# Report On

# Role of cyber security in ensuring safety and security of data in financial institutions

Ву

Zahin Shahriar Zamee 18104131

An internship report submitted to the BRAC Business School in partial fulfillment of the requirements for the degree of Bachelors of Business Administration

BRAC Business School; Brac University June, 2023

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Declaration

It is hereby declared that

1. The internship report submitted is my/our own original work while completing degree at Brac

University.

2. The report does not contain material previously published or written by a third party, except

where this is appropriately cited through full and accurate referencing.

3. The report does not contain material which has been accepted, or submitted, for any other

degree or diploma at a university or other institution.

4. I/We have acknowledged all main sources of help.

Student's Full Name & Signature:

Zahin Shahriar Zamee

18104131

**Supervisor's Full Name & Signature:** 

Md. Shamim Ahmed

Deputy Registrar, Office of the Registrar
Brac University

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#### Letter of Transmittal

Md. Shamim Ahmed
Deputy Registrar
Office of the Registrar
BRAC University
66 Mohakhali, Dhaka-1212

Subject: Submission of internship report on "Role of cyber security in ensuring safety and security of data in financial institutions".

Dear Sir,

This is my pleasure to submit my internship report, which I made for the BUS 400 course as part of the internship. The report is about the experience I gained from my 3 month internship period at DBH Finance PLC and also the research project on Role of cyber security in ensuring safety and security of data in financial institutions.

I have attempted my best to finish the report with the essential data and instruction provided by Brac university. It was very challenging to complete the report with efficient and effective data and I have tired my best to follow all instruction provided by my supervisor. I trust that the report will meet the desires.

Zahin Shahriar Zamee
18104131
BRAC Business School

**BRAC University** 

Date: June 7, 2023

# Non-Disclosure Agreement

This agreement is made and entered into by and between DBH Finance PLC and the undersigned student, Zahin Shahriar Zamee, a student at Brac University has promised not to transmit confidential information relating to the Organization.

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Zahin Shahriar Zamee

# Acknowledgement

I would like to thank Mr Md. Shamim Ahmed sir for providing me with necessary guidelines to complete this report. He helped we with all my questions quires about the report and how to complete it properly. Without his help and guideline would not have completed the report in due time.

I would also like to thank DBH Finance PLC for selecting me for the internship program. It was a great opportunity to learn how the real corporate world works and I have gained many knowledge during my three-month internship period. My line manager Mir Arif vaiya also helped me in many ways during the internship period, he always answered all my question and tried to help me if I faced any difficulties in completing any tasks. Furthermore, my coworkers there also tried their best to help in way they could and I learned a lot of things from them.

# **Executive Summary**

lots of banks and other financial institutions are under great cyber-attack risk. Mass digitalization is good things for this line of business but it has also put them under the radar of many hacker groups both inside and outside of Bangladesh. Creating cybersecurity awareness is necessary to help the companies from benign a cyber-attack victim. The company might put necessary software's to stop the attacker from directly entering in the system but if the people working there not aware about cyber risks the attacker can gain access through them. Companies and banks are under the risk of cyber-attack, but the reality is that around 240 financial institution and government organization have been under major cyber-attacks in the recent years. A BGD e-Gov CIRT report states that," organizations have seen distributed denial-of-service (DDoS) cyber-attacks during its regular monitoring. Most of the ministries, including the foreign ministry, have witnessed the attacks". So, making people aware about cybersecurity is very important to ensure a safer work place.

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# List of Acronyms

DBH Delta Brac Housing

IMF International Monetary Fund

BIBM Bangladesh Institute of Bank Management

FSB Financial Stability Board

SOC Security Operation Center

BGD e-gov

CIRT Government Computer Incident Response Team

#### Chapter 1: Overview of Internship

#### 1.1 Student Information

Name: Zahin Shahriar Zamee

**ID:** 18104131

**Program:** Bachelor of Business Administration

**School:** BRAC Business School

Major: Finance and Computer Information Management

1.2 Internship Information

1.2.1 Internship details

Period: 3 months (from March 1, 2023 to June 1, 2023)

Company Name: DBH Finance PLC

**Department:** Customer Service

**Division:** Database Management

Address: Landmark Building (9th floor), 12-14 Gulshan North C/A, Gulshan-2, Dhaka-1212,

Bangladesh

**Phone:** +88 02 222282112

Email: dbh@dbhfinance.com

Website: www.dbhfinance.com

1.2.2 On-site Supervisors information

Name: Mir Mohammad Ariful Islam

**Position:** Senior Manager – Customer Service

Email: mirarif@dbhfinance.com

**Phone:** 09612334311

#### 1.2.3 Job Scope

For my three-month internship period, I worked in the customer service department at the head office of DBH Finance PLC. Although I was primarily assigned to the customer service department, I also had the opportunity to work with other departments during my internship. The head office is located in the landmark building of Gulshan-2 circle, and DBH occupies multiple floors in the building, each with different departments. The floor where I worked had CSD, Sales-Loan, Sales Deposit, Operation, and Branding departments. When I joined for my internship DBH was making changes to their rates because of inflation. The customers received message, email and physical letter confirming that the rates have changed.

During the first two weeks of my internship, I was responsible for attaching barcodes to letters that were sent, noting down the name, loan account number, and location of the client in the Bangladesh Post Office journal. After that, I was granted access to the operation and database system of DBH, where my main responsibility was to attach proof of delivery of the letters to the clients' profiles. Additionally, I had to verify clients' information from the system, such as their name, location, and NID, and update any necessary corrections. Throughout my three-month internship period, I attached around 7,000 accounts.

In addition to these tasks, I also had the opportunity to observe and work with other employees to learn the basics of different tasks. From the operation team, I learned how to sanction loans, what information to collect from clients, how to verify that information, and what to look for when approving or denying a loan application. From the Sales team, I learned how to collect and provide clients with loan applications, how to fill them out, and about their different rates for loans and deposits. I also gained knowledge about who should get what rate, what to do when rates go up, and how they approach different changes in rates and policy.

#### 1.3 Internship Outcomes

#### 1.3.1 Students contribution to the company

When I was hired as an employee at DBH Finance, they were going through major rate changes due to inflation. It was essential that all clients were informed about these changes. My task was to attach all the rate change letters with barcodes and note them down in the journal, making it easy for the company to locate them if needed. I also had to attach them to the clients' accounts as proof that they had been notified of the rate changes and had agreed to them. Given that DBH Finance has around 7,000 clients, attaching all of these letters was a

time-consuming task that needed to be done quickly. Thanks to my computer skills and efficiency, I was able to complete the task within the deadline and without any mistakes, which was beneficial for the company. If these letters weren't attached correctly to the clients' accounts, the clients could argue later that they were not notified about the rate changes and did not agree to them, which could cause problems for the company.

In addition to my main responsibilities, I provided feedback on how DBH Finance could improve its internship program, which tasks students enjoy doing, and what kind of work pressure is appropriate for students who are joining the corporate sector without prior experience. These will help them to improve their internship program in the future.

#### 1.3.2 Benefits to the student

I am extremely grateful that DBH Finance gave me the opportunity to work as an intern for them. As one of the leading home loan financing companies in Bangladesh, I was able to gain a lot of knowledge during my three-month internship. Prior to joining DBH, I had little idea of how a real company operates, with my knowledge limited to what I had gained from books and courses. However, working there taught me how to follow a strict routine of 9-to-5 job, how a company culture works, and how to adapt to it.

Furthermore, the internship provided me with an opportunity to understand how the housing finance industry operates in Bangladesh, including its challenges and future prospects. As a double major in finance and CIM, I had only learned a little about how database systems work in my courses, without having the opportunity to see their real-life implications. However, working at DBH gave me hands-on experience of working with real database systems, which helped me to further improve my knowledge.

In addition, the internship taught me how to work in a group and collaborate with people with different expertise. This was a valuable experience, as it helped me to prepare for the corporate world, and to know what to expect when I enter it. Working alongside people with higher qualifications also enabled me to establish connections, and their references will help me to build a stronger resume.

#### 1.3.3 Difficulties faced during the internship

My three-month internship at DBH Finance was a pleasant experience for me. The coworkers, managers, and supervisors were all very helpful and supportive throughout my time there. They made a concerted effort to ensure that I fully understood my assigned tasks and helped to ease my nervousness as a first-time employee. Additionally, the work culture and environment at DBH were excellent.

However, I did encounter some challenges during my internship. Adapting to the 9-to-5 routine of a corporate job was difficult for me, and I sometimes struggled to comprehend certain tasks. I also found it challenging to become proficient with the company's systems, but thanks to the guidance and assistance of my supervisor and colleagues, I was able to overcome these obstacles.

#### 1.3.4 Recommendations

An internship is a crucial opportunity for a final year student, and the company's approach to the program can greatly impact the student's experience. As for DBH, they can improve their internship program to facilitate better learning for the students. They could consider introducing an intern orientation program to help students familiarize themselves with their colleagues and their roles. Additionally, they could provide some training sessions to help the students acquire extra skills that would be beneficial in their future careers. Finally, they can assign the students with meaningful projects align with their interest and area of expertise.

#### Chapter 2: Organization part

#### 2.1 Introduction

The first, biggest, and most specialized housing finance institution in the nation is DBH Finance PLC, formerly known as Delta Brac Housing Finance Corporation Ltd. The company began operations in 1996 and has since recorded commendable growth in fostering property ownership within Dhaka as well as other significant cities across the nation. The company has also been actively advertising the real estate industry to a wide range of potential clients who have yet to realize their dream of having a home of their own. (DBH Finance, 2023)

Only DBH has maintained the highest 'AAA' credit rating among all Bangladeshi banks and financial institutions for 17 years running. High credit rating like this is clear sign of the financial safety, security, and strength of the concerned Bank or Financial Institution. Which is very important for the companies' depositors and other investors like shareholders and lenders. (Dhaka Tribune, 2023)

DBH Finance PLC is a leading housing finance company in Bangladesh, offering a range of financial products and services such as home loans, deposits, car loans, and personal loans. The company is committed to innovation and growth, and it has recently announced its plan to introduce Shariah-based products and services across all of its 14 branches located in major cities throughout the country. Over the years, DBH has served more than 54,000 customers across Bangladesh, and with the introduction of its new Islamic products, the company aims to expand its customer base and serve even more people.

Between the listed non-bank financial institutions, DBH, which is mainly focused on home loans, has an excellent history of distributing handsome amount of dividends each year. "The company declared 15% cash and 2% stock dividends for 2022. DBH Finance has made a profit of Tk102 crore in 2022, down slightly from Tk104 crore in 2021. The company has a solid capital adequacy ratio (CAR) of 28.37% and return on equity (ROE) stands at 13.34% as on December 2022." (Dhaka Tribune, 2023)

#### 2.2 Overview of the company

#### 2.2.1 History

"Delta Brac Housing Finance Corporation (DBH) is a leading housing finance institution in Bangladesh. It was established in 1996 as a joint venture between Delta Brac Housing Finance Corporation Limited, a subsidiary of BRAC Bank Limited, and the International Finance Corporation (IFC), a member of the World Bank Group." (DBH Finance, 2023). DBH was founded to offer low- and middle-income Bangladeshi groups financing for reasonably priced housing. Its goal is to enhance people's standard of life by giving them the opportunity to finance home. With BDT 100 million serving as its starting capital, the organization provided financing for building homes, remodeling, and acquisition. DBH now provides a variety of home loan services, such as home acquisition loans, house building loans, house remodeling loans, and home expansion loans as a result of the company's expansion over the years. "The company has also introduced innovative products like the "DBH Home Loan for Women" to encourage women's homeownership. In 2017, DBH was listed on the Dhaka Stock Exchange, becoming the first housing finance company in Bangladesh to go public. Today, DBH has a nationwide presence with 47 branches across Bangladesh." (DBH Finance, 2023)

#### 2.2.2 Core Values

#### **CORE VALUES**



Figure 1: Core Values of DBH

#### 2.2.3 Corporate Mission

"To strengthen the society of the country by continually expanding home ownership." (DBH Finance, 2023)

#### 2.2.4 Corporate Vision

"To be the leading financial institution in the country with satisfied customers and employees and to generate value for our shareholders while contributing to the well-being of the society." (DBH Finance, 2023)

#### 2.2.5 Strategic Objective

- "\*\* Focus on building deep and long-standing relationships with our clients, customers as well as real-estate developers, and constantly look to improve the quality of our products and services.
- \*\* Focus on developing our human resource talents.
- \*\* Ensure balanced growth with a disciplined approach to the management of risks and costs.
- \*\* Ensure adequate capital and liquidity to sustain our business over the long term." (DBH Finance, 2023)

#### 2.2.6 Departments in DBH Finance

- Management Committee
- Admin
- Brand and Communication
- Credit
- Customer Service
- Deposit Operation
- Deposit Sales
- Finance and Accounting
- HR
- Loan Sales
- Internal Audit and Accounting
- IT
- Legal
- Property Service
- Recovery
- Technical

#### 2.2.7 Product and Services

#### 2.2.7.1 Loans

#### 2.2.7.1.1 Apartment Loans

- Can finance up to 80% of the apartment value
- Up to 25 years repayment period
- Flexible approach and fast approval
- Attractive and competitive interest rate
- Partial prepayment without any charge
- Optional Property insurance

Figure 2: DBH apartment loan

#### 2.2.7.1.2 Own Construction Loans

- Loan Facility up to 80% of the estimated construction cost
- Flexibility of choosing Loan Tenure up to 25 years.
- Attractive Rate of Interest and 'No Hidden Cost'
- Accepting approved construction plan from RAJUK, City Corporation or Municipal Authority
- Disbursement in phases based on progress of construction work of the building with PEMI facility
- Expert Technical and Legal suggestions of in house panel of Civil Engineers and Lawyers
- Partial prepayment without any charge as per prevalent company policy along with full early settlement options available.

Figure 3: DBH Own Construction Loans

#### 2.2.7.1.3 Group Construction Loans

- DBH will finance up to 80% of the construction cost
- Allowed tenure of the loan is up to 25 years
- Attractive rate of interest.
- Loan can be paid in easy & affordable EMIs
- Short loan processing time: 3-5 working days
- Easy conditions
- Partial prepayment without any charge as per prevalent company policy along with full early settlement options available.

Figure 4: DBH Group Construction Loans

#### 2.2.7.1.4 Car Loans

- BH can finance up to 80% of the car value
- An eligible person can avail of the loan in 3-5 working days
- Loan tenure can be maximum of 7 years
- Loan can be paid in EMI
- Attractive rate of interest
- No hidden cost

Figure 5: DBH Car Loans

# 2.2.7.1.5 Home Equity Loans

- DBH will finance up to 80% of the property value
- Allowed tenure of the loan is up to 15 years
- Attractive rate of interest
- Loan can be paid in easy & affordable EMIs
- Short loan processing time: 3-5 working days
- Easy conditions
- Partial prepayment without any charge as per prevalent company policy along with full early settlement options available.

Figure 6: DBH Home Equity Loans

#### 2.2.7.1.6 Extension/Renovation Loans

- Minimal documentation
- DBH can finance for renovation/extension upto 80% of your property value by our estimation
- Tenure of the loan can be up to 25 years depending on the applicant's age
- Attractive interest rate under Adjustable Rate Loan scheme
- No hidden charges
- You can repay your loan through equated monthly installments.
- Partial prepayment without any charge as per prevalent company policy along with full early settlement options available.

Figure 7: DBH Extension/Renovation Loans

#### 2.2.7.1.7 Balance Transfer Loans

- 0% transfer fee
- Top-up your existing loan amount
- Quick loan processing
- Minimum legal papers requirement
- Up to 25 years' repayment period
- Attractive and competitive interest rate
- Partial prepayment without any charge
- Optional insurance

Figure 8: DBH Balance Transfer Loans

#### 2.2.7.1.8 Plot Purchase Loans

- Plot Loan offers financing for the purchase of a residential land/plot in an urban area.
- Purchasing of plot directly from a real estate company or housing society.
- Buying of a plot through resale directly from individual sellers.
- Attractive interest rates that make your Plot Loan affordable.
- DBH can finance up to 70% of the plot value.
- Allowable loan term may be upto 15 years.
- Expert legal and technical counseling.
- Partial or full early settlement options are available
- You can repay your loan through equated monthly installments
- No hidden charges

Figure 9: DBH Plot Purchase Loans

#### 2.2.7.1.9 Semi Pucca Construction Loans

- Loan Facility up to 70% of the estimated construction cost or value of the property in case.
- Flexibility of choosing Loan Tenure up to 20 years
- No approved plan is required for semi-pucca construction or structure
- Financing from the beginning to start up the construction
- Disbursement in phases based on progress of construction work with PEMI facility
- No Hidden Cost
- Partial prepayment without any charge as per prevalent company policy along with full early settlement options available.

Figure 10: DBH Semi Pucca Construction Loans

#### 2.2.7.1.10 Personal Loans

- Personal loan can be used to cater any lawful needs
- Easy and fast loan processing/approval
- Minimal documentation
- Loan amount can be up to Tk 20 lac
- Tenure of the loan can be up to 5 years
- No security needs to be pledged
- Attractive interest rate under Adjustable Rate Loan scheme
- No hidden charges
- You can repay your loan through equated monthly installment.

Figure 11: DBH Personal Loans

### 2.2.7.2 Deposit

# 2.2.7.2.1 Annual Income Deposit

- Profit is paid upon maturity.
- Deposit tenure is 3, 6, 12, 24 and 60 months.
- Minimum Deposit amount of BDT 10,000.
- Up to 90%, quick loan facility is offered at only 2% higher rate from the rate of FDR.
- Premature encashment if required (applicable after 3 months from the initial deposit date) before maturity at only 2% less than the rate of FDR.
- Auto FDR renewal option available.
- Eligibility: All individual and corporate investors.
- Privilege offer: Senior Citizens, Shareholders, and DBH Home Loan customers are eligible for preferential rates over the prevalent rate.

Figure 12: DBH Annual Income Deposit

#### 2.2.7.2.2 Day Wise Deposit

- Profit is paid upon maturity.
- Embedded auto renewal option.
- Deposit tenure is 90, 180, 360 days.
- Minimum Deposit amount of BDT 10,000.
- Up to 90% quick loan facility is offered at only 2% higher rate from the rate of FDR.
- Premature encashment if required before maturity (applicable after 3 months from initial deposit date) at only 2% less than the rate of FDR.
- Eligibility: All individual and corporate investors.
- Privilege offer: Senior Citizens, Shareholders and DBH Home Loan customers are eligible for preferential rates over the prevalent rate.

Figure 13: DBH Day Wise Deposit

# 2.2.7.2.3 Easy Deposit

- No penalty for part or full withdrawal of fund after 3 months of each installment.
- Quick Loan facility at only 0.50% higher rate than deposit if fund required in first 3 months.
- Minimum deposit amount Tk. 2500, no maximum cap for a deposit, multiple installments possible in a month.
- No penalty for missing any month's installment
- Profit accumulated daily based on deposit balance, so the annual effective return is higher
- Hassle-free Electronic Fund Transfer and payment.
- Embedded auto-renewal option.
- Term of the deposit: 12 months
- Eligibility: Individual depositors
- Privilege offer: Senior Citizens, Shareholders, and DBH Home Loan customers are eligible for preferential rates over the prevalent rate

Figure 14: DBH Easy Deposit

#### 2.2.7.2.4 Monthly Income Deposit

- Profit will be paid monthly, so annual effective return will be higher.
- Up to 85% quick loan facility against deposit.
- Embedded auto-renewal option.
- Monthly profit will be transferred to your bank account through Electronic Fund Transfer.
- Term of the deposit: 6,12,24,36 months.
- Minimum deposit amount: BDT 50,000/- only.
- Premature encashment if required before maturity (applicable after 3 months from initial deposit date) at only 2% less than the rate of FDR.
- Eligibility: All individual and corporate investors.
- Privilege offer: Senior Citizens, Shareholders and DBH Home Loan customers are eligible for preferential rates over the prevalent rate.

Figure 15: DBH Monthly Income Deposit

### 2.2.7.2.5 Quarterly Income Deposit

- Profit will be paid quarterly.
- Up to 85% quick loan facility against deposit.
- Embedded auto renewal option.
- Quarterly profit will be transferred to your bank account through Electronic Fund Transfer Network.
- Term of the deposit: 12,24,36 months.
- Premature encashment if required before maturity (applicable after 3 months from initial deposit date) at only 2% less than the rate of FDR.
- Eligibility: All individual and corporate investors.
- Privilege offer: Senior Citizens, Shareholders and DBH Home Loan customers are eligible for preferential rates over the prevalent rate

Figure 16: DBH Quarterly Income Deposit

#### 2.2.7.2.6 Flexible Fixed Deposit

- Minimum deposit amount of Tk. 10,000/-.
- Up to 90%, quick loan facility is offered at only 1% higher rate from the rate of FDR.
- Quick loan will be transferred to your bank account directly.
- Auto renewal facility.
- Term of the deposit: 6, 12 months.
- Premature encashment if required before maturity (applicable after 3 months from initial deposit date) at only 2% less than the rate of FDR.
- Eligibility: All individual and corporate investors.
- Privilege offer: Senior Citizens, Shareholders and DBH Home Loan customers are eligible for preferential rates over the prevalent rate

Figure 17: DBH Flexible Fixed Deposit

#### 2.2.7.2.7 DBH Premium Deposit

- Deposit tenure is 15 months.
- Profit will be paid on a cumulative basis with Lucrative rate of returns.
- Minimum Deposit amount of BDT 10,000.
- Up to 90% quick loan facility is offered against deposit at only 2% higher rate from the rate of FDR.
- Embedded auto renewal facility.
- Premature encashment if required before maturity (applicable after 3 months from initial deposit date) at only 2% less than the rate of FDR.
- Eligibility: All individual and corporate investors.
- Privilege offer: Senior Citizens, shareholders and DBH Home Loan customers are eligible for preferential rates over the prevalent rate.

Figure 18: DBH Premium Deposit

#### 2.2.7.2.8 Double Money Deposit

- Attractive interest rate for deposits.
- No hidden charge.
- Deposit amount will be doubled after a specific time.
- Up to 95% quick loan facility against deposit.
- Embedded auto renewal facility.
- Premature encashment if required before maturity (applicable after 3 months from initial deposit date) at only 2% less than the rate of FDR.
- Eligibility: All individual and corporate investors.

Figure 19: DBH Double Money Deposit

#### 2.2.7.2.9 DBH DPS

- Flexible monthly installment from Tk. 1000 to 100000.
- Flexible tenor from minimum 2 years to maximum 7 years.
- Flexible payment date between 1<sup>St</sup> day to 25<sup>th</sup> day of each month.
- Attractive fixed interest rate for DPS.
- Automatic monthly installment collection through BEFTN.
- 80% loan facility available any time of the cumulative value of deposit.
- Premature facility after completion of the third month.
- No maintenance fees or hidden charges.

Figure 20: DBH DPS

#### 2.3 Management Practices

To ensure a company's steady growth and success, good management practices are crucial. The management committee is responsible for making all significant decisions in an organization, and their decisions directly impact the company's performance. The management committee at DBH comprises of eight members, including the MD of the company, three DMDs, and four department heads. All members are highly qualified and driven towards making the company successful. They prioritize work efficiency and employee satisfaction.

To achieve a competitive advantage and enhance efficiency, DBH strives to bring out the best in every employee. They assign tasks according to employees' expertise but also encourage them to broaden their horizons by trying new things. Regular training programs are organized to ensure every employee performs at their best. For instance, DBH recently launched a new Islamic product, and employees from different departments received training catered to their respective work. During my three-month internship, I witnessed several training sessions arranged to maintain employee standards. These training sessions included customer service, new product information, work ethics, IT training, and leadership training for team leaders to efficiently manage their teams. These measures demonstrate DBH's commitment to employee development and the company's overall success.

The employees are given incentive like Eid Bonus, New year bonus, Profit share etc. to keep them motivated. This kind of incentives encourages them to work harder because they know that the amount of incentive they will get is dependent on their performance. The employees of the sales teams get certain amount of commission on their sales also. Incentives and bonuses makes the employee feel like a part to the company which motivates them to work hard and ensure profit.

# 2.3.1 Board of Directors



Figure 21: DBH board of directors

#### 2.3.2 Management and Executives



Figure 22: DBH Management and Executives

#### 2.4 Marketing Practices

Marketing is an essential and integral part of any organization, regardless of its type or the products and services it offers. It serves as a vital tool to create awareness among customers about the organization's current and upcoming offerings. Additionally, marketing plays a pivotal role in influencing and motivating consumers to make informed buying decisions. By effectively implementing marketing strategies, a business can enhance its visibility and reputation, contributing to its overall success.

Similarly, DBH recognizes the significance of fostering customer connections through its dedicated marketing team and well-thought-out plans. As a financial institution, cultivating

strong customer relationships holds paramount importance for DBH, and their marketing strategies play a pivotal role in achieving that objective. They consistently engage in initiatives to inform people about their latest products, highlighting the benefits they offer and emphasizing their competitive edge over rivals.

DBH implements a comprehensive range of marketing strategies, including:

**Digital Marketing:** DBH utilizes a diverse range of digital platforms as part of its marketing strategy, including Facebook, email, the company website, and search engine optimization. They employ these platforms to effectively communicate with their existing customers and provide them with important updates and information. Through targeted email campaigns, DBH keeps customers informed about new products, rate changes, and available offers. Furthermore, DBH maintains a strong online presence on their website and Facebook page, where they regularly share promotional videos, advertisements, news articles related to the company and its products, as well as updates about various company events. These initiatives contribute to DBH's comprehensive digital marketing approach, allowing them to engage with customers, raise awareness, and provide valuable information to their target audience.

Customer Relationship: Recognizing the significance of customer relationships, DBH places great importance on customer relationship management and has dedicated teams in place for this purpose. They actively seek feedback from customers, aiming to understand their preferences regarding products, desired interest rates, and how rate changes impact their decision-making process. By gathering information about customer behavior and preferences, DBH strives to make improvements to existing products or introduce new ones that better align with customer needs.

A prime example of this customer-centric approach is the introduction of DBH's new product, Islamic loan and deposit. This came about as a result of the considerable interest and demand expressed by deposit and loan customers for Islamic financial products. In response to their requests, DBH developed and launched the Islamic loan and deposit product, demonstrating their commitment to meeting customer demands and catering to their specific interests.

DBH's proactive engagement with customers and their willingness to adapt their product offerings based on customer feedback exemplify their dedication to providing excellent service and addressing the evolving needs of their clientele.

Collaboration: DBH understands the importance of collaborating with reputable real estate companies to enhance the quality of services provided to their customers. By partnering with esteemed developers and construction companies, DBH instills a sense of trust in customers, assuring them of the best possible service. Bproperty, an emerging property solutions provider in Bangladesh, has gained popularity among people, and DBH has entered into an agreement with them to streamline the home loan process for their clients. Through this collaboration, DBH is able to offer faster service and special rates exclusively to their clients, further solidifying their reputation and customer trust. Moreover, this partnership grants DBH exposure to both existing and future clients of Bproperty.

Additionally, DBH has signed a contract with the Ministry of Finance to provide home loans to government employees under a specific loan scheme designed by the ministry. This collaboration allows DBH to cater to the unique needs of government employees and further expands their customer base.

DBH also engages in collaborations with other financial institutions to deliver enhanced services and promote their products. One such collaboration is with the International Finance Corporation (IFC), through which DBH aims to provide more affordable home loans to its customers. By leveraging the support and expertise of IFC, DBH can effectively target the lower-middle-income segment and provide them with suitable financing options.

These strategic partnerships and collaborations reflect DBH's commitment to offering the best services and products to their customers, expanding their reach, and staying ahead in the competitive market.

**Events:** DBH actively engages in various real estate events and exhibitions as part of their marketing strategy. By participating in these events, including trade fairs and real estate fairs, DBH aims to showcase their products and services to a targeted audience. Since individuals interested in purchasing property or seeking home financing loans often attend such events, DBH can effectively attract new and potential customers from these gatherings. This presence allows them to engage directly with interested individuals, answer their queries, and establish connections that may lead to future business opportunities.

In addition to real estate events, DBH also takes part in events focused on social development and charitable causes. An example of this is their collaboration with BRAC University's James P. Grant School of Public Health for the Development Midwifery Project. This initiative aims to develop and train midwives, contributing to improved healthcare services.

DBH has actively supported this project by providing a donation of Tk 700,000 from their Corporate Social Responsibility (CSR) fund. Through their involvement in such social development and charitable events, DBH demonstrates their commitment to making a positive impact in the community.

By actively participating in events related to their industry as well as events that contribute to social causes, DBH not only showcases their products and services but also establishes themselves as a socially responsible organization, thereby enhancing their brand image and fostering community goodwill.

**Referral Program:** DBH has implemented a referral program to incentivize its existing customers. Through this program, customers are encouraged to refer their friends and family to DBH. If the referred individuals become customers themselves, both the existing customer and the new customer receive rewards as a token of appreciation.

The referral program serves multiple purposes for DBH. Firstly, it helps in building a loyal customer base by encouraging existing customers to actively promote DBH's services. These loyal customers are more likely to stay with DBH for an extended period and may also become repeat customers in the future. Secondly, the referral program acts as a cost-effective marketing strategy, as it relies on word-of-mouth recommendations from satisfied customers rather than traditional advertising methods. This can lead to acquiring new customers with a higher level of trust and confidence in DBH, thanks to the positive endorsement from someone they know.

By implementing a referral program, DBH not only incentivizes its existing customers but also benefits from the potential growth in customer acquisition and retention. It creates a win-win situation, rewarding customers for their loyalty and advocacy while expanding DBH's customer base through trusted referrals.

# 2.5 Financial Performance and Accounting practices

# 2.5.1 Financial Performance

# 2.5.1.1 Operational highlight of last 5 year

	Million Taka				
Operational Highlight	2017	2018	2019	2020	2021
Loan approvals	15,198	8,632	8,934	7,527	10,896
Loan disbursement	14,711	10,273	10,112	7,028	10,803
Cumulative					
disbursement	93,001	103,274	113,386	120,414	131,217
Cumulative sanction	97,148	105,780	114,714	122,241	133,137

We Can see that in 2017 they had the most amount of loan approval and disbursement and the following year it suddenly declined by a lot. But from the year 2019 and onwards it started to rise aging so the company steadily recovering.

# 2.5.1.2 Financial highlight of last 5 year

	Amount in Million Taka except Ratios, EPS				
	and BVPS				
Financial Highlights	2017	2018	2019	2020	2021
Profit before tax	1,492	1,607	1,555	1,498	1,721
Profit after tax	949	1,048	1,073	891	1,044
Shareholders' fund	4,358	5,040	5,809	6,431	7,244
Total deposit	41,188	43,319	43,411	43,827	43,978
Long term borrowing	2,610	2,219	1,954	1,709	2,223
Loan portfolio	42,243	43,848	44,522	42,750	43,831
Total balance sheet					
size	54,581	57,499	59,280	58,607	60,279
NPL ratio (%)	0.27%	0.30%	0.45%	0.41%	0.63%
Return on equity					
(average equity)	23.88%	22.30%	19.79%	14.56%	15.27%
Earnings per share	7.79	8.6	8.04	5.78	5.89
Earnings per share					
(restated)	5.35	5.91	6.05	5.03	5.89
Book value per share	35.76	41.36	43.36	41.72	40.87

Dividend cover ratio	2.6	2.46	2.3	1.93	2.36

Steady performance increase throughout the years.

# 2.5.1.3 Graphical Presentation of Financial Performance

#### 2.5.1.3.1 Profit

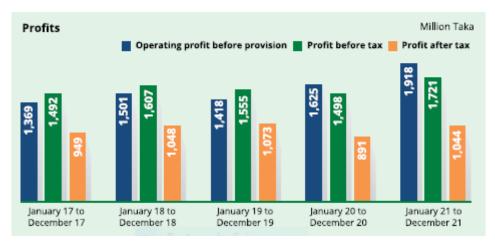


Figure 23: Last 5 year profit graph

# 2.5.1.3.2 Loan portfolio and performance



Figure 24: Last 5 year Loan portfolio and performance graph

#### 2.5.1.3.3 Total assets and fund



Figure 25: Last 5 year Total assets and fund graph

#### 2.5.1.3.4 Fund allocation

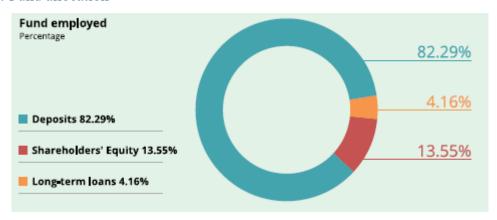


Figure 26: DBH Fund allocation graph

#### 2.5.1.3.5 Equity

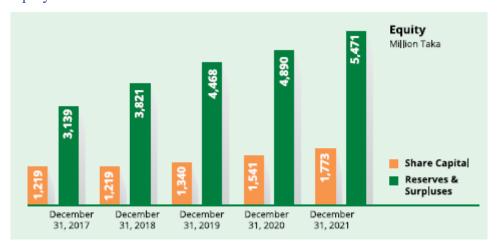


Figure 27: Last 5 year equity graph

#### 2.5.1.3.6 Deposit

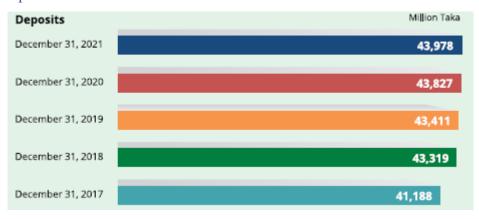


Figure 28: Last 5 year deposit graph

#### 2.5.1.4 Economic Value Added Statement (EVA)

EVA = Net operating Prof	it – Taxes – Charge	es for capital (Cost
of Capital)		
	December 31,	December 31,
Particulars	2021	2020
Net operating Profit	1,917,645,128	1,624,868,206
Provision for taxes	677,156,237	607,234,770
Net operating Profit after		
tax	1,240,488,891	1,017,633,436
Charges for capital		
Capital employed	7,885,494,424	7,006,242,223
Cost of equity (%)	7.75%	6.64%
Charges for capital	611,125,818	465,214,484
Economic Value added	629,363,073	552,418,952
Cost of equity reflects the	shareholders' eyne	cted return I atest

Cost of equity reflects the shareholders' expected return. Latest interest rate on 5 years Government Treasury Bond plus standard risk premium of 2% has been assumed to be the cost of equity.

# 2.5.1.5 Market Value Added Statement (MVA)

	December 31,	December 31,	
	2021	2020	
Market value of shares			
outstanding	13,667,051,933	14,273,603,001	
Book value of share outstanding	1,772,639,680	1,541,425,810	
Market value added	11,894,412,253	12,732,177,191	

# 2.5.2 Accounting Practices

# 2.5.2.1 Horizontal Analysis

# **Balance Sheet**

Taka in million

	2017	96	2018	%	2019	96	2020	%	2021	9
Cash	634.06	18%	798.51	26%	873.00	9%	575.24	-34%	558.07	-3%
Balance with other banks and financial institutions	10,697.16	82%	11,779.17	10%	13,028.73	11%	14,338.78	10%	14,725.96	3%
Investments	643.03	50%	607.82	-5%	462.11	-24%	489.02	6%	678.22	39%
Loans and advances	42,243.35	26%	43,847.70	4%	44,521.89	2%	42,750.38	-4%	43,830.51	3%
Fixed assets	178.47	20%	169.52	-5%	279.70	65%	289.88	4%	262.58	-9%
Other assets	184.78	43%	296.26	60%	114.50	-61%	163.71	43%	223.28	36%
Total Assets	54,580.85	34%	57,498.98	5%	59,279.93	3%	58,607.02	-1%	60,278.61	3%
Borrowing from other banks and financial institutions	6,515.42	7%	6,085.48	-7%	7,051.34	16%	5,571.06	-21%	6,175.67	11%
Deposits and other accounts	41,187.89	43%	43,318.72	5%	43,411.28	0%	43,826.87	1%	43,978.36	0%
Other liabilities	2,519.91	12%	3,054.80	21%	3,008.70	-2%	2,777.62	-8%	2,880.45	4%
Total Liabilities	50,223.22	35%	52,459.00	4%	53,471.32	2%	52,175.56	-2%	53,034.48	2%
Paid-up capital	1,218.52	5%	1,218.52	0%	1,340.37	10%	1,541.43	15%	1,772.64	15%
Share premium	55.00	0%	55.00	0%	55.00	0%	55.00	.0%	55.00	0%
Reserve and surplus	3,084.12	29%	3,766.46	22%	4,413.23	17%	4,835.03	10%	5,416.49	12%
Shareholders equity	4,357.64	21%	5,039.98	16%	5,808.60	15%	6,431.46	11%	7,244.13	13%
Total Liabilities and Shareholders' equity	54,580.85	34%	57,498.98	5%	59,279.93	3%	58,607.02	-1%	60,278.61	3%

Figure 29: Last 5 year horizontal balance sheet

# **Profit and loss account**

#### Taka in million

	2017	96	2018	%	2019	96	2020	96	2021	96
Interest Income	4,573.38	6%	5,855.19	28%	6,352.77	8%	5,908.79	-7%	5,053.57	-14%
Interest paid on deposits and borrowings etc.	2,967.58	13%	4,062.41	37%	4,644.85	14%	3,960.18	-15%	2,889.90	-27%
Net Interest Income	1,605.80	-5%	1,792.78	12%	1,707.92	-5%	1,948.60	14%	2,163.67	11%
Income from investment	43.48	322%	45.91	6%	26.84	-42%	24.15	-10%	125.11	418%
Commission, exchange and brokerage	149.92	13%	146.12	-3%	199.77	37%	155.86	-22%	177.52	14%
Other operating income	18.68	-8%	11.24	-40%	6.80	-40%	19.67	190%	16.47	-16%
Total operating income	1,817.88	-2%	1,996.04	10%	1,941.33	-3%	2,148.29	11%	2,482.77	16%
Operating expenses	449.18	13%	495.37	10%	523.66	6%	523.43	0%	565.13	8%
Operating profit	1,368.70	-6%	1,500.66	10%	1,417.66	-6%	1,624.87	15%	1,917.65	18%
Provision for Loans and investments	(123.77)	-313%	(105.87)	-14%	(137.21)	30%	126.71	-192%	196.60	55%
Profit before tax	1,492.48	7%	1,606.54	8%	1,554.87	-3%	1,498.16	-4%	1,721.05	15%
Provision for tax	543.48	-11%	558.64	3%	481.62	-14%	607.23	26%	677.16	12%
Profit after tax	949.00	21%	1,047.90	10%	1,073.25	2%	890.93	-17%	1,043.89	17%

Figure 30: Last 5 year horizontal profit and loss account

# 2.5.2.2 Vertical Analysis

# **Balance Sheet**

#### Taka in million

	2017	%	2018	96	2019	%	2020	%	2021	96
Cash	634.06	1.2%	798.51	1.4%	873.00	1.5%	575.24	1.0%	558.07	0.9%
Balance with other banks and financial institutions	10,697.16	19.6%	11,779.17	20.5%	13,028.73	22.0%	14,338.78	24.5%	14,725.96	24.4%
Investments	643.03	1.2%	607.82	1.1%	462.11	0.8%	489.02	0.8%	678.22	1.1%
Loans and advances	42,243.35	77.4%	43,847.70	76.3%	44,521.89	75.1%	42,750.38	72.9%	43,830.51	72.7%
Fixed assets	178.47	0.3%	169.52	0.3%	279.70	0.5%	289.88	0.5%	262.58	0.4%
Other assets	184.78	0.3%	296.26	0.5%	114.50	0.2%	163.71	0.3%	223,28	0.4%
Total Assets	54,580.85	100.0%	57,498.98	100.0%	59,279.93	100.0%	58,607.02	100.0%	60,278.61	100.0%
Borrowing from other banks and financial institutions	6,515.42	11.9%	6,085.48	10.6%	7,051.34	11.9%	5,571.06	9.5%	6,175.67	10.2%
Deposits and other accounts	41,187.89	75.5%	43,318.72	75.3%	43,411.28	73.2%	43,826.87	74.8%	43,978.36	73.0%
Other liabilities	2,519.91	4.6%	3,054.80	5.3%	3,008.70	5.1%	2,777.62	4.7%	2,880.45	4.8%
Total Liabilities	50,223.22	92.0%	52,459.00	91.2%	53,471.32	90.2%	52,175.56	89.0%	53,034.48	88.0%
Paid-up capital	1,218.52	2.2%	1,218.52	2.1%	1,340.37	2.3%	1,541.43	2.6%	1,772.64	2.9%
Share premium	55.00	0.1%	55.00	0.1%	55.00	0.1%	55.00	0.1%	55.00	0.1%
Reserve and surplus	3,084.12	5.7%	3,766.46	6.6%	4,413.23	7.4%	4,835.03	8.2%	5,416.49	9.0%
Total Shareholders equity	4,357.64	8.0%	5,039.98	8.8%	5,808.60	9.8%	6,431.46	11.0%	7,244.13	12.0%
Total Liabilities and Shareholders' equity	54,580.85	100.0%	57,498.98	100.0%	59,279.93	100.0%	58,607.02	100.0%	60,278.61	100.0%

Figure 31: Last 5 year vertical balance sheet

# **Profit And loss Account**

# Taka in million

	2017	%	2018	%	2019	%	2020	- 16	2021	%
Interest Income	4,573.38	251.6%	5,855.19	293.3%	6,352,77	327.2%	5,908.79	275.0%	5,053.57	203.5%
Interest paid on deposits and borrowings etc.	2,967.58	163.2%	4,062.41	203.5%	4,644.85	239.3%	3,960.18	184.3%	2,889.90	116.4%
Net Interest Income	1,605.80	88.3%	1,792.78	89.8%	1,707.92	88.0%	1,948.60	90.7%	2,163.67	87.1%
Income from investment	43.48	2.4%	45.91	2.3%	26.84	1.4%	24.15	1.1%	125.11	5.0%
Commission, exchange and brokerage	149.92	8.2%	146.12	7.3%	199.77	10.3%	155.86	7.3%	177.52	7.2%
Other operating income	18.68	1.0%	11.24	0.6%	6.80	0.4%	19.67	0.9%	16.47	0.7%
Total operating income	1,817.88	100.0%	1,996.04	100.0%	1,941.33	100.0%	2,148.29	100.0%	2,482.77	100.0%
Operating expenses	449.18	24.7%	495.37	24.8%	523.66	27.0%	523.43	24.4%	565.13	22.8%
Operating profit	1,368.70	75.3%	1,500.66	75.2%	1,417.66	73.0%	1,624.87	75.6%	1,917.65	77.2%
Provision for Loans and investments	(123.77)	-6.8%	(105.87)	-5.3%	(137.21)	-7.1%	126.71	5.9%	196.60	7.9%
Profit before tax	1,492.48	82.1%	1,606.54	80.5%	1,554.87	80.1%	1,498.16	69.7%	1,721.05	69.3%
Provision for tax	543.48	29.9%	558.64	28.0%	481.62	24.8%	607.23	28.3%	677,16	27.3%
Profit after tax	949.00	52.2%	1,047.90	52.5%	1,073.25	55.3%	890.93	41.5%	1,043.89	42.0%

Figure 32: Last 5 year vertical profit and loss account

#### 2.5.2.3 Cash Flow

	Maria	Amount in	Taka
	Notes	2021	2020
Cash flows from operating activities			
Interest receipts in cash		5,074,370,924	5,827,088,824
Interest payments		(3,052,499,223)	(4,471,792,244)
Dividend receipts		44,972,394	8,282,628
Fees and commission receipts in cash		177,520,507	155,864,097
Cash payments to employees, suppliers and various operating expense		(501,978,998)	(484,760,824)
Income tax paid		(646,436,953)	(491,037,085)
Receipts from other operating activities		16,323,437	18,680,996
Cash generated from operating activities before changes in operating assets and liabilities		1,112,272,088	562,326,393
Increase/(decrease) in operating assets and liabilities			
Loans and advances to customers	1	(1,082,426,820)	1,771,166,576
Investment in trading securities		(128,888,015)	(14,951,145)
Other assets		(77,246,445)	(7,219,707)
Loans and deposits from banks and other customers		151,485,493	415,590,303
Interest suspenses		22,888,384	12,076,868
Other liabilities	L	(6,023,628)	38,127,711
Cash generated/ (utilised) in operating assets and liabilities		(1,120,211,031)	2,214,790,606
Net cash flows from/(used in) operating activities	37	(7,938,943)	2,777,116,999
Cash flows from investing activities			
Net proceeds(Payments) for sale/purchase of Treasury Bond	1	(7,200,770)	38,247
Other investments		27,000,000	2,000,000
Purchase of property, plant & equipment		(10,127,450)	(19,660,043)
Proceeds from sell of property, plant & equipment	L	311,619	1,152,901
Net cash flows from/(used in) investing activities		9,983,399	(16,468,895)
Cash flows from financing activities	r	710 005 705	(4.220.205.474)
Net Receipt of Loan & Zero Coupon Bond		718,995,786	(1,330,385,174)
Cash dividend paid	-	(231,213,872)	(268,074,055)
Net cash flows from/(used in) financing activities		487,781,914	(1,598,459,229)
Net increase/(decrease) in cash and cash equivalents	-	489,826,370	1,162,188,875
Effects of exchange rate changes on cash and cash equivalents		2,162	(217)
Cash and cash equivalents (net off overdraft) at the beginning of the p	period	14,631,820,962	13,469,632,304
Cash and cash equivalents (net off overdraft) at the end of the period	37A	15,121,649,494	14,631,820,962

Figure 33: Cash flow of DBH

#### 2.5.2.4 Accounting principles

"The Financial Statements of Delta Brac Housing Finance Corporation Ltd. are prepared in compliance with International Accounting Standards (IAS) or International Financial Reporting Standards (IFRS), as applicable in the Bangladesh and any departure there from are adequately disclosed." (DBH Finance, 2023). The Audit reports of its financial statement states that," We have audited the financial statements of Delta Brac Housing Finance Corporation Limited (the Company), which comprise the balance sheet as at 31 December 2021, and the profit and loss account and statement of changes in equity and cash flow statement for the year then ended, and notes to the financial statements, including a summary

of significant accounting policies." So, it can be said that they are flowing the accounting cycle properly. Also, the company's financial performance and the cash flow reports end in line with the International Financial Reporting Standards (IFRSs).

#### 2.6 Operations Management and Information System Practices

In this current era information technology is an important and irreplaceable part of every modern business despite its size and operation. Use of IT helps to speed up every day process of work also enables accuracy and accountabilities. Keeping records data, monitoring, security it all becomes easy with help of IT.

DBH has their dedicated IT department to enable and monitor the use of information technology in the workplace. Some key examples of use of IT in the workplace are:

**Attendance System:** DBH uses a card punching attendance machine. A digital chip is inserted inside their ID cards and when they scan it in the machine it sends a signal in the software which collects necessary data from it. It monitors their name and when they are entering and exiting the office with date and time. Which allow the management to see which employees come in time and which ones comes late or leave early.

**Performance Monitoring:** DBH has built its own operation software system using oracle forms. They have separate module from every department at its logs everyone's activity and performance. For example, the sales team have to go for multiple visits with clients outside the office and every day in the closing time they have to submit their visit report in the system. They also need to submit the amount of loan or deposit they collected each month and many more. So, this system allows DBH to see which employees are showing excellent performance and which ones are lacking then take necessary steps according to the report.

**Database Management:** DBH runs its own server for their Email domain and data storage. They use oracle as their database system where they keep all their office, operation, employee and customer information. Because of the database system they can easily look up any customer information, all the customers have their separate profile which contains all information like their name, loan account number, address, their job information, what EMI they give every month etc. And using the system keeps them all organized so that they can be looked up easily at any given time.

**Email domain:** DBH has its own domain and every employee gets a company email with that domain after joining. Internal communication between department and coworkers are

done through these emails through. They use outlook for easier email communication. If one employee needs any information form another employee then they send an email through the system and then after receiving the email the other employee sends that data or information back. The communication and file sharing between employees are also logged in the system.

### 2.7 Industry and Competitive Analysis

#### 2.7.1 SWOT analysis

SWOT analysis is the analysis of a company's Strength, Weakness, Opportunity and Threats. It helps to understand a company's competitive advantage, positioning and strategic plan.

#### SWOT analysis of DBH

#### Strength:

- Strong brand recognition
- Wide range of product offering
- Service in almost every city
- Strong financial backing supported by parent companies
- Green financing
- Strong partnership and collaboration
- Customer loyalty
- Good brand image because of CSR
- Experienced management and executive team

#### Weakness:

- Only limited to housing market
- Regulatory changes by government
- Low diversification
- Heavy reliance on banks and real estate companies

#### Opportunity:

- Growing demand of owning house among people
- Introduce affordable plan for lower class people
- Digitalization of service
- Expansion in rural areas
- Partnership with developers and engineers

• Provided other financing service

#### Threat:

- Increasing competition
- Fluctuation of interest rates
- After COVID inflation
- Credit risk

#### 2.7.2 Porters five forces

Porter's five forces is used for analyzing a company's operating environment, competition and industry structure. By using the porter's five forces framework we can understand and find out how much customers influence the industry, what kind of power suppliers have, how is the competition, how easy to enter in the industry and what kind of rivalry exists between the companies in the industry.

Porter's five forces for DBH:

**Industry Rivalry:** Rivalry is high in the housing finance industry there are both local and international company providing housing finance service in Bangladesh. Their main competitor is IPDC finance but there are other actors in the market like IDLC finance, Lanka Bangla finance, National housing finance and investment ltd. And many more. Every one of these companies are trying their best to outperform each other so the competition is high.

**Threat of new entrants:** This is moderate for the housing industry. There isn't any big barrier to entry but building a strong brand image to get people trust is not easy.

Furthermore, there are some regulatory problems which can cause some challenges also creating new relationship with the developers and real estate companies is not easy.

**Bargaining power of buyers:** In the housing finance industry bargaining power of buyers is high. Customer have the option to choose from different companies with different rates and they often go to the ones which is preferable form them. Some other factors that influence buyers decision are reputation, customer service, loan terms and rates

**Bargaining power of suppliers:** Power of suppliers is low because most of the companies finance on their own or have parent company that provides fund for them.

**Threat of substitute:** Threat of new substitute product is very low. Housing finance is a specialized financial service and there are not many substitute that people can go for when they are in need of home loan. So, there's no high chance of another service coming that will help will people to buy house and land other than financial companies. People can sometimes borrow from relatives but that is not a factor.

#### 2.8 Summary and conclusion

"Delta Brac Housing Finance Corporation (DBH) is a leading housing finance institution in Bangladesh. It was established in 1996 as a joint venture between Delta Brac Housing Finance Corporation Limited, a subsidiary of BRAC Bank Limited, and the International Finance Corporation (IFC), a member of the World Bank Group." (DBH Finance, 2023). The management committee at DBH comprises of eight members, including the MD of the company, three DMDs, and four department heads. All members are highly qualified and driven towards making the company successful. They prioritize work efficiency and employee satisfaction.

DBH recognizes the significance of fostering customer connections through its dedicated marketing team and well-thought-out plans. As a financial institution, cultivating strong customer relationships holds paramount importance for DBH, and their marketing strategies play a pivotal role in achieving that objective. They consistently engage in initiatives to inform people about their latest products, highlighting the benefits they offer and emphasizing their competitive edge over rivals.

#### Chapter 3: Project part

#### 3.1 Introduction

Research project is a very good learning tool for students because it allows them to gain problem solving skill and helps them to get better understanding of concepts and theories. It also helps to get deeper understanding about the topic and real-life data allows them to understand the implications of the theories in real work environment. It highlights issues that have not yet been solved or remain a mystery. It gives students the chance to discuss problems and provide answers to queries that the public does not address. There are constantly fresh findings to be discovered in many different fields. Participating in research can help to not fall behind or gain new information about a subject. The knowledge and information gain form research can be used to expand on learning new concepts or built upon existing ones. People start a research project with existing opinions and ideas about a subject that they are researching. Additional viewpoint's view are discovered as more research goes on. It inspires them to think of new ideas while reflecting on their own viewpoint and It might lead them to think about new concepts of their own.

#### 3.1.1 Research topic

Role of cyber security in ensuring safety and security of data in financial institutions

#### 3.1.2 Background

We are living in a digital age and nowadays everything is going digital for making people's life easy. Now everything is connected and heavily reliable on internet and technology. Most of the financial institutions services such as mobile banking, digital payment systems, online banking, electronic transaction and money transfer all relay on the internet. This has made banking a lot easier and available for people but this also has a negative side. These technologies have also made the financial institutions more vulnerable, if any individual can penetrate the security system and get access to the data, they can do whatever they want. Throughout the years there have been many targeted attacks on banks and other financial institutions all over the world. Hackers have stolen money, client's information, banks confidential information and many more with these attacks. A prime example of this in our country is the Cyber-attack on Bangladesh Bank in 2016. Hackers target Bangladesh Banks reserve and stole 81 million dollars from the reserve.

According to The Business Standard interview with Allan Watanabe, Chief Executive Officer at "Pipeline" (which is a multinational cybersecurity service provider) he stated that,"

Bangladesh has a lack of awareness regarding data protection or cyber security, for which the country is at risk. The awareness needs to be increased" (The Business Standard, 2023). The also added the countries young generation is very familiar with the internet culture but the top officials at the top who are running the big financial institutions are not very familiar with and the importance of cybersecurity needs more awareness. Also, according to Dhaka Tribunes report, "In June 2022, the Bangladesh Institute of Bank Management (BIBM) conducted a study based on the situation of the banking sector as of 2020 which found nearly 52% of banks at grave risk of cyber-attacks" (Dhaka Tribune, 2022). Furthermore, recently, around 240 financial institution and government organization have been under serious and organized cyberattacks and most of these are DDoS attacks.

#### 3.1.3 Objective

Every research is done to achieve a goal or objective, weather it is to understand more about the topic or to get an explanation or to get a deeper understanding on any topic. In order for research to be completed is should achieve all it goals and objective.

My purpose of conducting this research is to:

- 1. Understand the importance of Cybersecurity
- 2. Sate of cybersecurity in financial instructions of Bangladesh
- 3. Previous cyber-attacks and their outcomes
- 4. How vulnerable are companies to cyber attack
- 5. How to prevent it and raise awareness
- 6. How can financial institution create strengthen cyber security
- 7. How is the government handling the situation and whether they are aiding the financial institutions

#### 3.1.4 Significance

The financial institutions are constantly adapting to the latest technologies which gives them many advantages but also making them vulnerable. More successful and profitable a company is more attractive they become for cyber-attack and if the attacker finds any weakness, this can cause the company a lot of trouble.

Financial institutions collect a lot of information from their customers such as their banking information, NID inform, name, location, list of properties and many more. Most of this information are stored in a server and if these are not protected properly then attackers with these data can make fake identification, black mail customers and customers will not trust the institution in future.

Also, it can affect their internal operation like their supply chain, the mobile services they provide etc. The attacking the financial institutions main system they can further attack their customers through the online services they provide. They can also collect all confidential banking information, someone direct access to money and many more.

ASM Shamim Reza, Chief Technology Officer at Pipeline stated that," There are two major shortcomings in Bangladesh in the context of cybersecurity – lack of awareness and a shortage of skilled human resources" (The Business Standard, 2023). Every day, increasing numbers of companies are falling to cyberattacks. No business, large or small, is able to get rid of it. Within the last couple of years, the amount of affected financial institutions has almost doubled. Attacks using ransomware have recently started to rise in Bangladesh. Almost nobody is safe from the attacks, does not matter if it is an individual or a big company. Furthermore, malware-based and phishing attacks are new to people in Bangladesh. Most of them how easy it is to get affected by them and some time they don't even know that they have been affected and when they figure it out its already too late. Another big concern is that malware without files will rule the next era which will be harder to detect. Therefore, we need to be more cautious and observant about how we use the technologies that are the provided to us.

So, creating awareness about cybersecurity and implementing strategies to prevent cyberattacks is very important in this digital age.

#### 3.2 Methodology

To collect data and information for the project I will collect qualitative data. In qualitative analysis method I will try to collect data from open-ended survey and interviews, existing research papers and literature review and finally case studies. I will interview my coworkers and office employees on their knowledge about cyber security and how to implement. Also do a survey via Google form to know how familiar people are with cyber security etc. Furthermore, I will gather information on papers that are already published to gather information from their findings.

The data's collected will be both primary and secondary because I will collect them data myself through interviews and surveys and also will be collecting data from existing research and news article. I will analyze the data's from research article and try to understand how is the current sustain to cybersecurity in financial institutions of Bangladesh, also what steps they have taken and how the initiatives are working. Then the data's collecting from the interviews are surveys will allow me to understand how the company I am working in is handling this issue and what strategies they have taken also if the strategies were successful or not. The survey will help me to understand what general people's knowledge is about cybersecurity and how familiar they are with the topic.

#### 3.2.1 Primary Data

- From interviewing employees at DBH
- Survey
- Workplace observation

#### 3.2.2 Secondary Data

- Research Papers
- News article
- DBH annual report
- Data provided by line manager

#### 3.3 Findings and Analysis

#### 3.3.1 Findings from secondary data

After studying all the research papers and news articles I found that lots of banks and other financial institutions are under great cyber-attack risk. Mass digitalization is good things for this line of business but it has also put them under the radar of many hacker groups both inside and outside of Bangladesh. Creating cybersecurity awareness is necessary to help the companies from benign a cyber-attack victim. The company might put necessary software's to stop the attacker from directly entering in the system but if the people working there not aware about cyber risks the attacker can gain access through them. For example, when a company gets targeted attack most of the time, they try to send malwares through unsuspecting email like winning coupon or getting a discount at a store. But opening these mails will drop the malware into the system and if it is a new or specialized malwares then security system will not also detect it until they get an update for it and by that time it will be

too late. So, implementing a good security system is not enough, training employees on cyber security is also necessary.

According to a report published by IMF in 2021, "The malicious criminals known as the Carbanak group, targeted financial institutions to steal more than \$1 billion during 2013-18 period" (Dhaka Tribune, 2022). Most the group like these work from different countries so it is very hard to catch them the deed is done and if somehow there are caught recovering the money they stole is near impossible. A study made by BIBM in June 2022 found that, in Bangladesh around the 52% of the banks under severe risk of cyber-attack. The government is trying to make the banks take more serious action to prevent cyber-attack, Bangladesh Bank gave out instruction to the banks to strengthen their cyber security and implement a SOC to overserve the security system continuously. But the problem is most of the banks are delaying the installations of SOC as it is a costly mater. A report made by the BGD e-Gov CIRT team found that, "insecure uses and/or access of internal application/portal by the employees' mobile devices may raise risk of exposure of organizations' critical assets" (Dhaka Tribune, 2022). So, train the employees is a necessary step to prevent cyber-attack.

From the previous paragraph we learned that the companies and banks are under the risk of cyber-attack, but the reality is that around 240 financial institution and government organization have been under major cyber-attacks in the recent years. A BGD e-Gov CIRT report states that," organizations have seen distributed denial-of-service (DDoS) cyber-attacks during its regular monitoring. Most of the ministries, including the foreign ministry, have witnessed the attacks" (The Financial Express, 2022). The report also added that," Telecoms carriers Grameenphone, Robi Axiata, Banglalink and Teletalk experienced coordinated cyber-attacks very recently, indicating their diluted network communications and showing their utter vulnerabilities to such malware infections" (The Financial Express, 2022). These types of attacks have started to rise in an alarming rate in the year 2016 around 379 attacks were attempted later in 2017 the number rose to 683 then in 2018 it got even worse and rose to 870. Among these attacks almost 64% were because of vulnerability issue. So, creating awareness in very important.

Metric	1Q15	2Q15	3Q15	4Q15
Encounter rate, Bangladesh	44.10%	39.70%	42.50%	57.20%
Worldwide encounter rate	17.60%	15.30%	17.80%	20.80%
CCM, Bangladesh	29.8	32.7	25	40.3
Worldwide CCM	5.4	8.4	6.1	16.9

Figure 34: Virus encounter rate and CCM

The rate of attack in Bangladesh is very high than any other country. As we can see in the four quatre of 2015 computer in Bangladesh are more prone to getting affected by malware such as Worms and Trojan because of the lack of public awareness. Now when an attacker sees that a country or business is vulnerable and they are not taking any steps to increase their cyber security, they increase their number of attacks.

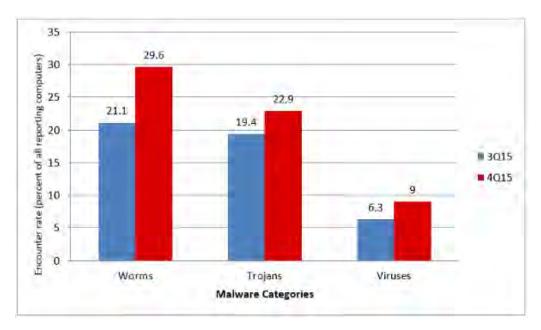


Figure 35:Malware encountered in Bangladesh in 3Q15 and 4Q15 by category

From the graph we can see that number of attacks took a big rise in just four months. Now these are the virus or malware that have been around for a long time. Most cybersecurity system can block them but recently two new malwares have been found which are Zanubis, which is an android banking Trojan and Zeppelin which is a ransomware. Most security system will not be able to detect them and only way to prevent them is make employees more educated on cybersecurity.

#### 3.3.2 Findings from secondary data

I conducted a survey to find out how familiar people are with cyber attack and cybersecurity and if they are capable of preventing a cyber attacking on their personal devices. Here's what I have found:

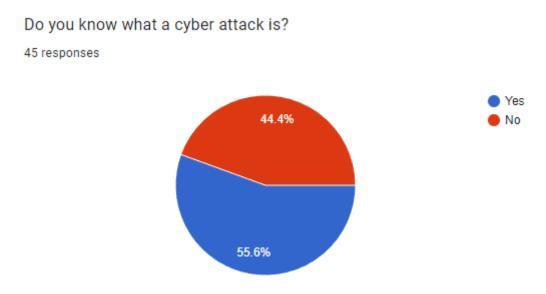


Figure 36: Peoples knowledge about cyber attack

From the survey around 56% people knew what a cyber-attack is. Whins means almost half the people have no idea what is a cyber attack so if they ever become a victim of it they will not even know how that their personal data is in danger.

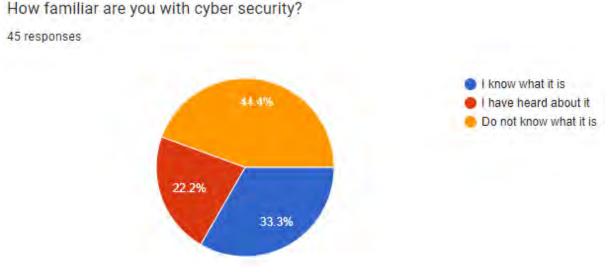


Figure 37: Familiarity with cybersecurity

From the group of people almost 70% people know what cybersecurity is, so it is safe to say that they have some kind of system like an antivirus protecting their device which will save them form the common type of malwares.

# Do you use antivirus software on your personal devices? 45 responses • Yes • No 66.7%

Figure 38: Use of antivirus to protect data

It is good to see that majority of the people use antivirus to protect their device which is very good against common or well know virus and malwares. But there are constantly new types of malwares being created and people need to careful about what download or which website they visit to keep secure form these because system like antiviruses can't catch new virus because there is no data of it in its database so only using antivirus is not enough to prevent cyber-attack.

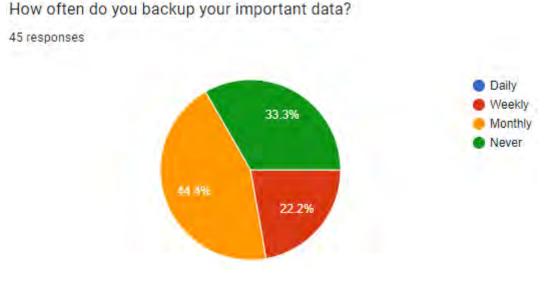


Figure 39: Data backup

Backing up data is important because a ransomware attack corrupts all the in the computer and it is not possible to recover that data.

#### How often do you change your passwords for online accounts?

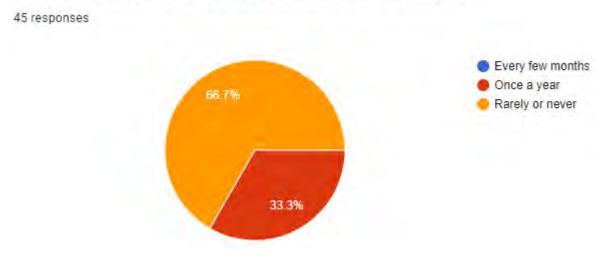


Figure 40: Password change

It is important to use different password for different account because if a hacker gets the password, then other accounts will be safe. We can see majority of people do not change their password. It is good practice to change password one a year so that accounts can be kept safe.

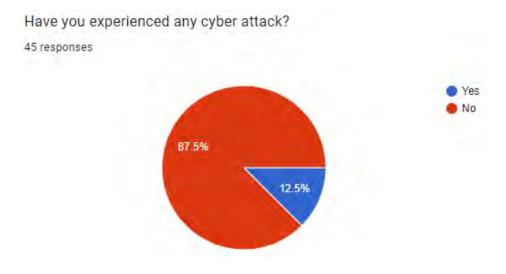


Figure 41: Experience cyber attack

We can see that majortiy of people have never faced a cyber attack. But it is very common not to get minor attack and not know about it. Beacue most of the time common and low effort attacks are stopped by antivirus softwares and perviouly we saw that majority of the people in the survey have antivirus protecting their deivices which is portecing them from attacks.

Have you ever received cybersecurity training or attended workshops on cybersecurity awareness?

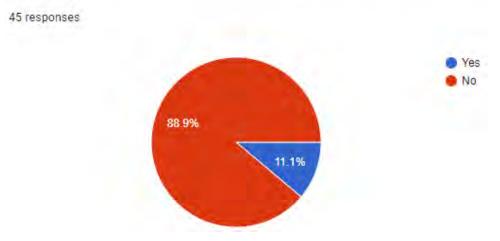


Figure 42: Cybersecurity training

The result shows that almost 90% of people have not gotten any training about cybersecurity. So, we can see that there is a lack of knowledge is making these people more vulnerable to attacks and they will not be able to prevent any attack also. Giving them proper training or knowledge will prepare them to face the danger of the digital world.

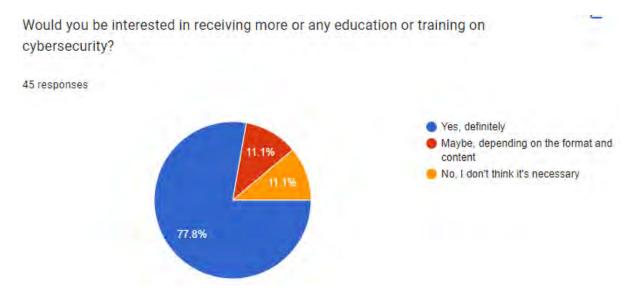


Figure 43: Interested to learn about cybersecurity

From the survey we can see that people are interested to lean about cyber security. It is import to know how to protect our data because we spent most of time dealing with technology and if we are not aware about the dangers then we can lose our data.

#### 3.4 Conclusion and recommendation

lots of banks and other financial institutions are under great cyber-attack risk. Mass digitalization is good things for this line of business but it has also put them under the radar of many hacker groups both inside and outside of Bangladesh. Creating cybersecurity awareness is necessary to help the companies from benign a cyber-attack victim. The company might put necessary software's to stop the attacker from directly entering in the system but if the people working there not aware about cyber risks the attacker can gain access through them.

So, the companies and government should hold mandatory events about importance of cybersecurity and how to implement. They should also train their employees so that they do not fall victim to targeted attacks. Finally, they should make sure that all of the system are protected by security systems that are up to date and monitor them on a daily basis.

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#### Appendix

#### Project proposal

#### **Problem Statement**

Role of cyber security in ensuring safety and security of data in financial institutions

#### **Background information**

We are living in a digital age and nowadays everything is going digital for making people's life easy. Now everything is connected and heavily reliable on internet and technology. Most of the financial institutions services such as mobile banking, digital payment systems, online banking, electronic transaction and money transfer all relay on the internet. This has made banking a lot easier and available for people but this also has a negative side. These technologies have also made the financial institutions more vulnerable, if any individual can penetrate the security system and get access to the data, they can do whatever they want. Throughout the years there have been many targeted attacks on banks and other financial institutions all over the world. Hackers have stolen money, client's information, banks confidential information and many more with these attacks. A prime example of this in our

country is the Cyber-attack on Bangladesh Bank in 2016. Hackers target Bangladesh Banks reserve and stole 81 million dollars from the reserve.

As we can see cyber security is a very crucial element for every financial institution and it is very important to make people aware of this and take necessary steps to strengthen it. With is this project my goal is find out how cyber security can ensure safety and security of data of financial institutions.

#### **Preliminary methodology**

To collect data and information for the project I will collect qualitative data. In qualitative analysis method I will try to collect data from open-ended survey and interviews, existing research papers and literature review and finally case studies. I will interview my coworkers and office employees on their knowledge about cyber security and how to implement. Also do a survey via Google form to know how familiar people are with cyber security etc. Furthermore, I will gather information on papers that are already published to gather information from their findings.

The data's collected will be both primary and secondary because I will collect them data myself through interviews and surveys and also will be collecting data from existing research and news article. I will analyze the data's from research article and try to understand how is the current sustain to cybersecurity in financial institutions of Bangladesh, also what steps they have taken and how the initiatives are working. Then the data's collecting from the interviews are surveys will allow me to understand how the company I am working in is handling this issue and what strategies they have takes also if the strategies were successful or not. The survey will help me to understand what general people's knowledge is about cybersecurity and how familiar they are with the topic.

#### Significance of the issue

The financial institutions are constantly adapting to the latest technologies which gives them many advantages but also making them vulnerable. More successful and profitable a company is more attractive they become for cyber-attack and if the attacker finds any weakness, this can cause the company a lot of trouble.

Financial institutions collect a lot of information from their customers such as their banking information, NID inform, name, location, list of properties and many more. Most of this information are stored in a server and if these are not protected properly then attackers with

these data can make fake identification, black mail customers and customers will not trust the institution in future.

Also, it can affect their internal operation like their supply chain, the mobile services they provide etc. The attacking the financial institutions main system they can further attack their customers through the online services they provide. They can also collect all confidential banking information, someone direct access to money and many more.

# **Project Timeline**

Week 1	Research topic and collect research papers
Week 2	Chapter 1
Week 3	Chapter 2
Week 4	Collect data from survey and news paper
Week 5	Chapter 3

#### Survey question

# Awareness about cybersecurity

Thank you for participating in this survey on cybersecurity awareness. The purpose of this survey is to assess your understanding of cybersecurity and its importance in today's digital world. Your responses will help us identify the level of awareness among individuals regarding cybersecurity. The survey consists of multiple-choice questions and should take approximately 5-10 minutes to complete. Your responses will be kept confidential. Let's begin!

approximately 5-10 minutes to complete. Your responses will be legin!	kept confidential. Let's
zahinshahriar44@gmail.com Switch account  Not shared	<b>©</b>
Do you know what a cyber attack is?	
O Yes	
O No	
How familiar are you with cyber security?	
O I know what it is	
I have heard about it	
O Do not know what it is	

Have you experienced any cyber attack?	
O Yes	
O No	
Do you know how to prevent cyber attacks?	
O Yes	
O No	
Do you use antivirus software on your personal devices?	
O Yes	
O No	

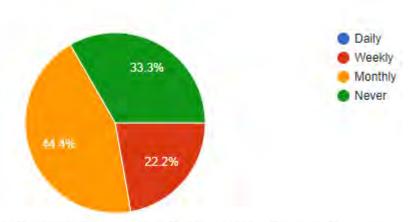
How often do you backup your important data?
O Daily
O Weekly
O Monthly
O Never
Have you ever received cybersecurity training or attended workshops on cybersecurity awareness?
O Yes
O No
How concerned are you about the security of your personal information online?
O Very concerned
O Somewhat concerned
O Not concerned

How confident are you in your ability to identify potential cyber threats?
O Very confident
O Somewhat confident
O Not confident
How often do you change your passwords for online accounts?
O Every few months
Once a year
O Rarely or never
Would you be interested in receiving more or any education or training on cybersecurity?
O Yes, definitely
Maybe, depending on the format and content
O No, I don't think it's necessary

#### Survey results

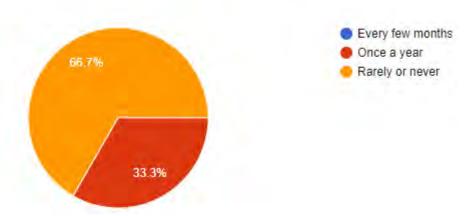
How often do you backup your important data?

45 responses



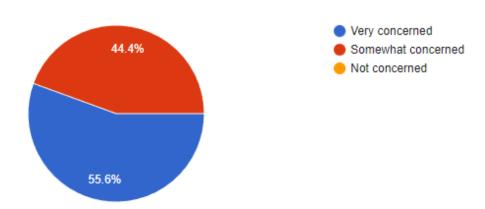
How often do you change your passwords for online accounts?

45 responses

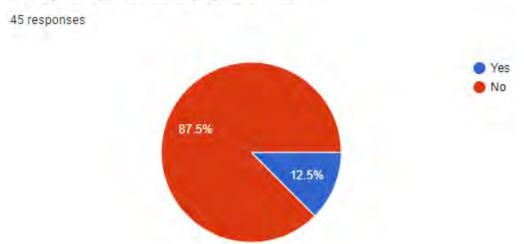


How concerned are you about the security of your personal information online?

45 responses

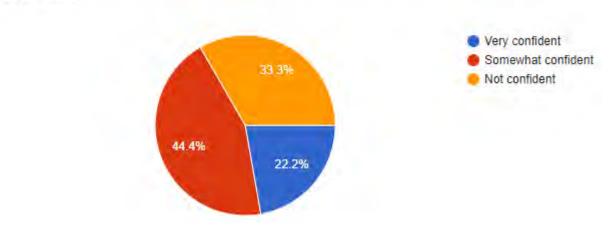


# Have you experienced any cyber attack?



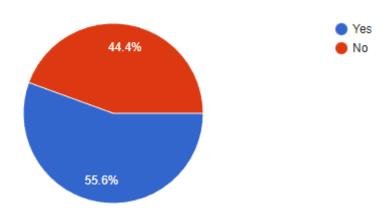
How confident are you in your ability to identify potential cyber threats?

45 responses



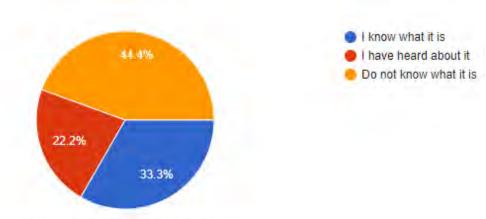
Do you know what a cyber attack is?

45 responses



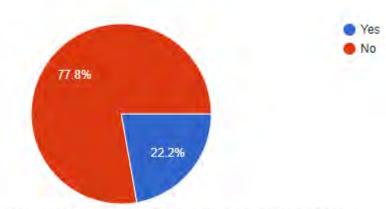
# How familiar are you with cyber security?

#### 45 responses



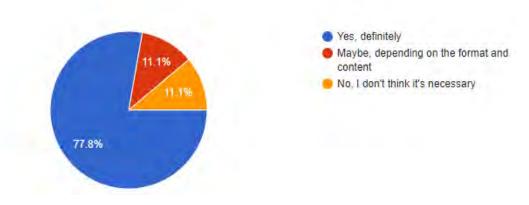
# Do you know how to prevent cyber attacks?

#### 45 responses



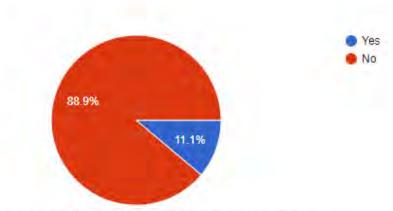
Would you be interested in receiving more or any education or training on cybersecurity?

#### 45 responses



Have you ever received cybersecurity training or attended workshops on cybersecurity awareness?

45 responses



Do you use antivirus software on your personal devices?

45 responses

