, we can now say with certainty that the explanatory variables are not multicollinear.

### **4.2 Stationary Test**

To confirm the stationary nature of a time series, unit root tests are utilized. If the shape of the series' distribution remains the same regardless of the passage of time, it is regarded as stationary; or else, it is referred to as non-stationary. Non-stationarity can be engendered by unit roots. Regression becomes meaningless or spurious when nonstationary data are used for estimation. For this purpose, it is essential to comprehend whether the time series data is stationary or nonstationary. Although unit root tests are not required by the ARDL modeling approach, it should be carried out to make sure that no variable is integrated to order [I(2)] or higher. All variables are thought to be either I(0) or I(1) by the ARDL procedure.

This study applied the Augmented Dickey-Fuller (ADF) unit root test, one of several unit root test methodologies. Performing stationarity tests on differenced variables is the next step if the test reveals that the data is non-stationary at the level.

The hypotheses for the test are:

**H<sub>0</sub>**: The data series is nonstationary.

**H<sub>1</sub>**: The data series is stationary.



Since all the variables, with the exception of inflation, are nonstationary at level (shown in appendix, table 2), at this point, a unit root test needs to be performed at the first difference for the variables that exhibit nonstationary characteristics (shown in appendix, table 3).

#### 4.3 ARDL Bounds Test for Co-integration Analysis

The ARDL-Bounds testing procedure comprised in two steps. At the first step, The optimum lag is one for yearly data serried which was chosen using Akaike Information Criterion (AIC) lag selection criteria for the stock market development function, (shown in appendix, table 4). The bounds F-test is used after determining the ideal lag length. The F-test, also recognized as the ARDL bounds testing method, was designed to assess whether the variables had a long-term relationship.

The Hypothesis is stated as:

$H_0$  : No co-integration

$H_1$  : Co-integration

If F-Statistics exceeds the critical value for the upper bound I(1), co-integration is present (reject null hypothesis). Therefore, there is a long-term relationship. The findings of Bound test demonstrate that, at the 1% and 5% levels of significance, respectively, the calculated F-statistic (6.2546) is greater than the upper bound critical values (4.15), (3.38) (shown in appendix, table 5). This suggests a consistent long-term connection between the bank and stock market development indicators. The outcome of this analysis is in line with previous research's findings, including (Odhiambo, 2010).

#### 4.4 Error-Correction Model (ECM)

In the second step Error-Correction Model (Model) has been applied to determine the long term and short term relationship among the variables in the stock market due to finding a stable long run association among the variables.

The long-term result indicates that the development of bank based financial system and stock market in Bangladesh are positively correlated. This outcome is coherent with the findings of (Odhiambo, 2010). According to the coefficient of domestic credit, if domestic credit rises by 1% over time, market capitalization will rise by 5.62% (shown in appendix, table 6). In contrast to (Biswas, Hossain, Podder, & Hossain, 2018), the probability value for this coefficient is less than 0.05, makes it statistically significant. The study demonstrates the negative but insignificant relationship between stock market growth and per capita real GDP. Other findings shows that government savings, with a statistically insignificant p-value result, have a positive long-term impact on the development of Bangladesh's stock market, while inflation and foreign direct investment have a negative long-term impact. The p-value of  $0.0340 < 0.05$  indicates that the FDI coefficient is statistically significant. The following equation can be used to represent the outcome over the long run:

$$LMC = -17.70 + 5.62LDC - 0.67PCGDP + 1.72LGS - 0.27LINF - 0.51FDI$$

The short-term outcome demonstrates that the lagged value of stock market capitalization has a significant impact on Bangladesh's stock market capitalization. As a result, the stock market capitalization scenario for the present and future can be predicted using the past value. The

short-term development of banking sector is positively correlated with the long-term development of the stock market, and this correlation is statistically significant ( $p\text{-value} = 0.0010 < 0.05$ ). According to its coefficient, if all other factors remain constant, a 1% increase in domestic credit will result in a 7.62% (shown in appendix, table 7) increase in market capitalization in the short term. But one and two period lagged domestic credit has a negative and negligible impact on the market capitalization. While in the long run the relationship was insignificant, the real GDP per capita is significantly and negatively correlated with stock market capitalization in short term period. Lagged PCGDP values have an inverse relation with stock market capitalization, which is insignificant in the first lag and significant in the second. In line with the long-term relationship, the growth rate of government savings is positively correlated with stock market capitalization, but this relationship is much stronger in the short term. In contrast to the long run, the short run relationship of inflation shows that it has a significant and favorable influence on the growth of the stock market. Lagged values, however, demonstrate the negative and significant impact. Finally, the short-term development of Bangladesh's stock market is positively and significantly influenced by FDI.

**4.5 Serial Correlation Test:** Serial correlation exemplifies a lagged version of a given variable and its relationship over time. Serial correlation is the statistical term for the association between observations of a single variable across multiple time periods. If the serial correlation of a variable is zero, there is no correlation and each observation stands distinct from the rest. The observations are serially correlated, on the other hand, and subsequent observations are influenced by the values of the past if the serial correlation of a variable has a skew toward one.

$H_0$  : No Autocorrelation

$H_1$  : The model includes Autocorrelation.

Thumb Rule:  $P\text{-value} < 0.05$ , Reject  $H_0$

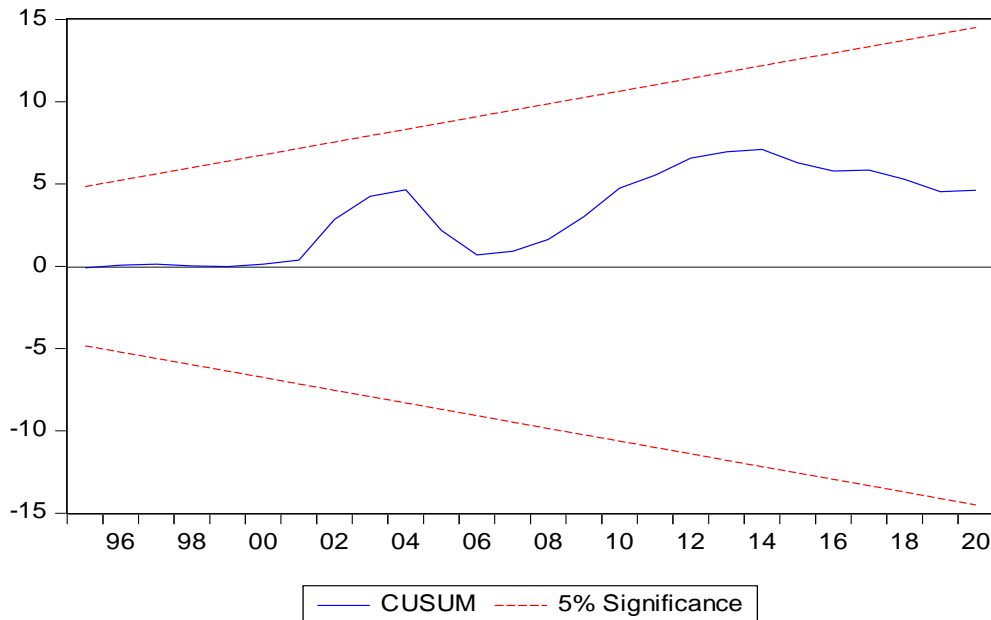
We can accept the null hypothesis, which states that since the probability value is higher than 0.05 (shown in appendix, table 8), there is no serial correlation or autocorrelation in the model.

#### **4.6 Stability Test for Stock Market Development**

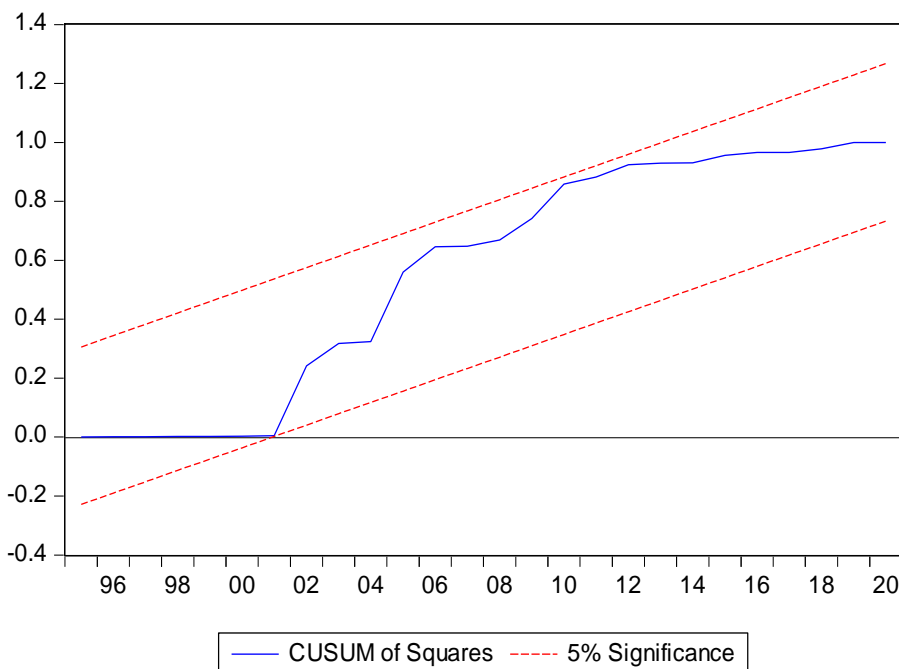
##### **CUSUM and CUSUM Square Tests:**

To assess the stability of the model's coefficients, the CUSUM and CUSUM Square tests are used. The null hypotheses for both tests are the coefficients in the model are stable the null hypothesis is rejected when the line crosses the pair of 5% significance critical lines.

**Figure 1: CUSUM Test**



**Figure 2: CUSUM Square Test**



Figures 1 and 2 show the results of the CUSUM and CUSUM Square stability tests, which demonstrate that the parameters were stable throughout the sample period based on the fact that they are contained within the critical boundaries (red lines).

## 5 Conclusion

It is well-known that the stock market and the banking sector amass funds for investments and for overall economic growth, it is crucial to know whether or not the development of the banking sector has any discernible influence on the development of the stock market. The study looked into the connection between banks and the stock market in Bangladesh using the popular ARDL Approach. The empirical findings of this study demonstrate a favorable and statistically significant association between Bangladesh's banks and the expansion of the stock market. The results are applicable whether the stock market development model is estimated in the short or long run. Other findings indicates that while real GDP per capita, inflation, and foreign direct investment have a negative effect on Bangladesh's stock market growth, savings rates have a positive impact. Similarly, in the short term, the stock market's growth is positively correlated with the stock market's lagged values, level of gross savings, inflation rate, and FDI. However, domestic credit lagged values; real GDP per capital and its lagged values, and inflation lagged values all had a negative impact in the development of stock market in Bangladesh. The overall analysis leads to the conclusion that there are strong, mutually beneficial relationships between Bangladesh's stock market and banking sector, which are statistically significant in both the short and long terms.

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Appendices:

**Table 1: Variance Inflation Factors**

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	11.39846	816.9577	NA
LDC	0.972162	781.1892	9.283187
LPCGDP	0.246402	739.432	7.229591
LGS	1.945978	1243.737	6.479723
LIN	0.032213	7.379658	1.456138
LFDI	0.021377	7.537237	4.964297

Source: Author's Assessment Using EViews 10

**Table 2: Stationarity Tests of Variables at Level**

Variables	Augmented Dickey-Fuller Test Statistic				Result
	Intercept	Probability	Trend and Intercept	Probability	
LMC	-2.1258	0.2365	-2.9655	0.1579	Nonstationary
LDC	-1.2062	0.6585	-1.0140	0.9269	Nonstationary
LPCGDP	2.5761	1.000	-1.2034	0.8917	Nonstationary
LGS	-0.5122	0.8753	-2.2728	0.4350	Nonstationary
LINF	-4.0630	0.0038	-4.6142	0.0047	Stationary
LFDI	-1.9893	0.2896	-1.8011	0.6790	Nonstationary
Test Critical Values					
At 1%		-3.6702	-4.3240		
At 5%		-2.9640	-3.5802		
At 10%		-2.6210	-3.2253		

Note: Acceptance of Alternative Hypothesis At 1%

Source: Author's Assessment Using EViews 10

**Table 3: Stationarity Tests of Variables at First Difference**

Variables	Augmented Dickey-Fuller Test Statistic				Result
	Intercept	Probability	Trend and Intercept	Probability	
LMC	-5.9247	0.000	-5.9458	0.0002	Stationary
LDC	-5.8442	0.000	-6.0449	0.002	Stationary
LPCGDP	-3.7280	0.0089	-4.1813	0.0134	Stationary
LGS	-5.2383	0.0002	-5.1119	0.0015	Stationary
LFDI	-5.1000	0.003	-4.8121	0.0040	Stationary
Test Critical Values					
At 1%		-3.7241		-4.3943	
At 5%		-2.9862		-3.6122	
At 10%		-2.6326		-3.2431	

Note: Acceptance of Alternative Hypothesis At 1%

Source: Author's Assessment Using EViews 10

**Table 4: Lag selection Criteria**

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-83.1162	NA	1.88E-05	6.145946	6.428835	6.234543
1	91.6405	265.1482*	1.39e-09*	-3.423484*	-1.443263*	-2.803304*
2	127.0405	39.06209	2.06E-09	-3.382107	0.295448	-2.230342

Source: Author's Assessment Using EViews 10

Notes: \* indicates lag order selected by the criterion

**Table 5: ARDL Bounds Test for Co-integration Result**

Computed F-Statistics	Lower Bound Value		Upper Bound Value		Decision
	At 1%	At 5%	At 1%	At 5%	
6.2546					Co-integration Exists
	3.06	2.39	4.15	3.38	

Source: Author's Assessment Using EViews 10

**Table 6 :Long-run Relationship**

Variable	Coefficient	Std. Error	t-statistic	Probability
LDC	5.621812	1.513415	3.714653	0.0015
LPCGDP	-0.66944	0.572803	-1.1687	0.257
LGS	1.722812	1.377464	1.250713	0.2262
LINF	-0.27196	0.305052	-0.8915	0.3838
LFDI	-0.51117	0.223119	-2.29101	0.0336
C	-17.6991	4.669145	-3.79066	0.0012

Source: Author's computation using EViews 10

**Table 7: Short-run Relationship**

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Variable	Coefficient	Std. Error	t-statistic	Probability
D(LMC(-1))	0.381610	0.116079	3.287503	0.0111
D(LMC(-2))	0.455763	0.090797	5.019601	0.0010
D(LDC)	7.617163	1.095187	6.955125	0.0001
D(LDC(-1))	-5.918508	1.350547	-4.382304	0.0023
D(LDC(-2))	-10.51449	1.462599	-7.188909	0.0001
D(LPCGDP)	-5.411753	1.310859	-4.128403	0.0033
D(LPCGDP(-1))	-1.470281	1.302992	-1.128388	0.2919
D(LPCGDP(-2))	-4.869732	0.963342	-5.055041	0.0010
D(LGS)	8.611060	1.602504	5.373502	0.0007
D(LINF)	0.842182	0.122883	6.853499	0.0001
D(LINF(-1))	-0.558802	0.105701	-5.286648	0.0007
D(LINF(-2))	-0.843682	0.125289	-6.733887	0.0001
D(LFDI)	0.614567	0.137609	4.466028	0.0021
R-squared	0.936864	Mean dependent var		0.113876
Adjusted R-squared	0.878237	S.D. dependent var		0.762948
S.E. of regression	0.266227	Akaike info criterion		0.497916
Sum squared resid	0.992274	Schwarz criterion		1.164019
Log likelihood	7.029172	Hannan-Quinn criterion.		0.701550
Durbin-Watson stat	3.078043			

Source: Author's Assessment Using EViews 10

**Table 8: Breusch-Godfrey Serial Correlation LM Test**

F-statistic	1.587523	Prob. F(2,23)	0.2260
Obs*R-squared	3.760315	Prob. Chi-Square(2)	0.1526

Source: Author's Assessment Using EViews 10



# Factors Affecting Organizational Climate at Tertiary-Level Educational Institutions: An Empirical Study on Private University Teachers' in Bangladesh

Rozina Akter<sup>1</sup>

## Abstract

Organizational climate is how employees feel about their work environment and how it affects them as people. In this study, the researcher investigates the factors of organizational climate which affect the private universities teaching environment. 261 responses were collected using convenient sampling technique from the faculty members of different private universities in Bangladesh. A structured questionnaire (five-point Likert scale) is used to collect the primary data. To construct the new factors - Principal Component Analysis (PCA) is used. The results of the study showed four new factors, such as: 1) Employee involvement 2) Support of top management and peer group 3) Innovation and creativity and 4) Flow of Information. This result indicates that total variables explain 69.652 % of the organizational climate of private university in Bangladesh. The present study has some limitations too. The sample size and area are narrow in this study. Implication and directions for further study is also mention in the study.

**Keywords:** Organizational climate; tertiary level educational institution; Private Universities Bangladesh.

## 1.1 Introduction

Organizational climate is made up of two words: organizational and climate. An organization is a group of people who work together towards a common goal by splitting up tasks. The climate, on the other hand, is a state, weather, and temperature. (James & James 1989) say that organizational climate is a construct with multiple dimensions that includes many different evaluations of the work setting by different people. (Luthans, Youssef-Morgan & Avolio 2015) say that organizational climate is the internal environment of an organization as seen by its' members. This environment affects how the members act and can be defined by the organization's traits or aspects. Organizational environment is how people feel about their jobs. Organization climate leads to the development of natural patterns that motivate employees, focus on realistic views, and have an effect on how well they do their jobs. Organization climate is closely linked to the process of making a good work environment that encourages workers to get along and work together. Every organization will have a distinct atmosphere. The different kinds of jobs in the organization or the kinds of people who work there will show these differences. It's important to have a good work setting if employees want to make friends at work and keep good relationships with coworkers, boss, and the company (Gaunya 2016).

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Faculty members at tertiary-levels are happier with their jobs when their instructional and learning setting has things like high academic accomplishments, low academic difficulties, good administration, and low turnover (Amabile et al. 1996; Isaksen & Lauer, 2002; Zubair et al. 2015). These behaviors include encouraging new ideas, having the resources needed, paying attention to employee concepts, generating environments that enable open discussion of ideas, which includes employees in decision-making, and evaluating employees fairly (Addai et al. 2019; Da'as et al. 2020; Hatjidis et al. 2019). Organizational climate is the subjective quality of the workplace. Organization members can understand and report its elements through proper assessments (Khair, 2017).

Private universities are regarded as the most important stakeholders in tertiary-level education in Bangladesh. They work hard to improve the employee's job satisfaction and performance so that they can achieve their own goals as much as possible. From the beginning of education until now, there have been numerous modifications that have kept up with contemporary times and the needs of society.

In this study, the author has the interest to find the factors of organizational climate that ensure a smart working environment in private universities of Bangladesh. The study has the objectives to explore the factors that affect the organizational climate at tertiary –level educational institutions and find the relationships between the variables.

In educational institution, teachers are the front-line player. At tertiary –level educational institutions, a favorable organizational climate ensure a good academic work environment both for the faculty member and students. In this regards, the present study try to find out the dimensions of organizational climate of private universities of Bangladesh. It ensures a good work atmosphere which enables the faculty member to provide quality education at tertiary level educational institutions.

## **2.0 Literature Review**

In the management and organizational behavior literature of today, the idea of organizational climate has been discovered to be one of the most significant organizational concepts. Researchers in organizational behavior have been interested in how workers see their work environments and how that affects their attitudes and actions at work for a long time. Early researchers thought that the social climate or environment of a workplace had a big impact on how people felt about their jobs and how well they did their jobs. This, in turn, was thought to affect organizational productivity. (Litwin & Stringer 1968) say that some of these are workers' responsibilities, the organization's structure, and the style of administration, management's support, feedback on performance, handling conflicts, and rewards. Organizational climate has four aspects of an organization's climate: (i) Individual autonomy, which is based on self-responsibility, agent autonomy, rules orientation, and chances for individuals to take the initiative. (ii) The amount of structure put on the job, which is based on structure, management structure, and how close the supervisor is, (iii) Reward Orientation: This is based on reward, general happiness, promotion-achievement orientation, and being profit-minded and sales-oriented, (iv) Consideration, warmth, and support, which are based on things like support from

managers, caring for subordinates, and warmth and support. (Rozmana & Strukelj 2021) found that six aspects of the organizational climate—leadership, employee relations, employee commitment, employee satisfaction, and employee motivation—have a big effect on how involved staff have to work in medium-sized companies. The most common management problem that businesses face today is finding a creative, flexible work environment that encourages job happiness and new ideas. According to research by Nair (2006), the impact of office atmosphere on workers' productivity is growing, satisfaction, creativity, drive, and retaining. (Esch et al. 2018) found that an environment that fostered innovation among workers was positively correlated with company success. Some aspects of organizational climate that are needed for a creative organization are emotional participation of organization members in organizational actions and goals, freedom of behavior, the organizational method to address new ideas, emotional security in organizational relationships, time to develop new ideas, tolerance for uncertainty, etc. (Ekvall, 1996, as cited in Olsson et al., 2019). The study of Shadur, Kienzle & Rodwell (1999) indicates that employee involvement has positive association with organizational climate; the variables are decision making, teamwork, communication, bureaucracy, innovation and support. According to Abun et al. (2021) employee engagement also has positive association with organizational climate-challenge, take part in academic strategy making, team commitment, and flexibility and so on. Jones et al. (2020) found a positive correlation between peer groups and organizational climate.

### 3.0 Research Methods

A sampling frame is designed for the faculty members of private universities within Dhaka and Chittagong divisions. The respondents are selected as per the convenience sampling technique. The dependent variable in this study is "organizational climate," and the independent variables are twenty (20). The study is based on primary data. The data were collected through a questionnaire survey using hard copy and Google Forms. There are 15,393 teachers in 102 private universities in Bangladesh, where the number of permanent teachers is 12,082. The questionnaire form was sent to the teachers of six private universities in Dhaka and Chittagong, Bangladesh. 261 responses were considered for analyses which are appropriately responded by the respondents. The formula for determining sample size with finite numbers of population is  $n = \frac{z^2 \cdot p \cdot q \cdot N}{e^2 \cdot (N-1) + z^2 \cdot p \cdot q}$  (Kothari, 2006). By using this formula 197 sample size is appropriate for 12,082 faculty members at 2% true value. A five point Likert scale format questionnaire is designed for collecting data, where values range from (strongly agreed =5, agreed = 4, neutral = 3, disagreed = 2, and strongly disagreed =1). The research instrument used in this research is adopted from (Litwin & Stringer 1968) for measuring the organizational climate. Reliability is formed by an overall Cronbach's alpha that shows the strong or weak consistency of a set of items (variables) that are considered hypotheses to measure the study concept. The value of Cronbach's alpha varies from 0 to 1, but values greater than 0.6 are required to be reliable (Cronbach 1951; Malthotra et al. 2002). It is computed in this study by using the SPSS- 23 software. The reliability value of the scale used in the present study is 0.923. It is observed that the scale of the present study is highly reliable for data analysis.

#### 4.0 Data Analysis and Findings

##### 4.1 Demographic analysis of the data

**Table 1- Demographic analysis**

	<b>Frequency</b>	<b>Percentage</b>
<b>Gender</b>		
Male	198	75.9
Female	63	24.1
<b>Total</b>	261	100.0
<b>Marital Status</b>		
Married	243	93.1
Unmarried	18	6.9
Total	261	100.0
<b>Tenure</b>		
3-4 year	18	6.9
7-8 year	45	17.2
9-10year	45	17.2
>10 years	153	58.6
	261	100.0
<b>Educational qualification</b>		
Graduate	18	6.9
Postgraduate	162	62.1
M.Phil	36	13.8
Phd	45	17.2
Total	261	100.0
<b>Position</b>		
Lecturer	63	24.1
Senior Lecturer	9	3.4
Assistant Professor	162	62.1
Associate Professor	18	6.9
Professor	9	3.4
Total	261	100.0
<b>Age</b>		
31-35	81	31.0
36-40	126	48.3
41-45	36	13.8
46-50	9	3.4
>50	9	3.4
Total	261	100.0

Salary		
31,000-40,000	54	20.7
41,000-50,000	36	13.8
51,000-60,000	9	3.4
61,000-70,000	45	17.2
71,000-80,000	81	31.0
81,000-90,000	18	6.9
>90,000	18	6.9
Total	261	100.0

Source: Authors own study, 2023

In demographic section of the survey questionnaire- gender, marital status, tenure, educational qualification, position, age, salaries are included. Out of the total sample (Table-1), 75.9% were male and 24.1% were female. The majority of the respondents are married, and the maximum age group belongs to those aged 36–40years. The maximum numbers of respondents have been working as faculty members for more than 10 years. The least of the respondents are working as senior lecturers and professors, and the maximum are working as assistant professors. Besides that, most of the respondents have an M.Phil. Degree. The maximum range of salary lies between 71,000 and 80,000.

#### 4.2 Appropriateness of Data for factor Analysis

KMO method represents the appropriateness of the data for factor analysis. KMO statistics lie between 0 and 1, and a value greater than 0.5 is acceptable (Kaiser, 1974). In the current study, the KMO value is 0.677, which is greater than 0.5. It indicates that the sample used for factor analysis is acceptable. The significance value is less than 0.5, so the Bartlett's test of sphericity is also acceptable. So, the data is appropriate for factor analysis.

#### 4.3 Factor Analysis

After testing, reliability and appropriateness of the data, the researcher carried out factor analysis to find out the related factors of the observed variables. Principal component analysis using the varimax rotation method is followed to carry out the analysis.

#### 4.4 Result of the Principal Component Analysis

Factor extraction and orthogonal method is used for factor rotation. Factor loading greater than 0.3 is considered significant, 0.4 is considered more important and 0.5 or greater are considered very significant (Hair et al. 1998). Again, Boyd (1985) stated that communality is the sum of the square of its factors loading. Communality values indicate the proportion of the variance in the response to the variables, which are explained by the identified factors.

To find out the factors of organizational climate twenty items are taken to consideration. Four factors named: Employee Involvement, Support of top Management and peer group, Innovation and creativity, and Flow of Information are emerged from the output with eigenvalue greater than 1( Table-2). These four factor results are generated after grouping the item with a factor loading of higher than 0.40 under a factor. The total variance is 69.652% which indicates that

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the four factor solution explain 69.652 % of the total variance. Other variables explain the remaining variance. Four factors of the organizational climate are discussed below:

**Employee Involvement**

This factor is represented by six variables of employee involvement with factor loading ranging from 0.762 to 0.520. The six variables of this component are- encourage risk taking, provides rewards to involvement in academic strategy, provides recognition in proportion to individual performance, motivating nature of work and maintains hierarchical procedures. The faculty members have the chance to involve themselves in - risk taking, motivation, academic strategy making, and creating academic atmosphere etc. This component explains 47.403% of total variance with Eigenvalues 9.481(Table-1). Shadur, Kienzle & Rodwell (1999) found that supportive climate ensure the employee involvement. The Cronbach's Alpha is 0.884.

**Support of top Management and peer group**

This factor is represented by seven variables of Support of top Management and peer group with factor loading ranging from 0.779 to 0.493. Those seven variables of this component are- emphasis on involvement in decision making process, warm relationship between peers and superiors, chance to involve in decision-making process, satisfactory team work, assistance from top-management, available peer support and welcome new ideas and changes. Organizational climate would be supportive through warm relationship between peers and superiors, involvement in decision making process, satisfactory team work, and assistance from top-management, available peer support etc. This factor explains 9.195% of total variance with eigenvalues 1.839. Jones, Teague & Rosen (2020) found out a positive relationship between Organizational climate and Support from peer group. The Cronbach's Alpha is 0.894.

**Innovation and creativity**

This factor is represented by four variables of Innovation and creativity with factor loading ranging from 0.816 to 0.502. Team work, challenging work environment, free of red-tapism and welcoming new and original ideas ensure an innovative and creative Organizational climate. This factor explains 7.556 % of total variance with eigenvalues 1.511. Ekvall (1996) found out challenge, idea support, freedom, openness ensure innovative and creative Organizational climate. The Cronbach's Alpha is 0.779.

**Flow of Information**

This factor is represented by three variables of flow of information with factor loading ranging from 0.888 to 0.462. The organization ensures proper flow of information by providing all information, clearly defined jobs and job procedures, and ease of accessibility to information on job flow. This factor explains 5.499% of total variance with eigenvalues 1.100. Free sharing of information ensures a communicative organizational climate (Callan, 1993; Hargie & Tourish, 2020). The Cronbach's Alpha is 0.757.

**Table- 2: Principal Component Analysis with Rotated Component Matrix and Commonalities**

Dimensions	Variables	Components				Communality	Cronbach's Alpha
		1	2	3	4		
Employee Involvement	Encourage risk taking	0.762				0.681	0.884
	Provides rewards to involvement in academic strategy	0.759				0.757	
	Easy-going work atmosphere	0.702				0.778	
	Provides recognition in proportion to individual performance	0.697				0.675	
	Motivating nature of work	0.696				0.747	
	Maintains hierarchical procedures	0.520				0.389	
Support of top Management and peer group	Emphasis on involvement in decision making process		0.779			0.783	0.894
	Warm relationship between peers and superiors		0.740			0.722	
	Chance to involve in decision-making process		0.714			0.856	
	Satisfactory team work		0.702			0.536	
	Assistance from top-management		0.695			0.696	
	Available peer support		0.495			0.619	
	Welcome new ideas and changes		0.493			0.561	
Innovation and creativity	Emphasis on teamwork			0.816		0.795	0.779
	Red- tapism			0.679		0.710	
	Challenging work environment			0.523		0.698	
	Consider new and original ideas			0.502		0.744	
Flow of Information	Provides all information about organizational activities				0.888	0.818	0.757
	Clearly defined jobs and job procedures				0.813	0.741	
	Ease of accessibility to information on job flow				0.462	0.623	
Eigenvalues		9.481	1.839	1.511	1.100	13.931	
% of variance explained		47.403	9.195	7.556	5.499	69.652	

Source: Author's study, 2023

### 4.5 Multiple Regression Analysis of the Data

**Table 3: Multiple Regression Analysis**

Variables	Constant Values	EI	STMP	IC	FI
$\beta$	0.142** (0.000)	0.318** (0.000)	0.223** (0.000)	0.239** (0.000)	0.174** (0.000)
t-value	5.926	30.167	24.421	28.694	21.988
$R^2$	0.986	Adjusted value of $R^2= 0.986$			
F-test	4421.749	Durbin-Watson value= 2.124			

\*\* Significant at 1% level,  $\beta$  is a coefficient effect, considered as the predictor of each of the variable of the study, EI= Employee Involvement, STMP= Support of Top Management and Peer Group, IC= Innovation and Creativity, FI= Flow of Information

Source: Authors' Study, 2023

The findings of the study (table -3) resulting from the computation of regression analysis is briefly explained below:

- The adjusted value of  $R^2$  describes that 98.6 % variability in the organizational climate can be explained by the independent variables of generated from PCA.
- The F-test value is 4421.749 and p-value is 0.000 for the data variables which represents the very well fit of regression model.
- The t-values of each factor are statistically significant at 1% level of significance, which indicate that the components found in PCA have influence on organizational climate.
- The regression coefficients of are statistically significant at 1% level of Significance

### 5.0 Implication of the Findings

Members of an organization accept HR practices and policies based on how the organization is run. Every organization needs to put employee performance growth at the top of their list of things to do. The implications of the study are- Promoting a friendly workplace and a supportive setting is no longer just a nice thing to do; it's an organizational necessity. Climate has a real effect on how motivated workers are. When employees like where they work, they are more loyal and productive. In educational institutions, the organizational climate is the environment that employees see and work in. It is affected by a number of psychological and physical factors, so it can change from one moment to the next and from one organization to the next. From what was said before, it's clear that the different things that affect the organizational climate of this institution of learning may be more or less important in one institution than in another, based on what's going on there. Organizational climate is a key part of making educational institutions efficient and high-quality. However, keep in mind that the atmosphere of educational institutions depends a lot on how the people who work there feel about their jobs, which is a key part of how these institutions work.



## 6.0 Conclusion and Recommendation

The main aim of this study is to explore the factors that affect the organizational climate at tertiary –level educational institutions. The results of the study showed four new factors of organizational climate, such as: 1) Employee involvement 2) Innovation and creativity 3) Flow of Information and 4) Support of top management and peer group. This result indicates that total variables explain 69.652 % of the organizational climate of private university in Bangladesh. Among the many things that affect whether an educational organization is efficient and effective, the organizational climate stands out in a key factor that helps create work environments where faculty member can do their jobs well and work together to reach the organization's academic goals. Management should listen to what the faculty members have to say and get feedback from them on a regular basis so that the work environment stays as healthy and good as possible. Besides that the recommendations to improve the organizational climate at private universities help to improve the things that aren't working well and build on the things that are working well, so that the effectiveness and efficiency of the productivity at work help them reach their goal. By focusing on organizational climate dimensions that affect organizational creativity and its sub-dimensions, this helps administrators come up with plans and policies for creating organizational climates that will help improve organizational creativity in universities. Even though the present investigation has some good things to say, it also has a few issues. First, the data is collected using the convenience sample method, which might limit how widely the results can be used. Second, the study's sample size, which is only 261, is another weakness of the study. Lastly, other aspects of organizational climate may be able to be changed in current situation. More research could be done with a large sample size at different organizational levels in other industries to measure the link between various dimensions of organizational climate. A study comparing public and private universities could also look at other factors linked to organizational climate.

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# Mango Export from Rajshahi: Supply Chain Hiccups and Solutions

Mst. Shuly Aktar<sup>1</sup>

## Abstract

This study focuses on the supply chain for exporting mangoes from Rajshahi, which faces multiple challenges due to the need for secondary supply chain activities. The study looked into the primary and secondary functions, such as the supply chain and the value chain, to investigate the loophole of failure to export mangoes. Mango growers, intermediaries, and export experts were interviewed in person and over the phone. It was seen from the outcome that demand uncertainty, a disorganized marketing system, grading issues, packaging issues, vapor heat treatment, aircraft space and freight charge, delivery time, and quality setting issues are major challenges in the Mango exporting supply chain. Though mango growers can deal with producing excellent mangoes utilizing fruit bagging technology, the problems include the need for contract formation and the sequential flow of good agricultural practices. To overcome the obstacles to the efficacy of contract farming, infrastructure development, a quarantine test center, and packing center, quality product and grading, government assistance and incentives, a vapor heat machine, the availability of cargo aircraft, a direct transport facility with a cooling van, and a well-organized marketing system are needed. This study identifies key hiccups in the supply chain and offers practical solutions to mitigate these issues, paving the way for a more efficient and successful mango export process from Rajshahi, Bangladesh.

**Keywords:** Mango Export, Supply chain, Value Chain analysis, Good Agricultural Practice (GAP).

## Introduction

Mangoes are not just tropical fruits; they are a symbol of culture, economic vitality, and agricultural prowess in many regions of the world. In Bangladesh, the city of Rajshahi, located in the northwestern part of the country, boasts a rich history of mango cultivation and export. Rajshahi is renowned for its succulent and flavorful mango varieties, including the famed "Himsagar" and "Langra." The mango export industry from Rajshahi contributes significantly to the nation's economy and global trade, making it a pivotal sector for economic growth and rural livelihoods.

However, despite its importance and potential, the mango export supply chain in Rajshahi faces a myriad of challenges that hinder its efficiency, competitiveness, and sustainability. These challenges, which we refer to as "supply chain hiccups," range from issues in production and post-harvest handling to transportation bottlenecks and regulatory complexities. Addressing these challenges is not only vital for the continued success of the mango export industry but also for

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ensuring that the benefits of mango cultivation reach all stakeholders, from small-scale farmers to exporters and the wider community.

These challenges, which we refer to as "supply chain hiccups," range from issues in production and post-harvest handling to transportation bottlenecks and regulatory complexities. Addressing these challenges is not only vital for the continued success of the mango export industry but also for ensuring that the benefits of mango cultivation reach all stakeholders, from small-scale farmers to exporters and the wider community.

The value delivery network that links producers, intermediaries, suppliers, and customers (Kotler and Keller, 2016), suppliers, transporters, warehouses, and retailers (Chopra et al., 2013) to acquire leverage strategic fit to enhance operational efficiency is referred to as the supply chain (Bowersox et al., 2013). The supply chain necessitates inbound or primary activities such as seamless manufacturing and outbound or secondary functions such as transporting the finished product to the value chain's ultimate customers (Porter, 1985). Customer value minus supply chain costs equals supply chain surplus or profitability. In other words, supply chain gain is the difference between consumer income and overall costs (Chopra et al., 2013).

Mango, a plant in the Anacardiaceae family, is grown in Rajshahi, India. Its supply chain involves farmers, intermediaries, and exporters. Exporters establish contract farming relationships, transport mangoes, and package goods, with incoming activities being easier.

Bangladesh is ranked ninth in the world in terms of mango production, but its position in terms of exports could be more prominent (RHRSC, 2015). On June 24, 2015, Rajshahi began exporting mangoes to UK shops for the first time, opening up a major economic opportunity for mango producers to profit from higher pricing for their finest quality fruit. In the beginning, Messers Barkullah Traders in the district town transported two tons of Langra and Fazli mango types to the Walmart Chain Super Shop in the United Kingdom, which is credited as the first export trip of Rajshahi mangoes to a prominent worldwide supermarket. The mangoes were being sent to the chain shop and other Bangladeshi markets in the UK through Deep Enterprise (The Daily Observer, 2015).

Mango exports decreased considerably in 2016, barely a year after they began shipping this delectable fruit, due to the failure of quarantine tests to meet European standards (Mirdha, 2016). Though Bangladeshi mangoes are consumed in the ethnic market, legal export of Bangladeshi mangoes began on May 17, 2015, making Bangladeshi mangoes available for consumption in the United Kingdom.

However, a sample of Himsagar, Langra, and Amrapali mangoes was sent to ASDA (a Wal-Mart subsidiary) in early 2014, followed by a Bangladeshi export-oriented business known as DIP International. The supply chain for mango export has encountered several problems in a short time since players in the supply chain have yet to meet several requirements imposed by importers (FAO, 2015).

Germ, bug, and spot-free mangoes with an average weight of 200 to 350 kilograms, a solid, colorful core portion within, and light sweetness are among the requirements for exportable mangoes (RHRSC, 2015). According to FAO (2015), exporters have primarily established three

requirements for mangoes from Bangladesh to be sold to European countries: a high-quality standard, on-time delivery, and adequate documentation.

Mango producers are also given a few rules for producing high-quality mangoes known as "good agricultural practices" (GAP). However, it is nearly impossible to meet all of the requirements exactly.

Farmers and mango exporters still need more communication when it comes to the quality of exportable mangoes. Farmers believe their gathered mangoes are tasty and standard enough to satisfy the worldwide standard, even though the international standard requires some particular criteria to be satisfied, and farmers need more appropriate information about the international mango production standard (RHRSC, 2015).

Bangladeshi farmers face limited negotiating power due to a lengthy supply chain and the dominant role of middlemen. They only occasionally add value to their products, resulting in modest income in the conventional farming model. To improve market reliability, farmers need more organization and support.

### **Objectives of the Study:**

This study aims to fill the gaps by determining what supply chain loopholes exist to export mangoes from Rajshahi. This research will focus on four objectives:

RO: (1) to investigate the disadvantages in the supply chain for exporting mangoes from Rajshahi.

RO: (2) to identify the supply chain management system for mango exporting.

RO: (3) to determine the financial benefit-cost ratio (BCR) for mango farmers and distributors.

RO: (4) to make a few solutions to alleviate the challenges connected with mango exporting.

### **Research Questions:**

The study's objectives were then refined into three research questions:

RQ: (1) What are the problems in the supply chain for exporting mangoes from Rajshahi, Bangladesh?

RQ: (2) What are the challenges in the supply chain for exporting mangoes from Rajshahi?

RQ:(3) How can the difficult challenges be handled so that the supply chain runs smoothly and mango exports from Rajshahi are accelerated?

### **Review of Relevant Literature**

According to Hasan (2010), as ethylene is the sole gaseous hormone that triggers fruit ripening, ethylene production must be inhibited to maintain climacteric fruits' safe and extended post-harvest life. Anti-ethylene chemicals have been utilized to extend the post-harvest life of horticultural commodities for a long time. Hassan (2010) also discovered that 4–16 percent of mango producers used pesticides to ripen the fruit. 4–20% of mango farmers utilized calcium carbide, followed by ripening (15–12 percent). Growers employed straw to enhance ripening in 4–32 percent of cases, while they mostly marketed unripe, mature-hard mangoes (60–92 percent). It was found that 8–20% of the "parties" were involved in chemical fruit ripening, whereas the value was 6-8% in the case of the wholesalers.

Ahmad (2021) stated that Bangladesh is the seventh-largest country in mango exports. However, it would like to earn a large amount of foreign currency from mango exports because it has a surplus capacity.

### **1. Mango Export Industry in Bangladesh**

Mango export plays a pivotal role in Bangladesh's agricultural economy (Hossain et al., 2018). Rajshahi, located in the northwestern region, is renowned for its mango production (Kabir et al., 2020). The region's unique mango varieties, including "Himsagar" and "Langra," contribute significantly to the nation's export revenues (Alam et al., 2019).

### **2. Supply Chain Management in Agriculture**

Efficient supply chain management is essential for agricultural products to reach global markets competitively (Simchi-Levi et al., 2008). In the context of mango export, effective supply chain management enhances product quality and reduces post-harvest losses (Haque et al., 2019).

### **3. Challenges in Mango Supply Chains**

Challenges in mango supply chains include post-harvest losses due to poor handling, packaging, and transportation (Roy et al., 2020). Logistical bottlenecks and inadequate infrastructure hinder the smooth flow of mangoes from farms to markets (Ahmed et al., 2017). Compliance with international standards and trade agreements poses regulatory challenges (Hossain et al., 2021).

### **4. Previous Studies on Mango Export from Rajshahi**

Prior research on Rajshahi's mango export sector highlights specific supply chain challenges. These studies emphasize the need for improved infrastructure, training, and regulatory alignment (Islam et al., 2018).

### **5. Supply Chain Solutions in Agriculture**

To address supply chain challenges, innovations such as blockchain and IoT have been proposed to enhance traceability and reduce losses (Li et al., 2020). Best practices in supply chain management include adopting technology for real-time tracking and inventory management (Rao et al., 2020).

### **6. Global Trends in Mango Export**

Global mango consumption is on the rise, with emerging markets showing increased demand (FAO, 2020). Successful export models from other mango-producing regions, such as India and Mexico, can offer insights into efficient supply chain practices (Chadha et al., 2021).

## **7. Policy and Regulatory Framework**

Government policies and regulations play a crucial role in mango exports. Trade agreements and compliance with international standards are essential for market access (USAID, 2020). A conducive policy environment is critical for industry growth (Haque et al., 2019).

## **8. Environmental and Social Considerations**

Sustainable mango cultivation practices are gaining importance, focusing on reducing environmental impact and promoting fair labor practices (Gomez-Luciano et al., 2020). Sustainable practices align with consumer preferences for ethically sourced mangoes (Kabeer et al., 2018).

## **Methodology of the Study**

### **Research approach:**

This study used an experimental research technique because the problem of exporting mangos from Rajshahi is a recent topic with little understanding. According to Cooper (2013), exploratory research is successful when researchers need more adequate concepts about the topic and when the inquiry area appears new. Exploratory research is an issue-solving study in which a researcher has only a rudimentary understanding of the topic (Nargundkar, 2012) and is looking for a broad understanding (Aaker et al., 2011). It aids comprehension when insufficient information is unavailable (Boyce, 2011).

### **Data collection**

Primary data was obtained using in-depth interviews with stakeholders involved in the mango export supply chain. For example secretary general of the Mango Production and Exports Association, Rajshahi.

A total of ten people were questioned, including the secretary of the Rajshahi mango production organization and three additional farmers with direct engagement in mango production and export. The secretary (interviewee 1), three farmers (interviewees 2, 3, and 4), the senior scientific officer and mango specialist export (interviewee 5), the importer (interviewee 6), the exporter (interviewees 7, 8, and 9), and the wholesaler (interviewee 10) all answered the five questions concerning supply chain difficulties and recommendations for mango export. The length of interviews on an average was 30 minutes dated on July 2021. The responders were all between the ages of 30 and 65. Following a pre-determined questionnaire, the corresponding author served as the interviewer.

During the interview, mango producers participating in export were physically visited to inspect the bagged fruit. A mango export specialist and a higher-ranking government official were also interviewed. With the permission of the ten interviewees, all ten interviews were taped. After that, the ten audios were converted to textual form.

The audio scripts of ten interviews were prepared and arranged from interviews 1 to 10. The audio was then matched with the written texts. The question-and-answer session lasted 2 to 3 pages, for 30 pages with single line spacing. Only the replies of the interviewees about obstacles in the supply chain to export mangoes have been documented, keeping the study's problem in mind.

In addition, the ideas of the responders have been treated with a lot of care and respect. In addition to the exporter's needs for quality, timeliness, and documentation, the interview yielded additional useful insights. As a result, the data analysis attempted to close the gap between importers and stakeholders in the supply chain for mango exports from Rajshahi.

Secondary data relevant to the issues was sourced from electronic and other sources. Books, articles, and news from related publications have all been reviewed. Furthermore, papers from farmers, such as cooperatives connected to mango farming, previous documentation for exporting, and government certification for mango production oversight, have been extensively examined to detect the problem on the ground.

### Result and Discussions

Bangladesh's mango export volume nearly tripled in the 2020–21 fiscal year, reaching 791 tons from 279 tons the previous year.

This rise indicates that the country's regulators, mango growers, and exporters all correctly took steps, resulting in a considerable increase.

**Table 1: Bangladesh's Mango Export volume.**

Fiscal year	Bangladesh's mango export (in tons)
2016-17	309
2017-18	231
2018-19	308
2019-20	279
2020-21	791

**Source:** Dhaka Tribune 18.07.2021

However, in the context of the \$1.5 billion worldwide mango trade, Bangladesh's export increase is negligible, given the country's great potential as the seventh-largest grower of the luscious edible stone fruit.

On the other hand, Bangladesh's potential remained virtually untapped for many years since authorities failed to adopt good agricultural practices (GAP), a requirement for exporting mangoes to global markets.

Many important export markets have been effectively seized by Bangladesh's South Asian and Southeast Asian neighbors, such as India, Pakistan, and Thailand. Mango has long been a lucrative export earner for these nations. Bangladesh earned barely \$50,000 in mango exports this fiscal year, compared to \$101 million for Pakistan (the world's fifth-largest mango grower) and \$137 million for India (ranked first in mango production in the world).

**Table 2: Bangladesh's Mango Export Income.**

Earnings from mango exports in 2020-21	Amount in \$
Thailand	\$734m
India	\$137m
Pakistan	\$101m
Bangladesh	\$50,000



**Source:** Dhaka Tribune 18.07.2021

Bangladesh no longer wants to be satisfied with such low fruit export volumes, as some of the country's sweetest and most delectable kinds have long been cultivated, with annual national output reaching almost 1.5 million tons this year.

### **Challenges in the supply chain to export mangoes from Rajshahi** **Quality related challenges**

The first interviewee, the secretary of the mango production association and a pioneer of mango export in Rajshahi stated that export-quality mangoes had been produced since 2016 using good agricultural practices (GAP). However, authorities in our country need to continue to monitor GAP properly. However, 90 percent of the time, GAP circumstances may be accommodated to yield high-quality mangoes.

The second respondent stated that every effort is made to produce high-quality mangoes for export, but that the amount is reduced by 10% in the end due to rigorous sorting and grading by the exporters and that they are capable of fully documenting documents.

The third respondent, a farmer, and a middleman stated that he could provide mangoes to exporters on time per GAP guidelines. The GAP requirements are stringent, yet export quality still needs to be achieved.

The fourth interviewee, a farmer and secretary of the local Mango and crop protection association stated that the mangoes from Rajshahi are delicious, sweet, and plentiful but that they are unsure about sending the number of mangoes due to the lack of a long-term contract with the exporters or intermediaries.

The fifth respondent, a senior scientific officer and mango export expert at the mango research center stated that farmers have been utilizing the fruit bagging technique by GAP since 2015, resulting in the production of 90% of exportable mangoes. However, it is conceivable that the quarantine will not be tested in Rajshahi.

### **Documentation is kept up to date throughout the mango manufacturing and export process.**

All respondents say they can maintain a record of the mango production process and export-related paperwork.

### **On-time delivery of mangoes to the exporter**

All of the farmers get to a point where they can ship mangoes on time to the exporters, who then send mangoes abroad.

### **Other difficulties**

According to the first interviewee, uncertainty regarding the market for exportable Mango is a big disadvantage. For example, roughly 7 tons of mangoes were packed in the unique fruit bag, but how much would be shipped this season is unknown. Furthermore, government authorities must be better aware of this problem.

According to the third interviewee, the primary issue is ambiguity regarding the quantity required. Communication gaps with exporters and farmers, a need for coordinated efforts to manage fruit flies and other pests, and natural blemishes on mangoes are also considered obstacles.

When challenged about the government's lack of sincerity, the fifth interviewee, a government official, and mango export specialist, answered that the responsible authority is doing everything possible to speed up mango exports from Rajshahi.

Farmers are quite effective in producing and delivering exportable mangoes to intermediaries. However, they need help in controlling demand unpredictability and completing needed tests, which are beyond the farmers' means in the mango export supply chain.

The expert also stated that the farmers are responsible for engaging with field officials and the mango research unit about quality mango production and export issues.

All the farmers were pleased with the price per kilogram they received from the exporters, which ranged from BDT 75 to 100, and it costs approximately BDT 20 to 40 per kg of Mango to be shipped.

The fifth interviewee acknowledged the critical issue when asked about the demand uncertainty for exportable quantities of mangoes. Suppose farmers, exporters, the export promotion bureau, or any other stakeholder in the mango export chain is still determining the number of exports. In that case, he believes they should arrange for crop insurance to mitigate the risk of their harvest.

**Table 3: Response of the interviewees concerning mango production and export.**

Respondents	Age	Supply chain functions	Perceptions	Perceptions
Interviewee 1	40-45	Quality, variety testy mango production	88% positive	12% negative
Interviewee 2	40-45	Documentation ability	95% positive	5% negative
Interviewee 3	40-45	Timely delivery to traders and exporters	85% positive	15% negative
Interviewee 4	50-55	Demand and supply uncertainty	50% positive	50% negative
Interviewee 5	40-45	Good agricultural practice (GAP)	85% positive	15% negative
Interviewee 5	40-45	All sanitary, phytosanitary, Quarantine protocol test	60% positive	40% negative
Interviewee 6	30-40	Export license and procedure	70% positive	30%negative
Interviewee 7	35-45	Sufficient cargo space and airfreight charge	60% positive	40%negative
Interviewee 8	30-40	Packaging and grading quality	65% positive	35%negative
Interviewee 8	30-40	Availability of vapor heat treatment, i.e a prerequisite of mango export	55% positive	45% negative
Interviewee 9	40-45	Government assistance, incentives, and priority	67% positive	33%negative

Interviewee 9	40-45	International delivery time	66% positive (28-30 days required)	34%negative
Interviewee 10	50-60	value addition	73% positive	27% negative

If there are not enough exportable mangoes this year, the whole mango export supply chain will be seriously impacted.

Because there is no infrastructure to justify such chemical testing, all respondents agreed that a quarantined test is critical to trace the quality of the exportable mangos from this region. Furthermore, because the marketing management of mango exports in Rajshahi has yet to be established, the marketing system for exportable mangoes needs to be structured.

### Mango Supply Chain in Bangladesh

The manufacturing and marketing of mangoes involve several players. The players in the movement of goods from farm to market (traders, processors, and exporters) are represented by supply chains. Figure 1 depicts the mango supply chain and market players in Bangladesh. Many actions are involved in getting excellent mangos to the customer, and a diverse group of players carries them out. Research and extension departments, input providers, producers, merchants (collection, wholesale, and retail), and consumers are the key participants in the mango supply chain.

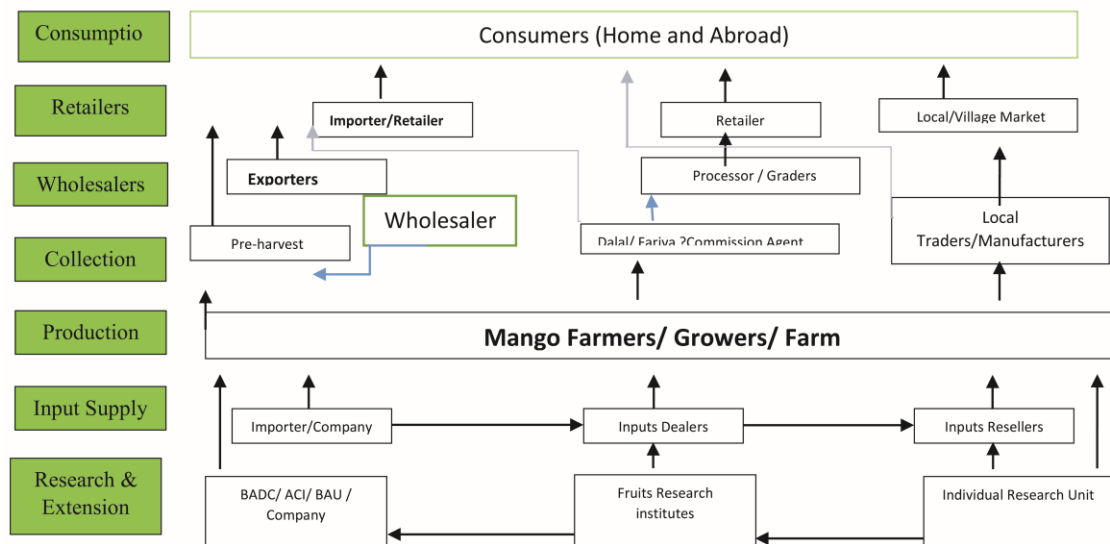


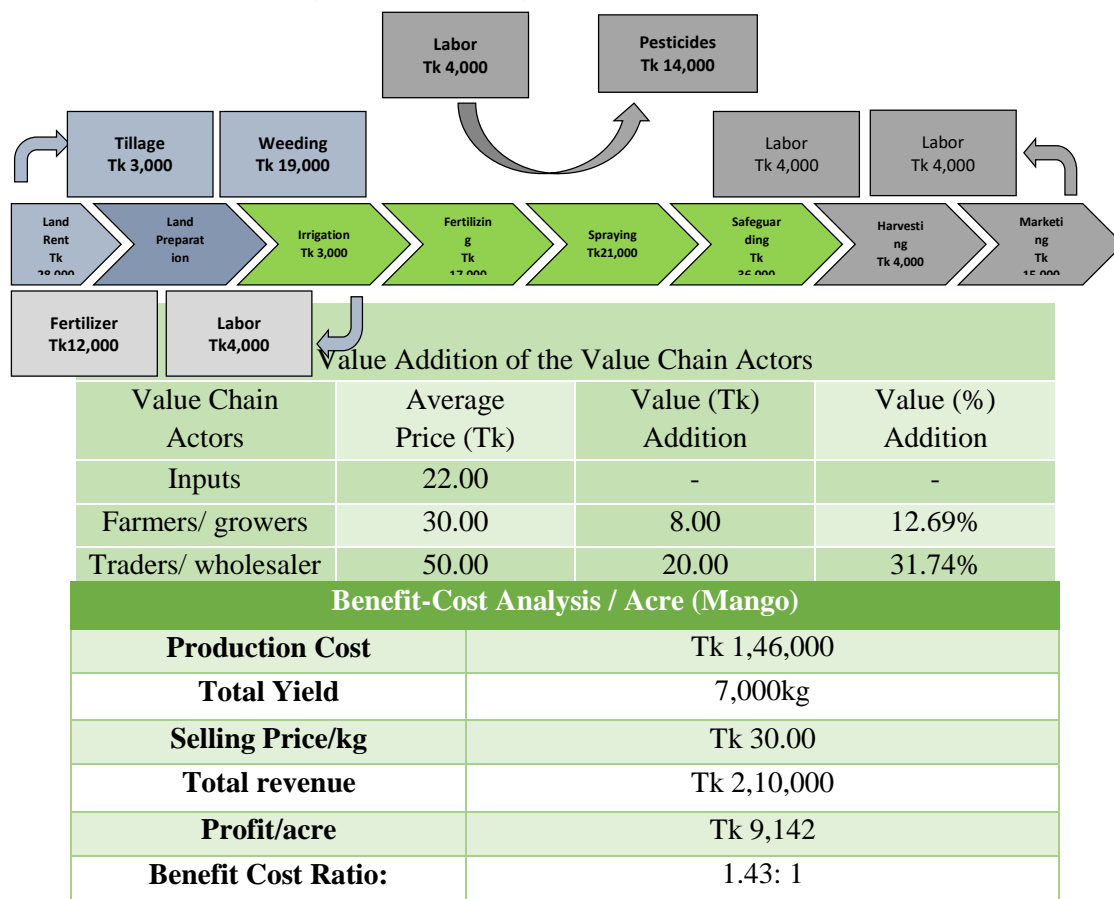
Figure 1. Mango Supply Chain Management (Adopted from Alom-2018)

### Value chain analysis

Farmers who do not lease their mango trees to wholesalers or brokers sell mangos at the farm gate to home consumers or retailers, while others sell harvested mangos in the local market. The major issue in the supply chain is farmers' need for market access. Other issues in the chain include inadequate packing, overcrowded transportation, low producer prices, and wholesale

monopolies. Brokers and wholesalers, according to the majority of farmers, have the most impact on the supply chain. Farmer cooperatives, the elimination of intermediaries, direct interaction between farmers and wholesalers, and the establishment of a processing sector can all help to increase pricing and market access.

The value chain for Mango is shown in Figure 2



Source: Result of the Survey, 2021

The farmer's overall production cost was Tk 1,46,000, while the total output on one acre of land was Tk 7,000. The average selling price of Mango among farmers was Tk 30.00 per kilogram, with a total cost of Tk 22 per kilogram. As a result, the farmer's value addition was Tk 12.69 per kg, and the mango farmer's financial benefit-cost ratio (BCR) was 1.43:1. Although consumers paid Tk 85.00 per kilogram, the overall value added by value chain players (farmers, merchants, and retailers) was Tk 63 per kilogram. The merchants' portion of the total income of Tk 85.00 was the greatest, at Tk 35.00, accounting for almost 55.55 percent of the total added value. The next significant margin was Tk 20.00, produced by merchants, accounting for nearly 31.47% of the total added value. The farmer had the smallest profit margin, Tk 8.00, accounting for only 12.69 percent of the total added value.

**Ways to resolve the issues to accelerate Mango exporting from Rajshahi**

The first interviewee suggested that the effectiveness of GAP must necessarily resolve the challenges associated with exporting mangoes from Chapainawabganj. Rajshahi and Chapainawaganj can be prioritized to produce mangoes for export, along with an arrangement of crop insurance to offset the risk of their harvest.

The third respondent acknowledged that three grading quality levels, such as grades A, B, and C, might be useful for mangoes to reduce their losses, as rejected mangoes by exporters result in significant losses. Contract farming, in particular, and appropriate deed maintenance among the parties involved in export are critical. In addition to grading and contact farming, adequate attention from concerned agricultural officials about promoting Rajshahi mangoes overseas is critical to overcoming the obstacles associated with mango export.

According to the fourth respondent, exportable mangoes must be packaged in the garden, and a quarantine test center should be provided in the Rajshahi district.

Agricultural officials must inform farmers about scientifically sound, up-to-date methods for harvesting high-quality mangoes.

According to the fifth interviewee, demand uncertainty may be overcome by addressing three concerns. Firstly, contract farming for the following year must be finished after the current harvesting season. Second, a particular work plan should be developed every year to ensure that the contract with the farmers is maintained by contract law. Finally, a separate device will oversee the entire process from mango production through export.

The remaining interviewees (6th to 9th) discuss the difficulties of exporting mangoes from Bangladesh to other countries. They identified issues with Mango exporting from Rajshahi, such as quality, packaging, grading, aircraft space and charge, delivery time, vapor heat treatment, transportation, export incentives, finance, and other government export assistance, and so on.

Furthermore, the expert emphasized the importance of creating an organized export marketing structure in the district, which needs improvement. In addition, effective training for mango farmers to improve their mango farming efficiency and the implementation of GAP can help alleviate supply chain problems for mangoes exported from Rajshahi.

**DISCUSSION****Drawbacks in the supply chain to export mangoes from Rajshahi**

Natural catastrophes, the short duration of mangoes, a lack of high-water treatment, heavy chemical usage to protect, and ripe mangoes are all mentioned by RHRSC (2015) as obstacles in producing and exporting mangoes from Rajshahi. Other challenges in the exporting of mangoes include insufficient packaging and transportation systems, farmers' ignorance of export conditions, exporters' knowledge gaps about Bangladeshi mangoes, ineffective research and extension initiatives to promote mangoes, fewer air cargoes, insufficient government cooperation, and a lack of appropriate principles regarding mango export.

For mango export, three conditions were imposed: quality mangoes, appropriate paperwork for the whole mango production and exporting process, and prompt transportation of the consignment (FAO, 2015). All three directions are elements of RHRSC's (2018) Good Agricultural Practices (GAP) for mango production and export in Europe, which consists of 26 principles.

They include obtaining permission from plant quarantine; listing farmers for contract farming via registered forms from allowed exporters; ensuring safe and chemical-free quality mangoes under contract farming; adhering to GAP principles from the start of mango production to the end of export; and taking adequate measures to rid mangoes of fruit flies with proper sanitation.

Making satisfactory arrangements for controlling mango stone weevil and mango pulp weevil; conducting a cleanliness campaign in the mango orchard every year; and collecting and packing mangoes so that flies do not attack mangoes should all be done in such a way that flies do not attack mangoes. In addition, fruit bagging technologies must be maintained to international standards, the best tools and procedures must be used in the garden, and a cooling van must be used to carry mangoes from packing to export (RHRSC, 2018).

Ensuring upazila team supervision of the entire cooling process; adhering to HACCP principles for collecting, sorting, grading, packaging, storing, and transporting mangoes; maintaining the tidiness of the farmers by HACCP; not transporting other goods in the same transport as mangoes; ensuring the maximum residue limit test; specifying price with the farmers before mango shipments; (RHRSC, 2018).

Furthermore, the concerned cooling chamber official will complete the required documentation; the consignment will be shipped directly to the airport, and the respective airport authority will complete export formalities for the cargo airline; every Mango must pass the export quality test; after exporting, the remaining mangoes will be marketed in the domestic market as premium quality mangoes, followed by a premium quality mango (RHRSC, 2018).

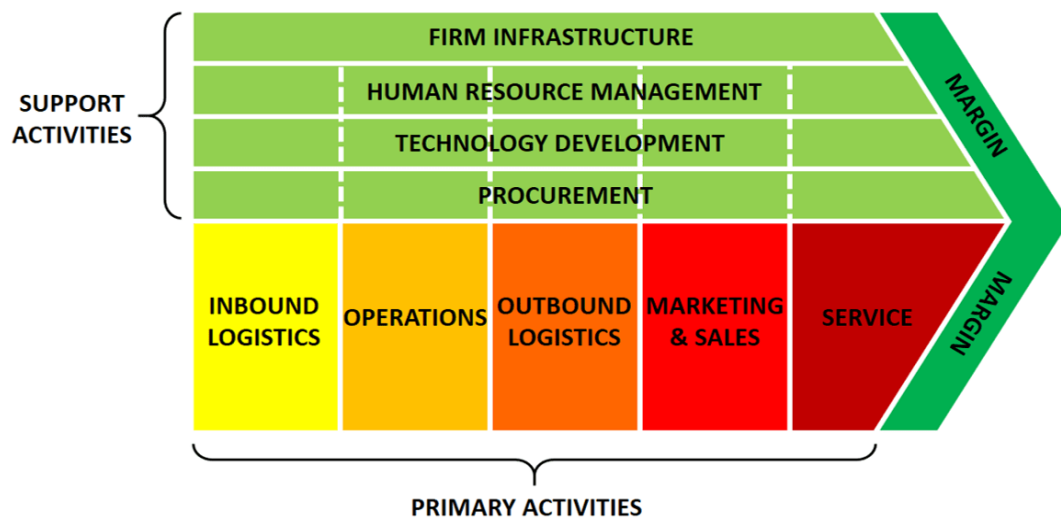
Mango growers in Rajshahi can harvest exportable mangoes by GAP principles; however, infrastructure and facilities for transporting quality mangoes to exporters by GAP have not yet been fully built. As a result, the absence of supportive actions to promote mango exports is the primary supply chain problem.

Porter (1985) proposed the value chain to comprehend supply chain problems in exporting mangoes from Rajshahi. Farmers are capable of producing exportable mangoes, according to the current study, but they need appropriate incoming and outgoing logistical assistance, which they need. Furthermore, a particular advertising effort to capture the global market needs to be improved, necessitating special services from concerned domestic and international government authorities.

Besides the main supply chain activities, secondary supply functions such as mango collecting, facility construction, and employing specialists with contemporary technology-based mango farming must be updated. As a result, key value chain activities associated with transporting mangoes abroad impact the existing supply chain.

### Ways to overcome the problems associated with mango exporting

From gathering excellent mangoes in Rajshahi to shipping to the airport, the complete secondary supply chain should be designed. All parties involved in the supply chain must accept their costs to produce a supply chain surplus. According to the RHRSC (2017), fruit bagging technology entails utilizing a specific white bag for colorful mangoes and a brown bag for other mango types. Those two research-based bags enclose the mangoes, producing chemical-free and fly-free fruits. However, if the other principles of Good Agricultural Practices (GAP) are followed, the quality of Mango output may improve. Farmers would be unable to reap the benefits of fruit bagging technology if an international marketing system for Mango is not created, an organized mango marketing system in Rajshahi is not assured, and enough transportation for mango carriers is not supplied.



**Figure 3.** Michael Porter's Value Chain analysis related to the supply chain in 1985.

The solutions to the difficulties in the mango export supply chain are strongly recommended in this study. Contract farming, in particular, is needed to alleviate demand uncertainty, as is the establishment of a quarantine test facility in this region with the necessary infrastructure. Furthermore, a mango packing center at the mango farm, direct transportation from the origin to the airport with cooling van capabilities, and a well-organized marketing system are necessary to ensure a smooth supply chain for exporting mangoes from Rajshahi.

**Besides these, for further development of the process, certain recommendations might be given based on the research survey. These include:**

- To gain access to supermarkets in industrialized countries, the quality of the product must be high.
- The packing of Mangoes has to be upgraded methods for handling, grading, and transportation.
- It will be more convenient for Mango exporting if customs houses are fully automated.
- To make it easier to use electronic/digital documents for mango exporting.
- Infrastructure development in port regions

- Government and business chambers should collaborate more closely to establish a better business climate.
- A single window that connects all of the participants participating in the business process
- Improve the speed with which inspection certifications are issued.
- Collaboration between government and business chambers should be improved to create a more favorable business climate.
- Form a National Task Force on Trade Facilitation.
- Publish trade-related information, norms, and processes (including online).
- The government introduces a freight plane to transport Mango.
- Finally, if the country's currency is devalued, it will be able to gain a large amount of foreign exchange by exporting Mango.

### **Conclusions**

The above information shows that the supply chain for exporting mangoes from Rajshahi is more challenging due to the need for secondary supply chain facilities and infrastructure. Other problems include the need for more contract farming and the inability to implement all GAP requirements fully. Nonetheless, if provided with enough instructions, mango growers are capable of meeting the requirements for producing world-class mangoes. Adequate supply chain help for export mangoes may improve supply chain efficiency, but players are doing their best. The government, researchers, exporters, importers, and intermediaries must work together to solve the obstacles in the mango export supply chain so that mangoes from this region may be sent to other countries without difficulty. Mango exports would undoubtedly improve Bangladesh's economy, delivering a breakthrough in the region's living level as good mangoes are available to meet domestic demand. For the benefit of the mango farmers in Rajshahi, a further study involving more producers, global traders, scientists, high government officials, exporters, and importers is necessary to highlight the difficulties in the supply chain for exporting mangoes as well as to resolve the present obstacles the farmers are facing.

### **Limitations of the Study:**

The study on the mango export supply chain in Rajshahi faces several challenges, including limited data availability, a specific sample size, geographical scope, temporal factors, language and cultural barriers, resource constraints, external factors, generalizability, subjective opinions, and potential future developments. The findings may not fully represent the diversity of challenges faced across the entire industry, and the study may not consider external factors like global economic fluctuations or geopolitical issues.

### **Future Scopes of the Study:**

The study aims to track supply chain challenges and their effectiveness over time, compare the mango export supply chain in Rajshahi with other regions, explore market expansion opportunities, integrate technology, assess environmental impact, monitor regulatory changes, engage stakeholders, analyze consumer preferences, assess infrastructure development, enhance



supply chain resilience, and analyze socioeconomic impacts. It also provides policy recommendations to support growth and competitiveness, including regulatory reforms and investment priorities. The study also explores technology integration, environmental impact assessment, regulatory changes, stakeholder engagement, consumer preferences, infrastructure development, supply chain resilience, socioeconomic impacts, and sustainable practices.

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# Corporate Social Responsibility and Welfare Analysis: A Review from Economics Perspective

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## Abstract

This study attempted to analyse the processes by examining the relationships between corporate social responsibilities (CSR), households, and social welfare in economic fields, using existing theory to evaluate how CSR provides financial benefits to businesses. CSR contributes in the areas of social, economic, political, and cultural enhancement to emphasise welfare. The corporate sector has used a broader context to boost economic and social development and establish a standard of living for every citizen. This study contributes to a better understanding of CSR concepts by focusing on social welfare. However, CSR has significance for national development due to its focus on research and development. The natural point of CSR supports attempts to limit the establishment's environmental consequences; on the other hand, CSR has played an important role in the recovery from the economic crisis. The theoretical contribution of this study indicates business theories related to society and business ethics. Existing literature has benefited through the enhancement of business ethics, business strategies, business communications, and interaction with government national policies.

**Keywords:** Corporate Social Responsibilities, CSR Duties, Economics, Managerial Economics, Welfare Gain

## 1. Introduction

In the case of least developed countries (LDCs) and developing nations, corporate social responsibility (CSR) plays a crucial role in increasing socio-economic development and welfare. Corporate social responsibility (CSR) is dependent on financial and non-financial institutions such as banks, non-governmental organizations (NGOs), and other production and savings institutions. It is said that a nation's growth depends on its manufacturing industry, its capital, and its money market. The role of the stock market and the money market is facilitated by the efficient functioning of its financial institutions. Every nation has policies and positions for the economic growth and development of the country. The corporate sector has used a broader context to boost economic and social growth and establish a standard of living for every citizen, household, business person, and government. Its significant as the means of economic commotion, its deals with capital formation, export, import, credit employment generation, etc. to states and people, households, and businesses is unquestionable (Kim, 2019; Derchi et al., 2021). In all economic systems, the corporate sector has the foremost role in planning and implementing economic activities. The major impact of private enterprises on workers, consumers, societies, the community, rivals, business associates, investors, shareholders, governments, and others is being increasingly recognized. It is also becoming progressively clear that by recognizing the impact their decisions have on the planet at large, corporations

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may actually add to their prosperity and overall societal wealth. Both business assessments of public sentiment and corporate behaviour show a greater understanding of the relationship between business and welfare (Crespo et al., 2015; Shu et al., 2021). Furthermore, speculators and financial business sectors are commencement to recognize that CSR exercises that amalgamate more extensive educational disquiet into the business system and execution are substantiation of good administration. Aside from giving benevolent firms an advantage in magnetizing great clients and representatives, acting consistently on the way to workers and others in the public eye be able to facilitate firms and their stockholders build an incentive.

Moreover, Jankalová and Jankal (2017), Nyuur et al. (2019) and Marakova et al. (2021) indicated that the comparative advantage of corporate social responsibility could be achieved by countries as well as businesses. Governments and companies in much of the developing world recognize that their eligible dependents' positions and access to capital are progressively more reliant on being seen as respecting the highest international standards and maintaining the quality of living of all people in both urban and rural areas. However, the definition of CSR was first developed by Bowen (1953). He defined social responsibility is an obligation of entrepreneurs to seek approaches to make such an assessment or carry out such actions that are pleasing in terms of the goals and values of our society. Corporate social obligations fall into three principal regions: financial; social; and natural or environmental. Organizations ought to zero in the monetary region on creating systems for financial development and limiting monetary effects. The goal of the social area should be to limit the negative effects on the social economy, labor well-being and security, the fight against debasement, and personal satisfaction. The natural point of support tries to limit the ecological impacts of the establishment. Environmental issues, for example, have played an important role in ensuring welfare (Maas & Reniers, 2014; Cohen & Simnett, 2015; Ji et al., 2022). The CSR has played a significant role in recovering from the economic crisis (Adam & Shavit, 2008). However, the key aim of this study is to analyze the interactions between CSR and social welfare. The specific objectives are developed by the following aspects: a) to define the concept and principles of CSR, b) to analyse the role of CSR in the case of household welfare, c) to define CSR and conduct a principle analysis for social welfare. In addition this study contributes to academic theories, existing literature, business strategies, understanding business responsibilities and attaining economic efficiency based on CSR activities.

However, this study explores the relationship between CSR activities and their impact on societal welfare from an economic standpoint. Even though the body of literature has advanced our understanding of the implications of corporate social responsibility (CSR), there is still a clear research gap that this study aims to fill. A significant area of study deficiency is the in-depth analysis of the economic processes by which corporate social responsibility endeavours impact the welfare of society as a whole. Even while CSR has been shown to provide positive externalities in numerous studies, a more detailed examination of the precise economic channels that these benefits flow via is still required. Policymakers, corporations, and society at large must comprehend the specific mechanisms by which corporate social responsibility (CSR)

influences economic indices, such as employment, income distribution, and total economic growth. Furthermore, there is a lack of study on how different companies and sectors are affected differently by corporate social responsibility. When implementing CSR efforts, different industries may encounter different possibilities and obstacles. It is important to understand these sector specific dynamics in order to create CSR methods that maximise positive outcomes. Last but not least, although firms frequently see corporate social responsibility (CSR) as a voluntary practise, little research has been done on how legal frameworks and governmental regulations influence and reward CSR activity. Examining the influence of legal frameworks on the efficacy of corporate social responsibility endeavours might yield significant knowledge regarding the ideal equilibrium between obligatory and optional CSR measures. The study "Corporate Social Responsibility and Welfare Analysis: A Review from an Economics Perspective" highlights certain research gaps, including the need for a more thorough investigation of the economic mechanisms, potential trade-offs, dynamics unique to a given industry, and the influence of regulatory frameworks on the relationship between societal welfare and CSR activities. Filling in these gaps will help create a more thorough and sophisticated understanding of the financial effects of corporate social responsibility (CSR), which will benefit both academic study and real-world policymaking.

## 2. Literature Review and Understanding of CSR

Corporate social responsibility (CSR) is an organization's obligation to society and the environment for the effects of its decisions and actions through basic and moral conduct that is consistent with the bearable turn of events and the welfare assistance of society; considers the presumptions for partners; is in accordance with relevant law and predictable with global standards of conduct; and is coordinated all through the organization (Fei and Ranis, 1963; Hamada, 1969; Richardson, 1997; Dahlsrud, 2008; Sheehy, 2015). A host of other names are also used for CSR, such as corporate accountability, corporate responsibility, corporate integrity, corporate citizenship or preservation, and responsible enterprise are all included (Costa & Menichini, 2013; Davidson, 2016). There is a tendency to refer to it as “responsible competitiveness” or “corporate sustainability” as CSR concerns is gradually incorporated into modern corporate practices (Fifka, 2009; Van Marrewijk, 2003). If we break down the cutting edge corporate business, we see that there is a viable corporate strategy for upgrading the social duties to ensure a financial turn of events and decrease the imbalance. Corporate social obligation is an idea that has become prevalent in business announcements. Each enterprise has a strategy regarding CSR and delivers a report each year itemize its actions. Also, every one of us professes to have the option to make out corporate movement that is socially faithful and action that isn't socially heedful. CSR is a term whereby businesses voluntarily include social and environmental disquiet into their business actions and in their relationships with their stakeholders this statement was supported by Fox (2004), Bergkamp (2002), Van Marrewijk et al. (2003), Dahlsrud (2008), Sheehy (2008). Every enterprise has a procedure concerning CSR and produces a report yearly listing its activities. Likewise, all of us proclaim to have the choice to see corporate development that is socially responsible and activity that isn't socially mindful.

As per Fox (2004) and Bergkamp (2002), CSR is a term by which organizations deliberately incorporate social and ecological worries into their business actions and into their relationships with their partners.

However, the broadest idea of corporate social duty concerns the connection between worldwide nations' legislatures and distinct individuals and societies and the coordination of public policies (Steurer et al., 2013; Dima et al., 2016; Almatrooshi et al., 2018). The idea is all the more privately worried about the relationship between an organization and the local community wherein it lives or works. The partnership between a company and its stakeholders is another concept of CSR (Doane & Abasta-Vilaplana, 2005; Ali, 2017). The scepticism of welfare is mainly clarified by an enduring idea of the role of business in a society that contradicts the idea expressed in the CSR definition. Whatever, Carroll (1979) distinguished between 4 kinds of corporate social duties: monetary, lawful, moral, and optional. He was introduced the contention that organizations wishing to adequately take part in CSP were expected to have (a) a basic definition of CSR; (b) an perceptive of the issues for which CSR existed; and (c) a specification of the values of sensitivity to the issues. From this point of view, an essential beginning stage for viable corporate social performance (CSP) is the absorption and reception of the fundamental sorts of CSR. The principal classification that Carroll (1979) outlined is a financial obligation, involving, for instance, giving a quantifiable profit to proprietors and investors; making occupations and reasonable compensation for labourers; finding new assets; ICT advancement, and the making of new items and administrations. Business, from this viewpoint, is the essential monetary unit in the public arena and all its different jobs are predicated on this crucial suspicion. Moreover, several tasks have been developed in the case of CSR principles, definitions, and others, but nobody has ever been able to review the interaction between CSR and welfare analysis in the perspective of economics. That's why this study was able to create a new addition that incorporates fields with a better understanding of CSR and social welfare.

### **3. Methodology**

The current study implies to analysing the interaction between corporate social responsibility and social welfare. A systematic literature based theoretical methodology has been developed to complete this study. The concepts of this study have been developed from authentic books, journals, and other reliable sources. This study considers a systematic literature review and the systematic literature review is a meticulous and comprehensive approach to synthesizing existing knowledge and insights in business research. By using a systematic and structured methodology, it goes beyond the limitations of a standard literature review and ensures a rigorous and transparent procedure in assessing the body of literature already in existence on a particular business-related topic. A systematic literature review is a strategic technique that is useful in business research to get a comprehensive grasp of the present state of knowledge, identify research gaps, and guide future paths in the field. A clearly defined research question or purpose serves as the starting point for the process, directing the methodical search and selection of pertinent studies. A systematic literature review, in contrast to a narrative review,



uses clear inclusion and exclusion criteria to reduce biases and improve the dependability of the results. By completing this study, a new addition will be made to the existing literature.

#### **4. Analysis the Principles of CSR**

Due to the obvious confusion surrounding the existence of CSR activity, it is difficult to identify CSR and be positive of any such activity. Therefore, it is imperative that such behavior can be detected and we agree that three essential principles together comprise all CSR operations. The first Principle is sustainability; sustainability explains the effects of current measures on future options are addressed in the concept of sustainability. If resources are used in the present, they are no longer available for use in the future. Therefore, if the resources are depleted in quantity, this is especially important. If an organization is to be viewed as part of a larger social and economic structure, its belongings must be considered not only for evaluating the cost and value generated in the present but also for the company's future. The second principle is accountability where accountability is concerned about a substance recognizing that its exercises affect the rest of the world and consequently perceiving liability regarding the results of its activities (Tamvada, 2020). Subsequently, this definition deduces a dimension of the results of moves initiated inside the alliance, both inside and tenuously. More specifically, the definition implies that all parties affected by those actions are aware of the measurements. Accountability includes the following features: a) relevance to the users of the supplied material. b) Understand the strengths of all involved parties. c) Reliability in terms of measurement precision, affect representation, and freedom from bias. d) Comparability, which means reliability, both over time and between various institutions. However, third principle of CSR is transparency; as a concept, means that the external affect of the organization's activities can be verified from the coverage of that organization and that the actual details are not masked within that exposure (Giuli & Manzo, 2009; Kim & Lee, 2018; Rahman & Majumder, 2021). Thus, all the consequences of the organization's behaviour, including external impacts, should be clear to all through the use of the information generated by the reporting structures of the organization.

##### **4.1 Why CSR become Significant for Social Welfare?**

Some several significant variables and factors have contributed to growing attention being paid to the position of companies and CSR. That encompasses globalization of CSR and economics. With its emphasis on cross-border trade, multinationals, and overall supply chains, international trade is rapidly raising CSR disquiet about, among other things, human resource management activities, defence of the ecology, and health (Higgins and Debroux, 2009). According to Maksum (2021) and LeBaron et al. (2022), CSR has cooperate a decisive role in assessing the effects of business on working conditions, rights of labor, enhancement of public goods, control of environmental regulations and others. Moreover, CSR brings interaction of corporate organization and society. Society means of which there are living and non-living elements. However, an increasing number of scholars have recognized that organization operations affect the overall environment and have indicated that one of the financial information should be to report on the effects of an organization in this regard. Corporations are, therefore, an integral part of making society more productive (Moon, 2007; Brilius, 2010; Hildebrand et al., 2017).

CSR and Governance build the relation between governments and inter-governmental bodies, such as the United Nations, the “Organisation for Economic Co-operation and Development (OECD),” and the International Labor Organization (ILO), have drawn up several compacts, declarations, guidelines, rules, and other tools that establish criteria for what they deem appropriate business behaviour. CSR instruments also represent internationally-agreed human rights, environmental and anti-corruption priorities and rules.

In the case of entrepreneurship development, questions regarding power and transparency are posed by the sheer scale and number of companies and their capacity to affect political, social, and environmental processes compared to governments and civil society. Also, small and medium-sized enterprises (SMEs), which together constitute the largest single employer, have a huge influence (Jenkins, 2004; Morsing and Perrini, 2009; Ikram et al., 2019). CSR and communications interpreted advances in networking technologies, such as the web connection and cell phones, make it flexible for business behaviours to be monitored and addressed (O’Hair, 1995; Varner, 2000). Internally, management, monitoring, and progress can be encouraged by this. NGOs, and social media, will rapidly analyze and outline market carry out that they see as either questionable or consummate externally. New communications technology provides opportunities for developing dialogue and collaboration in the CSR context (Nicolae and Sabina, 2012; Du et al., 2010). CSR also focus on finance where customers and financiers are expressing a growing interest in encouraging sustainable production and are seeking more knowledge about how businesses are handling social and environmental risks and benefits. A sound approach to CSR can help create share equity, lower capital costs, and ensure better market responsiveness (Simanjuntak, 2008; Wang, 2014).

However, CSR ensure business ethics. Many significant and high-profile violations of corporate ethics have led to increased public mistrust of companies, resulting in harm to staff, shareholders, society, as well as share prices. According to Valor (2005), CSR policy can improve governance, lucidity, responsibility, and ethical practices. Community based CSR state that people worldwide are making it clear that no matter where they operate, companies should follow the same high standards of social care. Companies may help create a sagacity of society and a collaborative solution to common issues in the CSR context. At the same time CSR lead the leadership skills, knowledge of the restrictions of legislative and authoritarian measures is growing to efficiently encompass all of the issues raised by CSR. At the same time, leadership skills imply the efficiency of a knowledge-based economy (Filipovi et al., 2012). CSR may provide businesses with the flexibility and chance to take action in proceed of legislation or in places where rules tend to be impossible. Moreover, CSR and Sustainable Development are interrelated. To a large extent of the new growth is unsustainable in terms of productivity and labor exploitation, which can’t be sustained for both legal and theoretical reasons. Linked concerns comprise the need to pay more awareness to alleviating poverty and upholding human civil rights. CSR is an entrance point in the corporate strategy of an organization to consider the sustainable creation of social problems and to respond to them (Amelio, 2017; Igwe et al., 2018).

#### **4.2 Analyze the Reimbursement of CSR towards Organizational Wellbeing**

For companies adopting CSR, there are several major potential benefits. This includes the following items: The first is an efficient management system. According to CSR, organizations that perform well can increase their believability, though those that perform badly can obliterate the picture of the brand and business when exposed. Infamy, or brand value, is based on values like confidence, dependability, congruity, and proficiency. Similarly, for organizations that has no direct retail visibility by brands, their credibility as a positive and negative production network partner for resolving CSR issues can be industrially critical. The second component is risk management. In a rapidly evolving business setting, with greater regulation and stakeholder monitoring of corporate operations, successful supervision of governance, legal, social, ecological, economic, and other threats will enhance supply security and overall market steadiness. One important way to help predict and mitigate risk is to consider the concerns of parties concerned about the effects of a firm. The third is to increase operational efficiencies. In particular, these flows from enhanced efficiencies are found through a structured management approach that involves quality improvement. Social accounting metrics, strategic management, and cost reduction activities are both important to achieve operational efficiency (Pi and Guan, 2018; Adam and Quansah, 2019). The fourth is product innovation and rising market share. CSR is about taking opportunities as well as avoiding threats. It be capable of be a wealthy source of thoughts for innovative products, progress, and markets to draw input from different customers, resulting in competitive benefits. A business, for example, should be accredited according to ecological and societal values so that it is able to a purveyor to specific vendors. However, the tradition of business has turn into one of being conscious of innovations, ingenuity, and markets (Krivka, 2016; Tahirkheli, 2022). The fifth argument is CSR and supply chain efficiency. A firm is vulnerable to its supply chain's weakest link. By raising standards and thereby minimizing risks, like-minded businesses may form successful long-term business relationships (Godfrey, 2009). To adopt a CSR strategy, larger corporations should encourage smaller companies with whom they do business. Some major clothing stores, for instance, require their suppliers to meet employee guidelines and regulations. The sixth initiative is the dynamic operation in the social community. Improved awareness of the firm and its priorities and activities by people and stakeholders translates into improved relationships with stakeholders. In turn, this can grow into more stable and lasting partnerships between the state, private sector, and civil society. CSR will assist with social capital building.

However, the next issue is the admission of capital and a guide for responsible consumption. Progressively, financial organizations are integrating wellbeing and financial prerequisites into their tasks and operations. Financial promoters are searching for signs of fruitful CSR across the board while pursuing decisions about where to situate their capital. A field-tested strategy that incorporates serious areas of strength for a technique is likewise utilized as an intermediary for good initiative. Changing the impractical paradigm of utilization is broadly seen as a significant driver to accomplishing a supportable turn of events. Organizations have a critical role to play in promoting sustainable utilization paradigms and ways of life through the products and

services they afford and how they afford those (Kovács and Valkó, 2013). Responsible consumerism is more than just altering consumer preferences (Ho et al., 2017). It is also about what products are available on the market, their association with buyer rights and manageability issues, and how administrative specialists intervene in the relationship between producers and buyers. Last one is considering relation between CSR and regulators. Governments have aided endorsement procedures for organization that encompass attempted societal and ecological exercises ahead of those obligations by guidelines in various wards. In several states, government use CSR criteria when awarding acquisitions. It is completed because legislators believe that lacking an augmentation in business area commitment; government manageability goals will not be met. Regulatory authorities imply the roles of the corporate owners to ensure social responsibility, which enhances welfare.

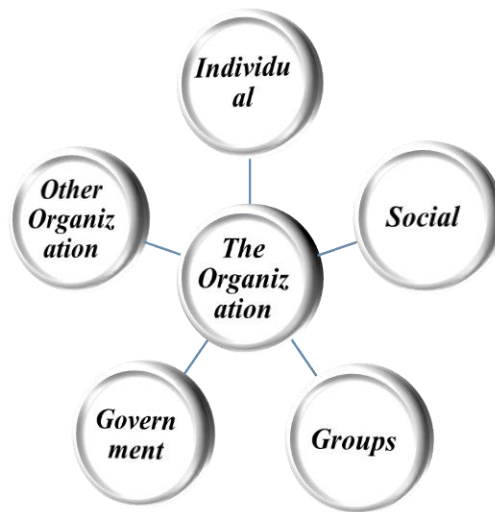
## **5. Interrelation between CSR Strategy, Household, and Social Welfare**

### **5.1 CSR strategy and Economic Practice**

The strategy of CSR is to tackle the colossal challenges of consumer satisfaction, and social welfare. A CSR approach is a road map to move forward on CSR problems. There are some steps that encompass a recommended way to increase CSR strategy. Building supports for the CEO, senior leadership, and staff; researching what others (including rivals) are doing; and determining the importance of known CSR tools (Petrenko et al., 2016; Uyar et al., 2021). It is necessary to create a matrix of the suggested CSR behaviors. Develop opportunity for them to proceed and the production case, and make a decision on direction, strategy, boundaries, and areas of focus. There is no mystery to this process. The measures could be taken in a diverse order or called by various names, but implementing them together would augment the prospect that the business will have a comprehensive and feasible CSR strategy. One of the idolized concerns is CSR dedication that is retained or provided by a company. The policies or instruments that an organization creates or signs onto to signify what the company plans to do to resolve its social, environmental, and economic impacts are CSR pledge (Smith and Rhiney, 2020). The economic practices of CSR ensure that the organizational culture of the company is aligned with the values of CSR. It has helped coordinate and integrate the corporate plan, priorities, and objectives of the organization. The economic practice of CSR involves informing business associates, vendors, families, governments, the general public, and others about the CSR strategy of the organization and providing workers with instructions on how they should treat themselves and how they should treat others.

### **5.2 CSR Social Indenture**

Increasingly, consumers, governments, corporate partners, shareholder, NGOs, and others, as well as the media, are pose businesses to justify what they are doing to counter their effect on society and the environment. CSR commitments clarify the essence and course of the environmental and social actions of the organization and thereby enable others to understand how the company is likely to move in a particular situation. Since CSR requires voluntary obligations, both internally and externally. Like any good policy, transparent obligations are the key component of a company.



**Figure 1: CSR Social Contract**

This figure 1 shows how to conduct the interlink situation for society, government, individuals, and corporations to operate a business and social ecosystem. The CSR framework emphasizes donations to organizations involved in the development, care, and management of individuals' duties. CSR deals with government policies to accumulate government policies such as business policies on environmental issues, waste management, and others (Ortas et al., 2015; Dey et al., 2018; Anser et al., 2020). On the other hand, CSR defines the donations from non-governmental agencies to address issues caused by natural disasters such as cyclones, hurricanes, tidal waves, and floods. CSR contributes to social dynamics by maintaining the threshold level of social needs. It emphasizes quality education for root-level students as well as educational institutions. Organizations involved in housing projects for slum dwellers. Subsidies to social organizations involved in promoting campaigns for women's rights and anti-dowry activities CSR assists the organizations that are involved in feeding, clothing, sheltering, and healing for orphans and rootless kids at the same time. CSR leads donations to hospitals that are committed to delivering free medical services to vulnerable people who specialize in raising the standard of healthcare, such as those with cancer, liver, kidney, thalassemia, skin, and cardio. Moreover, money invested in the construction of a laboratory to provide training in computer or information technology and the development of facilities or the acquisition of teaching programs for the implementation of quality education in public or private educational institutions (under the Monthly Pay Order or MPO) and contributions to organizations involved in sporting infrastructure and national instruction implementation However, CSR has significance for national development due to its focus on research and development.

## 6. Conclusion

The main purpose of this study is to analyse the interactions between CSR and social welfare. The specific objectives are developed by the following aspects: to define the concept and

principles of CSR, to analyse the role of CSR in the case of household welfare, and to define CSR and conduct a principle analysis for social welfare. In addition, this study contributes to academic theories, existing literature, business strategies, understanding business responsibilities, and attaining economic efficiency based on CSR activities. Each corporate foundation ought to be contributing towards the idea of social government assistance and acknowledging other people. Capital is referred to as the lifeblood of a financial organisation and investment. The corporate staff can guarantee the capital accumulation hazard for the family unit, which has profoundly expanded the venture level for the economy. The corporate division should be taught much more about their destinations and goals. It is indispensable to execute association objectives with singular concentration, just as the expected arrangement of duties should be enlightened among them. The corporate area should be generally taught concerning objectives and objections. It is fundamental to implement association objections into family unit government assistance. The establishment should zero in on the more social activities like grants, household consumption, empowerment of women, raising public utility, and others that help to increase household welfare as well as institutional reputation. As of now, developing and least-developed countries (LDCs) have confronted heaps of social and conservative issues. A nation's corporate entrepreneurs are regarded as a princely segment of the general public. They can contribute even more seriously to the general population's and society's improvement. If more organisations approach adding to the general public, it will assist with making their social mark just as it aids the general public. Also, towards the end, corporate social responsibility has been set up to lead brief exercises through innovation, where corporate society has just settled on participatory exercises like creation and dispersion among the various gatherings of individuals. By advancing the way of life, corporate social responsibility (CSR) can lead to society and government assistance. The examination of CSR for social welfare is still moderately creating and adolescent, with substantial dependence on accommodation-based contextual analyses or expressive accounts. As a result, additional research on CSR in developing countries is urgently needed at the global, local, public, and sectoral levels, as well as in theoretical and practical constructs. Moreover, the study limitation indicates that this study was conducted based on literature and existing theories. Further study should focus on quantitative analysis based on primary or secondary data analysis.

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# Use Behavior of Online News Services: A Structural Equation Modeling approach

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## Abstract

Nowadays, development of information technology paved the way of easy access to various online news services, which changes this landscape drastically over the years. The changes in the news sector flourished due to the availability of smartphones and easy access to the internet. Therefore, this study aims at determining the use behavior of online news services. To reach the research goal, we develop a research model by combining the constructs of the technology acceptance model with the concepts of accessibility, ubiquity, and satisfaction. We collected data from 302 respondents who read news online. We applied the structural equation model to examine the proposed hypotheses. The results of this study shows that accessibility, perceived ease of use, and perceived usefulness significantly influence satisfaction and intention to use, which, in turn, influences user behavior. This study's findings significantly contribute to the online news service literature. Finally, these findings have several theoretical and practical implications for online news services.

**Keywords:** Online News Services, TAM, Accessibility, Ubiquity, SEM

## 1. Introduction

In the age of digitalization, internet technology (IT) creates a new business environment and significantly influences the business process. Businesses can easily reach markets and create business areas with the use of internet. Therefore, internet is the mainstay of the businessperson to be successful in business and trade competition (Shia et al., 2016). The important areas of electronic business worldwide is covered by online newspapers (Mierzejewska et al., 2017). Online news uses the internet to gather and store information, making it an updated version of conventional news. It offers unique features like news presentation, advertisement support, and navigation support (Panda & Swain, 2011). State University of Illinois, USA published “The News Report” as an online newspaper in 1974. In the early 1990s, news organizations were only starting to investigate the possibility of using the World Wide Web (WWW) to provide news material to readers (Deuze & society, 2003). By 2005, many people had developed the common and regular practice of reading news online. According to a World Association of Newspapers (WAN) survey from that year, internet news viewership grew by more than 200 percent worldwide between 2001 and 2005 (Shim & society, 2006). A few years after online news outlets first appeared in Western and European nations, some of them made

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their way to Bangladesh. In Bangladesh, the online news journey started in 2005, but formally, it started its activities on October 22, 2006, through bdnews24.com. The nation's first online newspaper, "bdnews24.com," opened in a new era for the journalism field across the nation. Online is not as old as news media nowadays. In Bangladesh, online news and readers are growing daily as the number of internet user is increasing. The telecom regulator's statistics showed the number of internet users in Bangladesh is 103.476 million (Express, 2020). Statistics from the Bangladesh Telecommunication Regulatory Commission (BTRC) shows that as of the end of January 2019, there were 91.421 million internet users worldwide. Readers and viewers have taken a great interest in online news, with the younger generations being its primary audience. Online-only publications preceded online newspapers in their beginnings. For instance, the only online newspaper that isn't connected to hard copy editions is the UK-based Southport Reporter (Panda & Swain, 2011). Bangladesh has now seen hundreds of online newspapers in recent years. The top ten online news portals in Bangladesh are- BBC Bangla, Jagonews24, Bangla News 24, bdnews24, BD24Live, Risingbd, Bangladesh Journal, Poriborton, BD Morning, GoNews24 (Newspaper, 2020).

Previous studies cover many areas of online news. Berger et al. (2017) found that utilitarian and hedonic value perceptions plays important role in increasing user loyalty to online. The impact of online newspaper satisfaction on revisit intention was measured by Mahmud et al.(2018). You et al., (2013) examined the factors that influence user behavior and consumption of online news in South Korea, such as information seeking, amusement, and social utility. They suggest that in depth reading increased level of actual use of online news. Yadamsuren & Erdelez, (2011) investigated how people perceive news and how they read it online using Savolainen's (1995)'s Everyday Life Information Seeking model. According to their research, most people who read news online do it out of habit rather than making deliberate judgments. An exploratory study was conducted by Chen & Corkindale (2008) to determine the behavioral intention to use online news services. In their study, perceived usefulness (PU), perceived core service quality (PCSQ), perceived supplementary service quality (PSSQ), Trust, Networking, Interface and Subjective Norm were identified as prominent in influencing behavioral intention (Bentley et al., 2019). Reading online news revealed that extremely significant aspects that directly impacted user satisfaction when it came to website usability were information quality and service interaction quality (Pratiwi & Irawan, 2021). Additionally, in order to better understand online news behavior, Bentley et al.(2019) carried out a study. Their results indicate that 47% of participants read news from both political parties, and 20% of readers read news on the web, 16% on social media, and 61% engaged a single news domain.

The Bangladeshi government launched digitalization initiatives and gave the media industry a multifaceted makeover. The Ministry of Information and Broadcasting has authorized 85 online news portals and the online news editions of 92 established newspapers in the nation so far, in compliance with the National Online Mass Media Policy (Karim, 2021). Moreover, social media platforms, notably Facebook, have grown into a secondary source for information collection and distribution. Besides, young people are increasingly turning to the Internet for news, which has led to a decline in interest in traditional advertising (Ullah et al., 2023). John et

al. (2022) argued that online news services aim to diversify the sources of revenue. The majority of the newspaper industry moved online by developing an online news media platform for its readers and figuring out how to make money (Olabimpe Ibrahim, 2020). In reality, the emphasis needs to be on the ways in which people consistently consume, disseminate, and engage with media. This present status of online news industry motivated the researchers to focus on determining factors influencing use behavior of online news services in Bangladesh. More specifically, previous research works have significant gaps. The majority of earlier research was carried out in developed countries. Online news behaviors in emerging economies like, Bangladesh are yet to be explored. This study aims to address this gap in an empirical research on the use behavior of online news services in Bangladesh. In order to fill this research gap, we develop a research model that aims to determine the factors affecting Bangladeshi people's use behavior on online news services. The study's findings are highly relevant for both theoretical comprehension and real-world implementation. The current study adds theory to the body of knowledge on news services. In particular, it creates a perception-based model to pinpoint the key factors influencing Bangladesh's use behavior of online news services and then to offer recommendations and instructions to help these services expand in Bangladesh.

## **2. Research framework and hypothesis**

The TAM model was developed to identify the cognitive and psychological factors that influence users' acceptance of new technology (Al-Adwan et al., 2023). Technology adoption and actual use are influenced by behavior intention (BI). Among the various models available for forecasting technological adoption and usage behavior, TAM is the most well-known (Granić & Marangunić, 2019). Mathieson, Peacock, and Chin (2001) argued that TAM is a superior multi-attribute model when it comes to explaining the use of an information system, compared to models like TRA and TPB. According to Venkatesh & Davis (2000), TAM is capable of reliably explaining a significant portion of the variance (typically about 40%) in use intention and behavior. Furthermore, TAM is more favorable when compared to other competing models such as the Theory of Reasoned Action and the Theory of Planned Behavior (Aldammagh et al., 2021). Perceived usefulness, perceived ease of use, and intention to use are the constructs of TAM model. Accessibility is included in the big test theory. The purpose of the context-awareness application, according to the Context-awareness theory, is to receive and apply technical context information to provide services that are appropriate for the current environment (Moran & Dourish, 2001). This theory incorporates ubiquity. The Context-awareness theory, which forecasts users' intention to continue using technology or not, was first made evident by Liao et al. (2009). In order to estimate the long-term usage behavior of innovative technologies concerning the scope of applicability and descriptive strength, this theory has flourished by integrating three popular IS models, such as the technology acceptance model (TAM), the context awareness theory, and the big test theory (Liao et al., 2009). Taking variables from these three renowned models, we develop a model to achieve our research objectives. This framework will provide a robust model for future research in this domain.

### 2.1 Accessibility

Ho & Lee (2007) defined accessibility as the extent to which the website's information can be received and used without facing any difficulty. It is the people's ease of access to a specific intermediate (Sivunen & Valo, 2006). It denotes the ability to travel to places where needs can be met in order to, if necessary, obtain what is required. Most of the time, accessibility measurements are composed of two components: an impedance measure that represents the cost or travel time to a destination, and an attractiveness measure that captures the characteristics of the expected destinations. Academics have used a broad variety of accessibility variables and raised a number of important issues with these attributes (Handy et al., 1997). In a study conducted by Yang et al. (2005), accessibility was identified as a significant impact on satisfaction. A reliable system should provide online newsreaders with a link to access online news networks. Easy access will be less threatening to the online newsreaders and they will feel satisfied. Ease of access of the individuals may serve as a critical antecedent of a behavioral intention that means intention to read online news. From this study, we can assume that accessibility has a positive relationship with the intention to use. Therefore, we posit the following hypotheses:

H1a: Accessibility has a positive influence on satisfaction.

H1b Accessibility has a positive influence on intention to use.

### 2.2 Perceived Ease of Use

Perceived ease of use refers to the extent of benefits associated with employing an information system and the degree of comprehensibility of the system (Ghazali et al., 2018). In this study, consumers' effort requirements to comprehend, acquire, and utilize internet news portals are based on how easy they are to use. If users are comfortable incorporating technology into their daily lives, there is a greater chance that they may accept this news gateway through the internet.

Additionally, Davis states that the TAM Model looks at perceived usefulness and ease of use as important variables that affect a person's intention to use technology. These factors are seen to be crucial in determining user adoption (Adams et al., 1992; Arbaugh, 2002; Sun et al., 2008). The earlier studies determined a significantly positive impact of perceived usefulness on satisfaction (Arbaugh, 2000; Chiu et al., 2009). Prior studies have also demonstrated the favorable relationship between satisfaction and perceived ease of use (Chang & Wang, 2007; Stoel & Lee, 2003). If they believe an online experience would be beneficial, online news readers are more likely to become satisfied and have specific intents toward it (Bhattacharjee, 2001). When they believe that an online experience is helpful and simple to use, they feel positively about it (Devaraj et al., 2002). Perceived ease of use and satisfaction is strongly correlated (Salameh et al., 2020). Thus, we propose the following hypotheses:

H2a: Perceived ease of use has a positive influence on satisfaction.

H2a: Perceived ease of use has a positive influence on intention to use.



### 2.3 Perceived Usefulness

Perceived usefulness is the extent to which an individual believes that using a certain technology can improve their performance at work (Davis, 1989). Perceived usefulness was found to be a key determinant of behavioral intentions by Davis et al. (1989). Previous studies (Bhattacharjee, 2001; Weng et al., 2017) have shown a linear link between perceived usefulness and user satisfaction as well as usage intention. For instance, Liao et al. (2009) found a positive and substantial correlation between perceived usefulness and user satisfaction as well as between perceived usefulness and intention to use in the Taiwanese context. Therefore, we formulated the following hypotheses:

H3a: Perceived usefulness has a positive influence on satisfaction.

H3b: Perceived usefulness has a positive influence on intention to use.

### 2.4 Ubiquity

As a crucial component of the context-awareness theory, ubiquity serves as a foundation for the ongoing goals of technology-driven services. Ubiquity is the opportunity to get the service or information at any time and any place (Cao & Niu, 2019). It is the users' ability to get the necessary information or services by connecting to the internet. In a study, investigation into the relationship between customer perceptions of interaction and transaction intentions in mobile commerce, Lee (2005) identified that contextual offers and ubiquitous connectivity directly influence transaction intentions in a positive way. Online news portals can be used anywhere and anytime with the use of an internet connection. This will facilitate users in many ways (Cao & Niu, 2019). The ubiquitous characteristics of smart services like online news has positive impact to improve users' satisfaction (Jung, 2014). This study assumes that ubiquity can affect satisfaction and intention to use. Thus, we formulate the following hypotheses:

H4a: Ubiquity has a positive influence on satisfaction.

H4b: Ubiquity has a positive influence on intention to use.

### 2.5 Satisfaction

According to Yi (1990), satisfaction is the assessment of the feeling depending on how well the good or service works. Customer satisfaction plays a crucial role in creating and preserving loyalty, according to marketing literature (Chuah et al., 2017). It is one of the vital factors that influence post-adoption behavior (Bhattacharjee, 2001). This also holds true in the context of IS, where users' intentions to continue using the system are strengthened when they are satisfied (Veeramootoo et al., 2018). Further, it is argued that satisfaction and use behavior is correlated. Increased level of satisfaction lead to actual use of any technological services like online news (Salameh et al., 2020). Thus, we propose the following hypothesis:

H5: Satisfaction has a positive influence on use behavior.

### 2.6 Intention to Use

A person's intention to use is the level of preparedness to engage in a specific activity. According to Fishbein & Ajzen (1975), behavioral intention is "the strength of one's intention to

perform a specified behavior. “It is regarded in the model as the primary predictor of the actual behavior and is generally validated as the behavior's primary antecedent (Venkatesh et al., 2003a; Venkatesh et al., 2012). Dmello et al. (2023) found that the user's behavioral intention had a substantial impact on the user's actual use behavior. As a result, we put forth the following hypothesis:

H6: Intention to use has a positive influence on use behavior.

### **3. Research Design and Methods**

#### **3.1 Instrument Development and Data Collection Method**

Researchers used an online survey with 26 measurement items to collect empirical data. We used the Google form to design the questionnaire. The survey was prepared in the English language. The five-point linear scale used for the measurement questions ranged from (1) "Strongly disagree" to (5) "Strongly agree." On October 1, 2022, the Google form was made available, and on October 30, 2022, it was closed for responses. We conducted a pilot test to evaluate the questionnaire's suitability. Twenty respondents with characteristics identical to those of the target group participated in the pilot study. We made a few minor changes to the measurement questions before creating the final version of the questionnaire. We used convenience sampling method to collect the empirical data. The link to this questionnaire was sent through an email address. The link was also shared in different social media groups. We collected data from 302 respondents and used them for analysis.

#### **3.2 Measurement Instruments**

We collected the measurement items from previous literature, and the details about the sources of measurement items were mentioned in Table 1.

**Table 1 Measurement Items**

Constructs	Items	Sources
Ubiquity	UBQ1: I can use online news services anywhere. UBQ2: I can use online news services at any time. UBQ3: I can use internet news sources, anyway.	(Cao & Niu, 2019)
Accessibility	ACC1: The contents of the online news portal are easily accessible. ACC2: The contents of the online news portal are easily downloadable. ACC3: The provided contents of the online news portal are easily retrievable. ACC4: The provided contents of the online news portal are quickly retrievable.	(Venkatesh, Morris et al. 2003)
Perceived Usefulness	PU1: I think online news services help me access daily news. PU2: I think online news services are useful for reading the daily news.	(Venkatesh et al., 2003b), (Celik & Logistics, 2016), (Ghorbane

	<p>PU3: I think online news services help me perform news reading tasks more quickly.</p> <p>PU4: I think online news services allow me to read daily news timely.</p>	<p>Moghaddam et al., 2016; Liebana-Cabanillas et al., 2017)</p>
Perceived Ease of Use	<p>PEU1: I believe using online news services is simple and easy to understand.</p> <p>PEU2: I believe that I can easily access online news sources.</p> <p>PEU3: I think online news services are easy to use.</p> <p>PEU4: I believe it's simple to understand how to use the online news portal.</p>	<p>(Venkatesh et al., 2003b), (Celik &amp; Logistics, 2016), (Ghorbane Moghaddam et al., 2016)</p>
Satisfaction	<p>SAT1: Online news services met my expectations of news reading tasks.</p> <p>SAT2: Online news services are efficient in fulfilling my news reading desires.</p> <p>SAT3: I am pleased with the experience of using online news services.</p> <p>SAT4: Overall, I am satisfied with the use of online news services.</p>	<p>(Nascimento et al., 2018), (Veeramootoo et al., 2018)</p>
Intention to Use	<p>IU1: In the future, I plan to make use of online news services.</p> <p>IU2: I think I'll keep using internet news sources in the future.</p> <p>IU3: In the future, I intend to make use of online news sources.</p>	<p>(Venkatesh et al., 2003b), (Celik &amp; Logistics, 2016), (Ghorbane Moghaddam et al., 2016), (Liebana-Cabanillas et al., 2017)</p>
Use Behavior	<p>UB1: At the moment, I use online news sources.</p> <p>UB2: I regularly use online news sources.</p> <p>UB3: I use online news sources a lot of time.</p> <p>UB4: I use online news sources when they're available.</p>	<p>(Venkatesh et al., 2003b)</p>

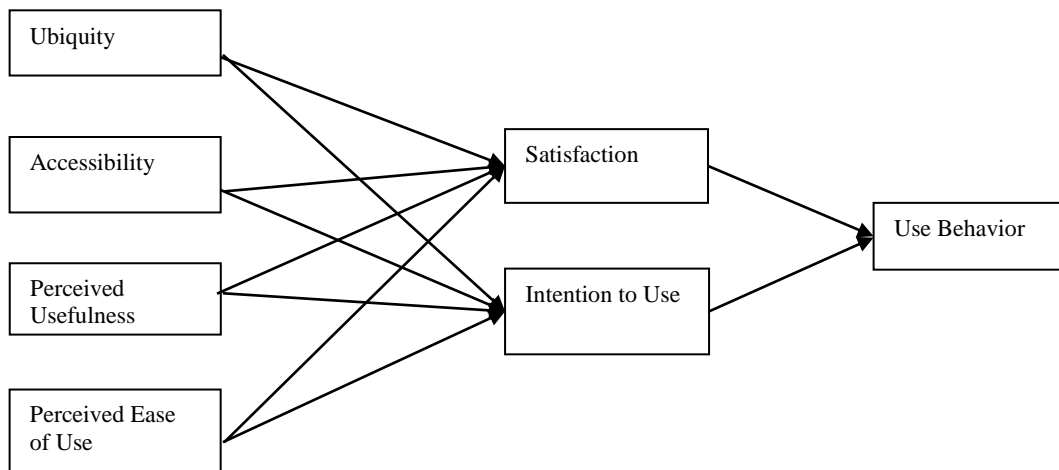


Figure 1: Research Model

### 3.3. Analysis

PLS, which is based on SEM, is better than other statistical methods since it is independent of sample size and residual distribution. It comprises of a model estimating method based on components (Chin, 1998). Because PLS is the most practicable approach for complex structural models, it avoids two significant issues: factor indeterminacy and unacceptable solutions (Fornell & Larcker, 1981). Moreover, it has the ability to forecast reflective and formative variables (Chin, 1998). The data analyzing process was examined using a two-step methodology using Smart PLS 3.2.6 software (Anderson & Gerbing, 1988; Ringle et al., 2015). To analyze demographic variables, we use SPSS 13 version 13.

## 4. Results

### 4.1 Demographic Profile of Respondents

Males dominated the respondents at 51.30%, while female response rates were 48.70%, and 78.10% were younger (20–30 years). There were also below 20 years, 8.60%, (31-40) years, 9.60%, and above 40 years, 3.60%. Besides, 73.50% of the participants were graduates, 17.60% of the participants were postgraduate and 8.90% of the participants' level of education was HSC. Moreover, the respondents' experience of reading online news portals was less than one year 27.50%, (1-2) years 20.90%, (2-3) years 20.20%, and four years or more 31.50%.

**Table 2 Demographic Profile of Respondents**

Items	Variables	Frequency	Percentage
Gender	Male	155	51.30
	Female	147	48.70
Age	Below 20 years	26	8.60

	20-30 years	236	78.10
	31-40 years	29	9.60
	above 40 years	11	3.60
Level of Education	H.S.C	27	8.90
	Graduate	222	73.50
	Post Graduate	53	17.60
Experience	Less than 1 year	83	27.50
	1-2 years	63	20.90
	2-3 years	61	20.20
	4 years or more	95	31.50

#### 4.2 Common Method Bias

As suggested by Podsakoff et al. (2003), Harman's single-factor test was used in this study to assess for common method bias (CMB). When a single factor accounts for a significant amount of variance, CMB becomes a critical issue (Podsakoff et al., 2003). In light of this, we employed principal axis factor (PAF) analysis to identify the key factors responsible for explaining variation. The findings indicated that a single component explained a maximum of 43.112 percent of the total variance, which is significantly less than the proposed limit of 50 percent (Podsakoff et al., 2003).

#### 4.3 Measurement Model

The criteria for discriminant validity, convergent validity, and construct reliability were determined by applying the measurement model. The construct reliability was examined using Cronbach's alpha and composite reliability. According to Table 3, every construct demonstrated composite reliability, and every time the value for Cronbach's alpha was more than 0.7, it indicated the constructions' reliability. The average variance extracted (AVE) method was used to assess the convergent validity. Every construct has an AVE of more than 0.50, indicating that it satisfies the convergent validity requirements (Fornell & Larcker, 1981; Henseler et al., 2009).

**Table 3 Measurement Model**

Constructs	Cronbach's alpha	CR	AVE
Ubiquity	0.805	0.883	0.716
Accessibility	0.800	0.869	0.625
Perceived Usefulness	0.863	0.907	0.709
Perceived Ease of Use	0.845	0.896	0.684
Satisfaction	0.855	0.902	0.698
Intention to Use	0.846	0.907	0.765
Use Behavior	0.747	0.839	0.716

Note: ACC= Accessibility, PEU= Perceived ease of use, IU= Intention to Use, PU= Perceived Usefulness, SAT= Satisfaction, UB= Use Behavior, UBQ= Ubiquity.

**Table 4 Correlation Matrix and Square Root of the AVE**

Constructs	ACC	PEU	IU	PU	SAT	UB	UBQ
ACC	<b>0.790</b>						
PEU	0.665	<b>0.827</b>					
IU	0.618	0.716	<b>0.875</b>				
PU	0.654	0.805	0.691	<b>0.842</b>			
SAT	0.588	0.709	0.734	0.664	<b>0.835</b>		
UB	0.548	0.656	0.696	0.642	0.629	<b>0.753</b>	
UBQ	0.521	0.604	0.502	0.549	0.511	0.509	<b>0.846</b>

Note: ACC= Accessibility, PEU= Perceived ease of use, IU= Intention to Use, PU= Perceived Usefulness, SAT= Satisfaction, UB= Use Behavior, UBQ= Ubiquity.

#### 4.4 Structural Model

In order to identify path relationship between the constructs in the study model, the structural model was used. We used a bootstrap approach. A significant level of  $p < 0.05$  was used to investigate the hypothesis (Efron & Tibshirani, 1994). The path coefficient ( $\beta$ ) and t-statistics were employed to quantify the relationships between the endogenous and exogenous variables. Table 5 depicts the results of the PLS-SEM analysis together with the assessment of the proposed hypotheses and structural model estimate. The relation between (ACC  $\rightarrow$  IU,  $B=0.190, T=3.243, P=0.001$ ), (ACC  $\rightarrow$  SAT,  $B=0.149, T=2.235, P=0.025$ ), (PEU  $\rightarrow$  IU,  $B=0.356, T=3.519, P=0.000$ ), (PEU  $\rightarrow$  SAT,  $B=0.399, T=4.371, P=0.000$ ), (PU  $\rightarrow$  IU,  $B=0.253, T= 2.532, P=0.011$ ), (PU  $\rightarrow$  SAT,  $B=0.200, T=2.168, P=0.030$ ), (SAT  $\rightarrow$  UB,  $B=0.255, T=4.318, P=0.000$ ), (IU  $\rightarrow$  UB,  $B=0.509, T=8.890, P=0.000$ ) were significant and the relation between (UBQ  $\rightarrow$  IU,  $B=0.049, T=0.786, P=0.432$ ), (UBQ  $\rightarrow$  SAT,  $B=0.083, T=1.594, P=0.111$ ) were not significant. Among the proposed hypotheses, H1, H1a, H2, H2a, H3, H3a, H4, H4a, H5, and H6 were accepted where H4 and H4a were not supported.

**Table 5 Structural Model**

Hypothesis	Path	B	T Statistics	P Values	Comments
H1a	ACC $\rightarrow$ IU	0.190	3.245	0.001	Supported
H1b	ACC $\rightarrow$ SAT	0.149	2.235	0.025	Supported
H2a	PEU $\rightarrow$ IU	0.356	3.519	0.000	Supported
H2b	PEU $\rightarrow$ SAT	0.399	4.371	0.000	Supported
H3a	PU $\rightarrow$ IU	0.253	2.532	0.011	Supported
H3b	PU $\rightarrow$ SAT	0.200	2.168	0.030	Supported
H4a	UBQ $\rightarrow$ IU	0.049	0.786	0.432	<b>Not Supported</b>
H4b	UBQ $\rightarrow$ SAT	0.083	1.594	0.111	<b>Not Supported</b>
H5	SAT $\rightarrow$ UB	0.255	4.318	0.000	Supported
H6	IU $\rightarrow$ UB	0.509	8.890	0.000	Supported

#### 4.5 Predictive relevance

R Square's values, which are the percent of variance determined by the model, are 57.1%, 54.5%, and 51.5% for intention to use, satisfaction and use behavior, respectively. Therefore, the R square of this model indicates good explanation power.

**Table 6 Predictive Relevance**

Constructs	R Square
IU	0.571
SAT	0.545
UB	0.515

Note: IU= Intention to Use, SAT= Satisfaction, UB= Use Behavior.

#### 5. Discussion and Implications

The purpose of this study was to figure out the use behavior of online news services. In order to do this, we developed an integrated model that combines the TAM dimensions of perceived usefulness and perceived ease of use with the concepts of accessibility, ubiquity, and satisfaction. We used the structural equation method to examine the model.

The results of the study show positive and significant relationships among proposed hypotheses, except the relationships of ubiquity with satisfaction and intention to use. We proposed that accessibility has positive relationships with satisfaction and intention to use. This indicates that accessibility positively influences the level of satisfaction and intention to use. These results indicate that if online newsreaders can easily access the sites and download the portals, their satisfaction and use intention will be increased. Our findings are consistent with the results of Shan et al. (2020) and Yang et al. (2005).

Further, the positive relation between perceived ease of use with satisfaction and intention to use explains if online newsreaders have a clear and understandable interaction with online news services, they will learn, use, and access these portals. These findings were supported by Bhattacharjee (2001), Chang & Wang (2007) and Devaraj et al. (2002). We accept H3 and H3a, as there is a positive relationship between perceived usefulness with satisfaction and intention to use. This means that by using online news portals, online news readers can easily access daily news and allow them to read daily news in a timely manner. Several researchers support our findings (Bhattacharjee, 2001; Liao et al., 2009; Weng et al., 2017). They found similar results from their studies. There is a positive relationship between use behaviour with satisfaction and intention to use. These online newsreaders can meet their expectations, desire, and intent to use this service in the future. As a result, H5 and H6 are accepted.

Surprisingly, our findings suggest that the relation between ubiquity with satisfaction and intention to use is not significant. One possible reason for this perception of users is time and place are not important to them. They do not consider these factors important in reading news on online platforms. Therefore, H4a and H4b were rejected.

## **6. Contribution**

This study has significant contribution in the literature of information technology and online news services. It also found that accessibility, perceived ease of use and perceived usefulness are the significant predictors of users' satisfaction and intention to use online news services. Therefore, network service providers and online news service providers should make news site and content is accessible from any device, easy to use and provide useful content to the readers. Such efforts from them encourage users to revisit the site for exploring the news online. So, this study helped researchers and practitioners to understand readers' satisfaction, intention and behavioral pattern. Further, this study has significant contribution in combining three renowned theories. Such effort in online news is unique. It confirms the application of TAM with Big test and Context awareness theory in understanding the use behavior of online news services. It also established the relationship between satisfaction and intention to use, and use behavior.

Besides theoretical contribution, this study has some practical contributions. Online news service providers to increase readers' satisfaction and intention to read news online, which in turn lead to revisit the site more and more to read news online, can use the findings of this study as a tool. They can assess the importance of service quality on encouraging users' behavior. It helps them to focus more on service quality in delivering customers. The findings of the research emphasize the significance of perceived usefulness, accessibility, and perceived ease of use in raising user pleasure and intention to use, all of which support behavior. This is very helpful for new entrepreneurs in information system to understand which factors need to focused to satisfy users' and retain them.

## **7. Conclusion**

While social media usage in Bangladesh has increased dramatically, particularly for online news, relatively little study has been done to determine how online news services are used. The factors of readers' satisfaction, intention to use, and impact on use behavior are identified in this study. Particularly, this study determines the influence of accessibility, perceived ease of use, perceived usefulness, and ubiquity on readers' satisfaction as well as how they increase intention to use online news service. Further, it explores how satisfaction and intention to use improves the use behavior of online newsreaders. Increasing readers' satisfaction is crucial for journalists and facilitators who invest money and time to make it successful. Most of the online newspapers are free of charge but it's have another way to earn e.g. advertising. However, online newspapers will lose advertising if readers are less likely to utilize the site, which will negatively impact their capacity to remain in business. Therefore, this study provides crucial insight about how different dimension increase the satisfaction of online newsreaders as well as it also reveals their impact on increasing readers' intention to use. Journalists and facilitators of online news should concentrate on enhancing those aspects in order to raise readers' satisfaction. They should make online news accessible on the websites that can be explored in any device. Reading online news makes so easy. Make it available without any difficulty to read. Useful information and news is another important factor for increasing readers' satisfaction and intention to read news online.



## 8. Limitations and Future Research

This study has important theoretical and practical implications, but it also has certain drawbacks. First, we collect data using Google form in which we lack personal contact with the respondents. Second, majority of our respondents is young (20-30) years of age. Therefore, the finding of this study does not represent the perception of all ages of people. Due to the conciseness of our conceptual model, we exclude some important factors, which can be added in future research. In future researcher can make a deep study on this phenomena using direct interview with the readers. They can collect information using focused group interview that may provide further understanding in this sector.

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# Bibliometrics-based Evaluation of the Human Resource Information System Research Trend: 1991–2021

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## Abstract

In recent years, the human resource information system (HRIS) has received a lot of attention, including in-depth scholarly articles. This study aimed to conduct bibliometric analysis for examining the topography and obtaining a structural overview regarding the characteristics of HRIS research. Using specific search criteria related to the HRIS research domain, the research documents were extracted from the Scopus database. A total of 808 documents from 1991 to 2021 were identified and analysed for selecting the growth trajectory of HRIS literature, recognizing influential researchers, journals, articles, countries, keywords, and subject areas, exploring the intellectual structure of this knowledge base and highlighting topical trends. Key findings of this study indicated a steady growth in the volume of HRIS publications in spite of certain fluctuations. The current study is intended to provide relevant scholars with a panorama of global HRIS research along with the established guidelines for future study to the area and most pertinent research fields.

**Keywords:** Bibliometric Analysis, Human Resource Information System, HRIS, Review, Research Trends.

## 1.0 Introduction

Over the past few decades, organizations are encountering numerous changes because of rapid technological advancement, globalizations, intense competition, and the emergence of knowledge-oriented economy. As a result, the functions of human resource (HR) are changing swiftly for keeping pace with such changes in the organizational arena (Quaosar, Hoque, & Bao, 2018). In this way, the traditional HR policies previously widely practised have become outdated with the passage of time and insufficient for implementation (Welch & Björkman, 2015). Today's organizations are paying increased attention on taking the advantage of information technology and human resource management (HRM) since these two constructs are correlated (Fobang, Wamba, & Kamdjoug, 2019). Therefore, human resource information system (HRIS) aims to enhance administrative efficiency through faster information processing, improved employee communications, lower costs of manpower, greater accuracy in information, and overall improvements of HR functionality (Quaosar et al., 2018; Wiblen, Grant, & Dery, 2010).

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HRIS formed the central focus of a number of authors in the extant HRM literature. Based on the view of Thite, Kavanagh, and Johnson (2012), HRIS can be conceptualized as a system used for manipulating, storing, acquiring, recovering, and delivering pertinent information regarding the organizational human resources. In line with this, HRIS is defined as a combined hardware, software, system procedures and policies, support functions into a process of automated system which support various operational and strategic processes of HR managers and line managers (Chauhan, Sharma, & Tyagi, 2011). In recent times, the focal point of HRIS in an organization has shifted to key strategic applications namely recruitment and selection, self-service technologies, compensation and performance management, alignment of HR planning with organization's planning (Bell, Lee, & Yeung, 2006; Chakraborty & Mansor, 2013; Panayotopoulou, Vakola, & Galanaki, 2007).

By way of example, Pereira, Verocai, Cordeiro, Gomes, and Costa (2015) conducted a bibliometric research addressing the Information Systems and Innovation issues. Their research analysed 127 articles predominantly from the United States and Brazil. Using the Scopus database from the period of 1971 to 2017, Ezenwoke, Ezenwoke, Eluyela, and Olusanmi (2019) used a bibliometric technique to statistically examine the impact and volume of the accounting information systems literature. In addition to that, Lin, Hsu, and Chiang (2016) investigated the contributions of information systems in the literature of electronic commerce by performing a bibliometric study where they reviewed 853 articles in ten dominant journals published from 1991 to 2014 period. Based on previously published research, it is apparent that the global research trends in scientific publications regarding information systems issues in the field of HRM is largely lacking in the scholarly literature.

Despite various studies were carried out on information systems focusing certain perspectives, the bibliometric analysis examining the information systems from the perspective of HRM is still rare in the body of literature. Thus, the current study aims to provide a macroscopic overview of the global publications, trends, and characteristics of HRIS research by performing bibliometric analysis. In this connection, our study makes key contribution to the scholars interested to expand the field of HRIS because we attempted to outline the trends of HRIS research and identified the most relevant areas of research which will be considered for carrying out future research on HRIS. Furthermore, this paper presented an informative and clear picture demonstrating the research achievements pertaining to HRIS domain, which would assist practitioners and researchers to highlight the underlying results from journals, authors, countries, references, institutions, and research topics.

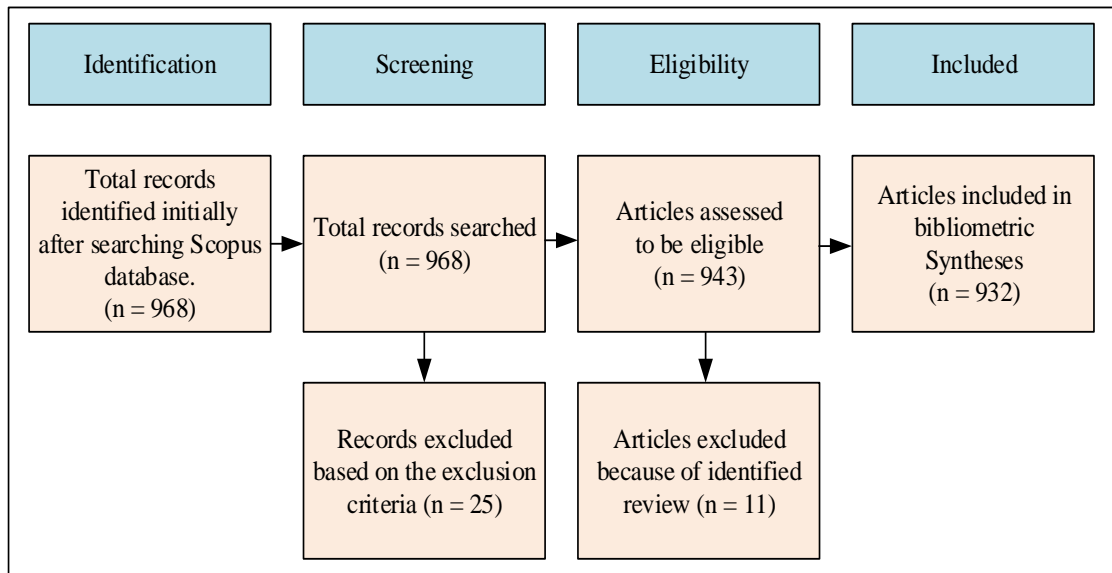
## **2.0 Methodology**

The methodology is based on the application of bibliographic technique that is also referred as the statistical or quantitative analysis of publications. This technique highlights mapping of the trends, characteristics, development of scientific results, and publication history within a particular research field (Guo et al., 2019; Nunen, Li, Reniers, & Ponnet, 2018; Ugolini et al., 2015). Similarly, bibliometric approach not only is appropriate for quantifying and identifying the patterns of cooperation between the authors' performance and research nature, publications, countries, journals, and institutes, but also is applied for assessing their contribution on



particular topics (Li & Zhao, 2015; Nunen et al., 2018). Bibliometric technique could be used at the position of titles, summaries of publications, keyword lists, or the full record of citation to obtain the particular topics along with subject categories assigned for publications (Eck & Waltman, 2009; Guo et al., 2019).

In this study, we retrieved data regarding HRIS from the Scopus, which is a bibliographic database covering about 22,000 titles in medical, technical, social sciences, and scientific field. The Scopus database was selected since it is the largest database when compared to Web of Science or Pubmed (Falagas, Pitsouni, Malietzis, & Pappas, 2008; Sweileh et al., 2017). Moreover, Scopus database is used by performing certain analytical functions. The “source type” was one such function that allowed our refining of retrieved scientific publications based on the data source type. In the ‘document type’ of this study, our analysis was limited to articles, conference papers, conference review, book, book chapter since these are considered as ‘certificated knowledge’ and also subject to peer review (García-Lillo, Úbeda-García, & Marco-Lajara, 2017). Subsequently, our analysis based on ‘source type’ was confined to conference proceedings, journals, book series, books and excluded trade publications as they are not considered as true publications (Sweileh et al., 2017).



**Figure 1.** The flow diagram of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) detailing steps in the screening and identification of sources

**Source:** Authors’ own study, 2023

In this bibliometric review, the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines was followed in searching and identifying relevant documents from Scopus database (see Figure 1). This study applied the central theme of research articles including "Human resource\* information system\*" in the title, abstract, and keywords. Initially the query search string was: (TITLE-ABS-KEY ("Human resource\* information system\*")) generating 297 documents. Taking past researchers’ view into consideration, we added various similar terms of HRIS and found our search string as: TITLE-ABS-KEY ("Human resource\* information system\*" OR "HR technolog\*" OR "human resource\* technolog\*" OR "HR

information system\*" OR hris OR e-hr) producing 844 documents. After imposing the exclusion criteria, we set the search string: TITLE-ABS-KEY ("Human resource\* information system\*" OR "HR technolog\*" OR "human resource\* technolog\*" OR "HR information system\*" OR HRIS OR e-hr) AND (EXCLUDE (PUBYEAR,2020)) AND (EXCLUDE (DOCTYPE,"ed") OR EXCLUDE (DOCTYPE,"no") OR EXCLUDE (DOCTYPE,"le") OR EXCLUDE (DOCTYPE,"rp") OR EXCLUDE (DOCTYPE,"sh") OR EXCLUDE (DOCTYPE,"tb") OR EXCLUDE (DOCTYPE,"Undefined")) AND (EXCLUDE (SRCTYPE,"d"))resulting in 968 documents. Apart from that, we also examined each documents for finding potential review paper and found 11 documents which was excluded from our bibliometric syntheses. Finally, we obtained total 932 documents from Scopus database for analysis.

### **3.0 Results and Discussion**

The analyses were made based on the publications obtained from the Scopus database from the period of 1991 to 2021 according to the year of publications, most frequently cited publications, type of publication, number of authors, and text analysis of publications' titles.

#### **3.1 Year of publications and research trends**

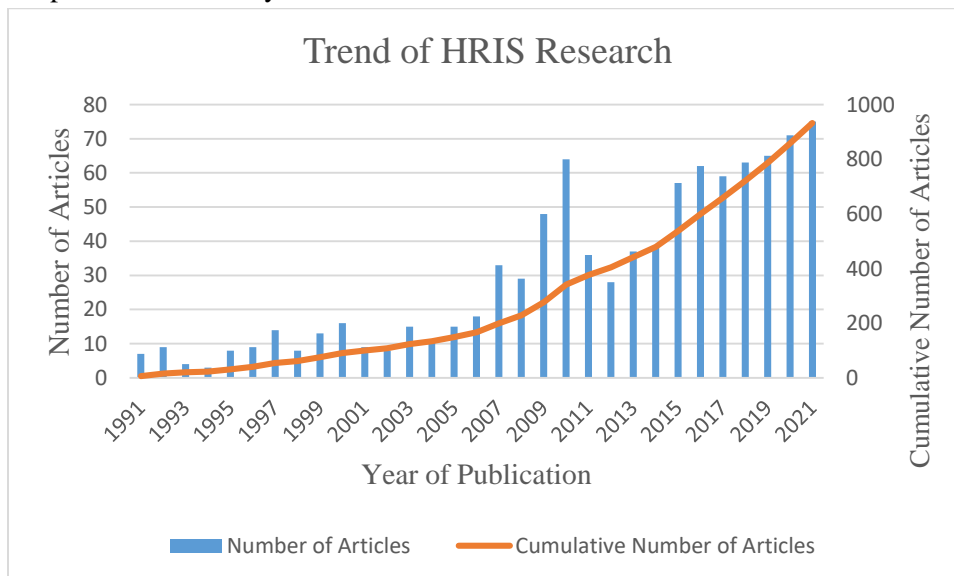
The year of HRIS publications is analysed with frequency by providing an overview of research. The findings in Table 1 included that HRIS research started its journey in 1991 with the gradual emergence of internet and information technology in HR operations. In this year, the number of scientific researches following HRIS was 7. The least number of published documents was 3 in the year 1994 while majority of the publications (75 documents) were made possible in 2021 representing 8.05% of the total publications.

**Table 1.** Year of HRIS publications

<b>Year</b>	<b>Number of Documents</b>	<b>Cumulative</b>	<b>Percent</b>
1991	7	7	0.75
1992	9	16	0.96
1993	4	20	0.43
1994	3	23	0.32
1995	8	31	0.86
1996	9	40	0.97
1997	14	54	1.50
1998	8	62	0.86
1999	13	75	1.39
2000	16	91	1.72
2001	9	100	0.97
2002	8	108	0.86
2003	15	123	1.61
2004	11	134	1.18

2005	15	149	1.61
2006	18	167	1.93
2007	33	200	3.54
2008	29	229	3.11
2009	48	277	5.15
2010	64	341	6.87
2011	36	377	3.86
2012	28	405	3.00
2013	37	442	3.97
2014	38	480	4.08
2015	57	537	6.12
2016	62	599	6.65
2017	59	658	6.33
2018	63	721	6.76
2019	65	786	6.97
2020	71	857	7.62
2021	75	932	8.05
<b>Total</b>	<b>932</b>		<b>100</b>

Furthermore, the trend of HRIS research is presented in Figure 2 indicating that there were fluctuations in publications throughout the years. It is noticeable in the Figure that after the year 2002, there were an increasing trend till 2010 with few variations and after the year 2012 the number of publications slowly increased with fluctuations.



**Figure 2.** The annual and cumulative number of research articles on HRIS in Scopus database from 1991 until 2021.

**Source:** Authors’ own study, 2023

### 3.2 Type of publications

In this review, the distribution of document type was analysed by applying Scopus database. It is evident from the analysis that 6 types of documents were published from the year of 1991 to 2021. The article was the most frequently applied type comprising 62.87% (586) of the total publications, followed by conference paper (227; 24.38%), review (60; 6.44%), book chapter (44; 4.7%), and conference review (13; 1.36%). Lastly, book was the least frequently used publication in the HRIS research indicating less significance compared to article, conference paper, review, book chapter, and conference review (see Table 2).

**Table 2.** Type of documents

Type of Publications	Frequency	Percent
Article	586	62.87
Conference Paper	227	24.38
Review	60	6.44
Book Chapter	44	4.70
Conference Review	13	1.36
Book	2	0.25
<b>Total</b>	<b>932</b>	<b>100</b>

Cross-tabulation was also performed focusing on the publication year and the type of publication of HRIS research. The distribution of number of publication is shown in Table 3. The journal article is the most frequent publication type and the Table indicates that majority of the articles were published in 2006 representing 25 of the total published documents on HRIS. The second leading publication type was conference paper that reported highest number in 2020 followed by review in 2000, book chapter in 2017, conference review in 2007, and book in 2016. In addition, 2021 was the most productive year for publishing maximum number of research paper such as total 44 documents based on HRIS.

**Table 3.** Year and type of document of HRIS research

Year	Article	Conference Paper	Review	Book Chapter	Conference Review	Book	Total
1991	10	5	4	1	1	1	22
1992	13	8	3	2	1	0	27
1993	11	8	3	1	0	1	24
1994	12	4	2	1	1	1	21
1995	15	7	5	2	2	1	32
1996	12	8	4	2	1	0	27
1997	19	6	2	1	0	0	28
1998	11	8	2	3	2	1	27
1999	20	7	2	1	1	0	31
2000	15	4	6	1	0	0	26
2001	14	6	3	2	1	1	27
2002	20	7	2	2	1	0	32
2003	20	5	4	1	0	0	30

2004	21	6	2	1	1	1	32
2005	19	8	3	2	1	0	33
2006	<b>25</b>	5	3	1	0	1	35
2007	17	7	4	1	<b>3</b>	0	32
2008	16	6	3	2	1	1	29
2009	24	8	2	3	1	0	38
2010	20	8	3	2	0	1	34
2011	17	8	2	2	0	0	29
2012	17	5	3	1	0	1	27
2013	19	4	2	4	2	0	31
2014	16	4	1	1	0	0	22
2015	17	6	2	2	0	0	27
2016	16	8	2	3	1	<b>2</b>	32
2017	16	3	2	<b>5</b>	0	0	26
2018	23	5	2	1	0	0	31
2019	22	6	3	2	2	1	36
2020	24	<b>9</b>	2	2	2	1	40
2021	24	8	5	4	2	1	<b>44</b>
<b>Total</b>	<b>545</b>	<b>197</b>	<b>88</b>	<b>59</b>	<b>27</b>	<b>16</b>	<b>932</b>

### 3.3 Language of Publication

In the domain of HRIS research, ten different languages were identified since the year of 1991. As shown in Table 4, English was the dominant language for HRIS publications worldwide incorporating 889 published documents followed by Chinese (10; 1.11%), French (7; 0.72%), German (6; 0.65%), and Spanish (5; 0.51%). Other languages like Japanese, Portuguese, Russian, Persian, and Ukrainian were used in less than 5 publications relating to HRIS research.

**Table 4.** Language of publications

Language	Frequency	Percent
English	889	95.41
Chinese	10	1.11
French	7	0.72
German	6	0.65
Spanish	5	0.51
Japanese	4	0.4
Portuguese	3	0.37
Russian	3	0.36
Persian	3	0.29
Ukrainian	2	0.18
<b>Total</b>	<b>932</b>	<b>100</b>

### 3.4 Preferred journals

In terms of productive journals, Table 5 presented top 10 journals with their total publications, CiteScore 2018, and their publisher. Most notably, CiteScore developed by Elsevier in 2016, assesses the citation impact of documents including book series, journals, trade journals, and conferences which are covered by the Scopus database (Meho, 2019). Also, CiteScore of a journal includes a measure exhibiting recent published articles to average number of citations per year in that journal. However, the Human Resources for Health journal published 20 articles till the year 2019 reporting the CiteScore of 2.76. Afterwards, the second position was grabbed by International Journal of Human Resource Management through publishing 18 articles and representing 2.23 percent of overall publications on HRIS. Although, the Human Resource Management Review journal published by Elsevier ranked first in respect of CiteScore 2018, this journal is in fifth position in case of publishing 11 articles.

**Table 5.** The top 10 most productive journals on HRIS research

Rank	Journal	Total Publication	Percent	CiteScore 2018	Publisher
1.	Human Resources for Health	20	2.48	2.76	Springer Nature
2.	International Journal of Human Resource Management	18	2.23	2.71	Taylor & Francis
3.	Personnel Review	15	1.86	1.95	Emerald
4.	International Journal of Business Information Systems	15	1.86	1.14	Inderscience
5.	Human Resource Management Review	11	1.36	4.97	Elsevier
6.	International Journal of Human Resources Development and Management	10	1.24	0.56	Inderscience
7.	Plos One	9	1.11	2.97	Public Library of Science
8.	Human Resource Management International Digest	9	1.11	0.14	Emerald
9.	Human Resource Management	8	0.99	1.15	Wiley Online Library
10.	Advanced Series in Management	7	0.87	0.17	Emerald

### 3.5 Most influential authors

In this bibliometric review, the details of top ten prolific authors in HRIS research are investigated in Table 6 for the period of 29 years starting from 1991. Initially, Eckhardt, Andreas was the first in terms of publishing 18 papers on HRIS consisting 2.23 percent of overall publications. Laumer, Sven emerged as the second prolific author affiliated with the institute of Friedrich-Alexander-Universität Erlangen-Nürnberg from Germany publishing 16 articles. Despite, both Tansley, Carole and Weitzel, Tim published 12 articles each, their origin were United Kingdom and Germany respectively. Apparently, out of 10 most

prolific authors in HRIS publications, 4 authors originated from Germany while 2 authors came from Netherlands.

**Table 6.** List of the 10 most productive authors in the field of HRIS research

Rank	Author	Scopus author ID	Total Publications	Percent	Current affiliation	Country
1.	Eckhardt, Andreas	24484722800	18	2.23	German Graduate School of Management and Law gGmbH	Germany
2.	Laumer, Sven	24484821200	16	1.98	Friedrich-Alexander-Universität Erlangen-Nürnberg	Germany
3.	Strohmeier, Stefan	16043513000	15	1.86	Universität des Saarlandes	Germany
4.	Tansley, Carole	6603414846	12	1.49	Nottingham Business School	United Kingdom
5.	Weitzel, Tim	6701616351	12	1.49	Universität Bamberg	Germany
6.	Biering-Sørensen, Tor	25637106800	10	1.24	KøbenhavnsUniversitet	Denmark
7.	Bondarouk, Tanya V.	12762717700	9	1.11	University of Twent	Netherlands
8.	Calvo, Maria L.	7201476159	8	0.99	Universidad Complutense de Madrid	Spain
9.	Cheben, Pavel	6701395560	8	0.99	National Research Council Canada	Canada
10.	Harnisch, Bernd	6602177716	7	0.87	ESTEC - European Space Research and Technology Centre	Netherlands

### 3.6 Most cited articles

This paper also examined the scientific publications focusing the number of citations identified by the Scopus database. Waltman (2016) were of the view that, citation defines the citing authors' usage of cited works and also highlights the effect of cited works on the new works of the authors, and thus knowledge flows from the cited works to the citing authors. The purpose of frequent using of citation analysis includes evaluating or comparing the journals or articles (Ahmi, Rahim, & Elbardan, 2018). As shown in Table 7, the details of top 10 cited publications on HRIS are provided. The table also evidenced that the article by Strohmeier, S. was the top cited paper published in the journal of Human Resource Management Review with the total citation of 190. Next, the paper by Lengnick-Hall, M.L. and Moritz, S. was reported as second top cited paper published in 2003. Taking citation per year into account, paper by Strohmeier, S. positioned also as the top cited publication. Out of 10 top cited publications, the type of 2 papers was Conference Paper, 2 papers were termed as Review paper, and other 6 papers were reported as research article on HRIS.

**Table 7.** Top 10 cited documents in HRIS publication

<b>Rank</b>	<b>Title</b>	<b>Year</b>	<b>Author(s)</b>	<b>Journal name</b>	<b>Total Citation</b>	<b>Citation per Year</b>	<b>Type of Document</b>
1.	Research in e-HRM: Review and implications	2007	Strohmeier, S.	Human Resource Management Review	190	80.5	Article
2.	The impact of e-HR on the human resource management function	2003	Lengnick-Hall, M.L.; Moritz, S.	Journal of Labour Research	144	17	Conference Paper
3.	The use of technologies in the recruiting, screening, and selection processes for job candidates	2003	Chapman, D.S.; Webster, J.	International Journal of Selection and Assessment	131	12.5	Review
4.	The use of human resource information systems: A survey	2001	Ball, K.S.	Personnel Review	112	10.25	Article
5.	The effects of information management policies on reactions to human resource information systems: An integration of privacy and procedural justice perspectives	1999	Eddy, E.R.; Stone, D.L.; Stone-Romero, E.F.	Personnel Psychology	105	13.33	Article
6.	The use and impact of human resource information systems on human resource management professionals	2007	Hussain, Z.; Wallace, J.; Cornelius, N.E.	Information and Management	101	20	Article
7.	Human resource information systems:	2003	Hendrickson, A.R.	Journal of Labour Research	84	7.2	Conference Paper



	Backbone technology of contemporary human resources						
8.	The influence of technology on the future of human resource management	2015	Stone, D.L.; Deadrick, D.L.; Lukaszewski, K.M.; Johnson, R.	Human Resource Management Review	78	6.3	Article
9.	Liberating HR through technology	2003	Shrivastava, S.; Shaw, J.B.	Human Resource Management	77	4.67	Review
10.	Human resource information systems: A current assessment	1986	DeSanctis, G.	MIS Quarterly: Management Information Systems	76	2.86	Article

### 3.7 Contribution of regions/countries

In our study, the contributions of countries in HRIS publications are also analysed. The regions/countries are arranged based on their respective number of publication on HRIS. It was apparent from Table 8 that United States was the top publishing country from the period of 1991 to 2019 and the most productive university in the United States, producing 9 papers on HRIS research, was the University of Pittsburgh. Moreover, China was the second productive country publishing 12.5% of overall publications on HRIS and the Chinese Academy of Sciences contributed most in HRIS research. On top of that, United Kingdom (61, 23.5%), Germany (56, 23.5%), and India (61, 23.5%) attained the position of third, fourth, and fifth respectively.

**Table 8.** Top 20 countries with their productive institutions in HRIS research output

Rank	Country	Frequency	Percent	The most productive institution	Publications of institution
1.	United States	168	20.79	University of Pittsburgh	9
2.	China	76	9.41	Chinese Academy of Sciences	12
3.	United Kingdom	61	7.55	Nottingham Trent University	8
4.	Germany	56	6.93	Universität Bamberg	13
5.	India	44	5.45	Amity University, Noida	3
6.	France	34	4.21	Laboratoire d'Economie et de Sociologie du Travail	4
7.	Spain	33	4.08	Universidad Complutense de Madrid	7
8.	Australia	32	3.96	The University of Sydney	5
9.	Italy	29	3.59	Università degli Studi di Milano	4

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10.	Canada	28	3.47	National Research Council Canada	6
11.	Malaysia	26	3.22	Universiti Teknologi Malaysia	6
12.	Netherlands	26	3.22	University of Twente	7
13.	Indonesia	25	3.09	Universitas Indonesia	5
14.	Japan	22	2.72	Nagoya University	2
15.	South Africa	20	2.48	University of Witwatersrand	5
16.	Taiwan	15	1.86	National Taiwan Normal University	3
17.	Iran	13	1.61	University of Birjand	2
18.	South Korea	13	1.61	Kyung Hee University	2
19.	Switzerland	13	1.61	Organisation Mondiale de la Santé	3
20.	Denmark	12	1.49	Københavns Universitet	8

**3.8 Top subject areas for publications**

This bibliometric review also analysed multiple subject areas pertaining to HRIS publications. First and foremost, majority of the scientific publications based on HRIS came from the area of Business, Management and Accounting comprising 163 documents as presented in Table 9. Since HRIS is the combination of human resource and information systems, it is not surprising to include Computer Science as the second subject area for covering 156 documents on HRIS. The Engineering field incorporated the researches relating to HRIS including 128 publications followed by Social Sciences (117, 12.62%), Decision Sciences (97, 10.40%), Economics, Econometrics and Finance (70, 7.55%), Psychology (60, 6.44%) etc.

**Table 9.** Top subject areas relevant to HRIS study

<b>Rank</b>	<b>Subject Areas</b>	<b>Frequency</b>	<b>Percent</b>
1.	Business, Management and Accounting	163	17.45
2.	Computer Science	156	16.71
3.	Engineering	128	13.74
4.	Social Sciences	117	12.62
5.	Decision Sciences	97	10.4
6.	Economics, Econometrics and Finance	70	7.55
7.	Psychology	60	6.44
8.	Environmental Science	40	4.33
9.	Materials Science	30	3.22
10.	Arts and Humanities	22	2.34
11.	Multidisciplinary	13	1.36
12.	Others	36	3.84
	<b>Total</b>	<b>932</b>	<b>100</b>

### 3.9 Top keywords applied in HRIS publications

There are numerous keywords applied in HRIS Publications from the period of 1991 to 2019. As depicted in Table 10, the keywords are exhibited based on their frequency of usage. Most notably, ‘Information Systems’ is the most frequently applied keyword in HRIS publications appearing in 114 documents. The second position was grabbed by the keyword ‘Human Resource Management’ occurring in 12.5% of total publications. While 85 research paper applied the keyword ‘Human Resource Information Systems’, HRIS was applied as keyword in 71 publications. Other keywords namely Information Management (46), Human Resources (37), Information Technology (29), Management Information Systems (25), Resources Information (19) etc. were used in different publications pertaining to HRIS.

**Table 10.** Top frequently used keywords in HRIS research

Rank	Keywords	Frequency	Percent
1.	Information Systems	114	13.94
2.	Human Resource Management	110	13.61
3.	Human Resource Information Systems	85	10.52
4.	HRIS	71	8.79
5.	Information Management	46	5.69
6.	Human Resources	37	4.58
7.	Information Technology	29	3.59
8.	Management Information Systems	25	3.09
9.	Resources Information	19	2.35
10.	Knowledge Management	18	2.23
11.	E-HRM	17	2.10
12.	Personnel Management	16	1.98
13.	Human Computer Interaction	13	1.61
14.	Organizational Performance	12	1.49
15.	Strategic Planning	12	1.49
16.	Decision Support Systems	11	1.36
17.	Competitive Advantage	10	1.24
18.	Information Science	10	1.24
19.	Artificial Intelligence	9	1.11
20.	Project Management	9	1.11

### 3.10 Word cloud and text analysis of the document

In the current bibliometric analysis, the word cloud analysis was also produced for identifying most frequent words by using WordClouds ([www.wordclouds.com](http://www.wordclouds.com)), an online application aimed at choosing important words quickly appearing in the text (Hunt, Gao, & Xue, 2014). The word cloud analysis generated results with maximum number of words 200 and n scale

setting (see Figure 3). Apart from multiple keywords derived from the search in Scopus database regarding HRIS publications, there existed other words which were frequently used throughout the document. It could be observed from the analysis of word cloud that the visible and stand out words are HRIS, publications, research, management, human, information, documents, published, resource, paper. Afterwards, the frequency of top 20 words applied in the current document is also summarized and sorted based on the rank in Table 11.

**Table 11.** Frequency of top words applied in the document

<b>Rank</b>	<b>Word</b>	<b>Frequency</b>	<b>Percent</b>
1.	HRIS	57	7.05
2.	publications	48	5.94
3.	research	41	5.07
4.	management	35	4.33
5.	human	30	3.71
6.	information	26	3.22
7.	documents	22	2.72
8.	published	19	2.35
9.	resource	18	2.23
10.	paper	17	2.10
11.	articles	16	1.98
12.	review	16	1.98
13.	authors	14	1.73
14.	database	13	1.61
15.	scopus	12	1.49
16.	bibliometric	11	1.36
17.	systems	11	1.36
18.	analysis	9	1.11
19.	scientific	8	0.99
20.	citeScore	7	0.87



Furthermore, United States was the top publishing country from the period of 1991 to 2019 and the University of Pittsburgh was the most effective institution in United States. Majority of the scientific researches based on HRIS came from the area of Business, Management and Accounting. Finally, 'Information Systems' was the most frequently applied keyword in HRIS publications.

The limitations pertaining to this bibliometric review should be addressed. Initially, this study's data collection was limited to the Scopus database, and it made use of refinements such as "year," "document types," "source types," and "languages." Even though the Scopus database provides the most extensive collections of scholarly literature in business and social sciences, it rarely comprises all potentially related documents such as other journals, books, dissertations etc. Hence, future researchers are recommended to apply other international databases namely Google Scholar, Web of Science, or PubMed. Second, despite a full record as well as cited references are contained in the database, other useful information like differences between empirical and theoretical research papers, etc. were excluded from the current review. Thus, in order to characterize the bibliometric analysis, it is recommended for future study to do an extensive content analysis. Finally, the reduced sample of papers was another major limitation that restricted the interpretation of this study findings and limited us to study the co-word analysis. In spite of certain limitations, the current study is intended to provide relevant scholars with a panorama of global HRIS research along with the established guidelines for future research to the area and most pertinent research fields.

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