

Report On
The scope of making better decisions through the use of data
visualization by the Startups

By

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19104085

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

BRAC Business School
BRAC University
May, 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 have acknowledged all main sources of help.

Student's Full Name & Signature:

_____ **Arinulhaque** _____

Arinul Haque

Student ID: 19104085

Supervisor's Full Name & Signature:

_____ **Mr.Saif Hossain** _____

Mr. Saif Hossain

Assistant Professor, BRAC Business School

BRAC University

Letter of Transmittal

Mr. Saif Hossain
Assistant Professor
BRAC Business School
BRAC University
66 Mohakhali, Dhaka-1212

Subject: Submission of my internship report

Dear Sir,

I am submitting my internship report on "The scope of making better decisions by Startups through the use of data visualization." This report is essential for my bachelor's degree in business administration. In this report, I have discussed my internship learnings and experiences. This report also includes the project on which I worked. I interned at ShopUp from the 15th of January until the 15th of April.

I made every effort to end the report with the most important details and suggestions in the most concise and detailed manner possible. I am certain that the report will live up to expectations. Sincerely yours,

Arinul Haque _____

Student ID: 19104085
BRAC Business School
BRAC University
Date: 05/3/2023

Non-Disclosure Agreement

[This page is for Non-Disclosure Agreement between the Company and The Student]

This agreement is made and entered into by and between ShopUp and the undersigned student at BRAC University.....

Student's Full Name & Signature:

Arinulhaque

.....

Arinul Haque

Internship Company Supervisor's Full Name & Signature:

.....

WahidulHoqueAhad

Assistant Manager, ShopUp

Acknowledgement

I would want to express my gratitude to everyone who assisted me much throughout my internship and helped me accomplish my report.

Firstly, I would thank my academic supervisor I am grateful for his advice, encouragement, and inspiration this semester. Without his guideline, this report will not be completed.

Then, I would thank my office supervisor WahidulHoqueAhad. He supported me throughout my internship. He helped me in every possible way. It was my first time working in an office so I was nervous but my supervisor kept everything very simple. With his guideline, I am able to complete my Internship in ShopUp.

Finally, I am grateful to my company ShopUpfor providing me with the Internship program. The program lasted three months. They supplied me all the materials I required to finish the internship. My teammates were also really helpful and pleasant. They treated me as though I were a permanent employee. I am grateful to them as well.

Executive Summary

This executive summary gives an idea about the report on which I have worked on. The report is based on data visualization which is an important tool for startups and companies to quickly and effectively understand their data. It involves presenting raw and complex data in graphs, tables, charts, diagrams, maps, timelines, and dashboards. Data visualization helps businesses make quick decisions and identify patterns faster, making it easier for them to make easy decisions.

The main goal of this report was to identify how startup companies can use data visualization for their betterment. This report gives idea about uses of data visualization by Startups in different countries, examine the deficiencies faced by Startups, identify factors hindering the usage, and measure the impact of using data visualization in Bangladesh.

I utilized two ways to define my objectives for this report. First, I conducted secondary research to analyze my objectives. Following that, I conducted interviews with several of my company's professionals. They assisted me in identifying and analyzing my objectives.

Data visualization can be a valuable tool for startups, as it helps in decision making, risk management, and other positive ways. However, in Bangladesh, lack of awareness and infrastructure hinders the use of data visualization, hindering the growth and success of startups. To enhance their chance to be successful, startups should use data visualization for their specific goals and objectives.

Keywords:Data, Visualization, Dashboard, decision-making, ShopUp, Startups.

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List of Acronyms

LTD Limited

B2B Business to Business

HR Human Resource

KPI Key performance indicator

SME Small and medium-sized enterprises

Chapter 1: Overview of Internship in ShopUp

1.1 Student Information

Student Name: Arinul Haque

ID: 19104085

Department: BRAC Business School, BRAC University

Major: Finance and Computer Information Management.

1.2 Internship Information

Company Information:

ShopUp

Division: Mokam Ltd (Concern of ShopUp)

Department: Finance and accounts.

4th floor, SKS Tower, Dhaka

1.2.1 Period of Internship

3 months (Got an extension offer as performance criteria were fulfilled)

1.2.2 Supervisor's Information

WahidulHoqueAhad

Payment Manager-Treasury

ShopUp | 4th floor, SKS Tower, Dhaka

Mobile: +880 1713-322939

Email: wahidul@shopup.org

1.2.3 Job Scope:

As an intern at ShopUp, Mokam finance and accounts department my role was to assist my team to complete daily financial activity. My task was to process daily payments. From preparation of payment slips to recoding the payment in Excel. Besides that, another task was to process petty cash for the cash office in the company. Moreover, I also did participate in the internal audit of the company. There were two internal audits when I was an intern at ShopUp. Also, I did some financial data entry work. And finally, another task was to keep a record of a handwritten journal book. Below, I am giving the weekly journal of my work.

Weeks	Journal
1	In the first week, I got to learn about the financial work of Mokam Ltd. Also, I get to know about my teammate with whom I will be working for the next three months. Also, I got a little training session in the first week.
2	In week two I was assigned different financial work like making payments, checking the bank slips, etc.
3	After starting week 3 I learned about how to write a journal entry in the accounting software NetSuite. Then I started to work at NetSuite. My task was to enter the journal into the software.
4	This week I prepared a bank slip for the payments which were pending. ShopUp has different bank accounts so I had to make different bank slips for different banks.
5	This week my task was to assist my team in the internal audit of the company. The audit was about the DB house of Mokam around Bangladesh. My task was to look into whether the DB house had all the

	documents and based on that I input real-time data.
6	In the sixth week another audit in which I took part. This time I was assigned to check the JV number with the bank statement and recheck the transition amount with the bank statement.
7	This week I did make payment slips for the payments which are pending. Also, process petty cash for the cash officer.
8	This week I prepared the file for February of the bills which are the expense of ShopUp for February. I collect all the slips and store all the bills in one file.
9	This week I had a task to download 700 bank slips from the City live portal and rename them according to the reference number of each slip.
10	In this week again did make payment slips for banks like SCB, City. Also collected all the bill for the month on April.
11	In this week I assisted my in an internal audit. My task was to check the bank statement to our statement that amount is same or not.
12	In the last week I did the same work assist the team in audit.

Table 1 weekly journal

1.3 Internship Outcomes:

1.3.1 Student's contribution to the company:

As an intern in ShopUp, Mokam-Finance, and accounts my contribution was to complete day-to-day financial activity. I tried to help the company to achieve its financial goal. Moreover, I contributed by helping in the company's internal audit so the company can raise more funds so it can get better.

Process payment: One of my main tasks was to process the payment which was pending. I collected information from an email that was sent to me by the FCF member. And my task was to process those payments by making a payment slip to the bank. Also, I keep a record of those payments in a Google sheet.

Process petty cash: In ShopUp the cash officer needed petty very often. So I got an order from the cluster management to process the petty cash. And after that, my task was to process the petty cash through bank payment.

Preparing files: I was responsible for making files of the bills that come to the company. Those bills are day-to-day expenses to the company. So, I collected all of those and serialized them according to the date and kept all of those in one file. After, each month another new file was made by me.

Participate in the internal audit: During my internship period, there were 3 internal audits in ShopUp. And I feel lucky that I took part in all of those. Though my contribution was very small in the audit as I did not have excess in many things which were needed in the audit. However, I did everything possible by side during the internal audit.

1.3.2 Benefits to the student:

There are various advantages to working as an intern at ShopUp, Mokam- Finance and Accounts. Here are some of the primary advantages of working as an intern at ShopUp:

Learning opportunities: As an intern at ShopUp, I had hands-on experience and the opportunity to learn from experienced experts in their fields of interest. Because my degree is in finance, I have practical expertise in financial matters such as cash management, bill management, and payment management.

Exposure to a fast-growing industry: ShopUp is part of the rapidly expanding e-commerce industry. ShopUp is also one of the fastest-growing startups in Bangladesh. As an intern, I was able to get experience in this field while learning about current trends and best practices. Moreover, working in a fast-growing environment made me work faster and more efficiently.

Networking: As an intern, I met and networked with experts in their fields of specialization, as well as other ShopUp interns and employees. This benefited me in developing professional networks, which may lead to future career prospects.

Work experience: My internship at ShopUp gave me hands-on experience that will help me develop my resume and make it more competitive in the job market. A recent graduate needs to have some employment experience.

1.3.3 Problems/Difficulties (faced during the internship period):

My internship was the first time working in an office. So, at first, all the tasks were hard for me. As I was nervous at the start of my internship. However, as time passed by I coped with the working environment. My supervisor and co-workers were very helpful to me during my internship period. But, there was some problem that I faced during the internship and those are:

Not getting access to different portals: In ShopUp, interns do not have access to several Google Sheets, Financial Software, as well as Accounting Software. As a result, I was unable to gain hands-on experience with such programs. They also do not give financial information to any intern, which made preparing the internship report tough.

Duration of the internship: My internship was for three months. It is a short period. When I had finished coping with everything at work, my internship was ready to come to an end. If I had more time, I believe I could have learned a lot more useful information.

1.3.4 Recommendation:I got the opportunity to work closely with a team of experienced professionals who were always eager to guide and teach me during my internship at ShopUp. The corporate atmosphere was collaborative and inclusive. But, I would like to recommend to ShopUp that they reduce the number of working days from six to five. And it was quite difficult to work six days a week at the workplace. Several employees were also weary for this six-day workweek. Thus, my advice to ShopUp is to set up a 5-day office week.

Chapter 2: Organization Part (About ShopUp)

2.1 Introduction:

ShopUp is a rapidly expanding full-stack B2B commerce platform for small enterprises in Bangladesh. ShopUp Starts its journey back in 2018. ShopUp gives small companies easy access to B2B sourcing, last-mile logistics, and digital credit. ShopUp empowers small businesses to grow up by providing them with goods on credit and also gives them logistical support. ShopUp's business model is very unique. All their product are interconnected with each other. ShopUp's mission is to leverage technology to empower businesses by providing easy access to B2B sourcing and last-mile logistics. ShopUp continually tries to help small businesses by introducing new products. Their latest digital credit service onkur is one of them. It allows business owners to buy products on credit and pay later. It helps the business to grow more. In this way, ShopUp is helping the economy of Bangladesh as small businesses are expanding rapidly and the GDP is increasing.

2.2 Overview of the Company:

ShopUp is a full-stack B2B commerce platform for small businesses. ShopUp has different products to offer their customer. All of their products are interconnected with each other. All complement each other and for that reason, the business of ShopUp is going so well. Let's look at the products of ShopUp.

Mokam: Mokam starts their journey in December 2019. Mokam is ShopUp's supply chain. Mokam is the largest B2B e-commerce platform in Bangladesh. Mokam sells a wide range of

items to shops and offers next-day doorstep delivery. Mokam presently supplies items in more than 60 districts across the country. Mokam has recently received several honors, including the best E-Commerce platform (B2B) winner in retail awards Bangladesh 2021, most sustainable retail initiative honorable mention in retail awards Bangladesh 2021, and best use of technology honorable mention in retail awards Bangladesh 2021.

REDX: REDX was launched on 1st March 2020 by ShopUp. REDX is the largest last-mile logistics network in Bangladesh. RedX provides end-to-end services such as package delivery for SMEs, documents and parcel couriers for individuals, and business logistics solutions for big enterprises. RedX provides delivery to all 64 districts in Bangladesh. The Bangladesh-India Business Council rated the organization the best logistics company in Covid-19 for offering the greatest services.

Onkur:Shopup's financing platform strives to make appropriate finance solutions available to CMSMEs and agri-businesses. It Provides the retail shop owners to buy their items from Mokam on credit. So, small shops can buy more on credit and pay later. This helped many shop owners to expand their business.

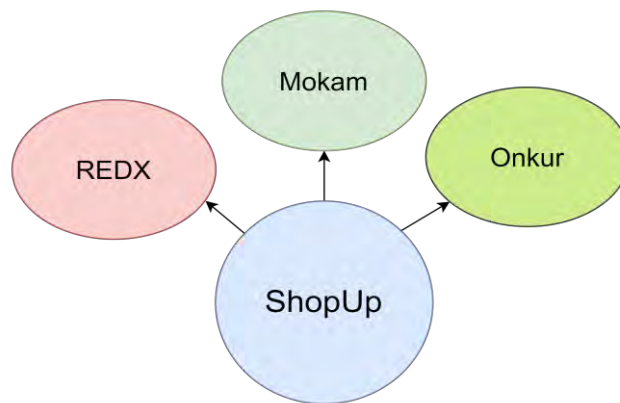


Figure: Associate Business of ShopUp

Figure 1 Associate Business of ShopUp

2.3 Vision and mission:

The vision of ShopUp is to help you build, manage & grow your business. And the mission statement of ShopUp is “Enabling Small Businesses via Technology”.

2.4 Management Practices:

Engage with employees: In ShopUp when managers assign a task to the employee they not only order the employee to do it but also engage with the employee. In this way the employee gets motivated and works even harder, making a better plan to achieve the company’s objective.

Decision-making based on data: In ShopUp they take important decisions based on their data. They first identify new trends, patterns, and customer behavior based on their data. And after looking at the data they have they set goals and make decisions.

Good leadership: Shopup’s management provides excellent leadership to their employee. The management gives a clear goal to their employee and with that, they give regular feedback to their employees. Which helps employees to understand their mistakes. Moreover, ShopUp gives rewards like promotion incentives to their employee for good work.

Use technology to monitor the company’s performance: ShopUp take the help of the technology to see if the company’s goals are fulfilling or not. ShopUp uses a KPI dashboard to see the market gap. The KPI dashboard also shows the number of sales and target which has to be fulfilled by the employees. That’s how ShopUp is maintaining its performance.

2.4.1 Human resource planning process of ShopUp:

Recruitment and selection process: ShopUp's recruiting and selection process is meant to guarantee that the company recruits the finest people who share its vision, values, and culture. Let's see the steps of ShopUp’s recruitment and selection process.

Job Posting: First, ShopUp publishes job positions on different job sites, social media platforms, and its website, LinkedIn. The job postings describe the employment role, duties, education, and other criteria.

Application Screening: After receiving job applications, ShopUp's HR staff examines them to identify applicants who satisfy the minimum prerequisites for the job vacancy. Then they select a few candidates for the following round.

Interviews: Shortlisted candidates were invited to interviews. Several rounds of interviews with HR, recruiting managers, and other team members may be part of the interview process. The interviews are meant to evaluate the candidate's knowledge, abilities, experience, and cultural fit.

Reference Checks: For the final applicants, ShopUp does reference checks to verify their career history, job performance, and character.

Offer and Onboarding: After finishing the recruiting process, ShopUp sends a job offer to the selected applicant, which includes information regarding salary, benefits, and other employment terms and conditions. The recruit is then put through an onboarding process to become familiarized with the company's culture, beliefs, and policies. The HR staff organized a short orientation program for the new employees.

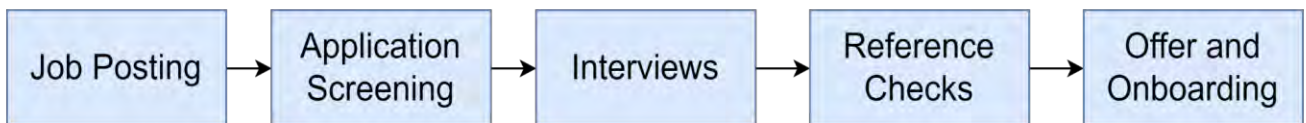


Figure: Hiring process of ShopUp

Figure 2 Hiring process of ShopUp

2.5 Marketing Practices:

Marketing strategy: To discuss the marketing strategy of ShopUp we can show it through the marketing mix method, which is known as 4P – Product, Price, Place, and Promotion. These are elaborated here

Product: ShopUp’s main aim is to provide a wide variety of products and services to small entrepreneurs, who do not have easy access or the ability to join the marketplace directly. ShopUp offers an online marketplace, payment solutions, supply chain management, and many other facilities for new businesses. Their three main products are Mokam, REDX, and Onkur.

Mokam is a supply chain, which collects a wide range of products from small retail shops and businesses, and supplies around almost the country. Whereas, REDX works as a delivery company that provides package deliveries, documents, parcel couriers, and cargo to all districts of Bangladesh. Onkur offers financial support to small entrepreneurs, providing products on credit, which they can pay afterward.

They also provide distribution services through Unicorn Distribution Ltd. All these branches of ShopUp intend to help small projects to flourish by providing them necessary resources and facilities for their future.

Price: As ShopUp’s main target is to help small endeavors with limited budgets, they always try to offer comparatively competitive pricing for their products and services. As we know through their project –Onkur” they offer installment payment and credit purchasing. It wished to develop perfect fintech solutions, such as modified payment plans, available to CMSMEs and agri-businesses to help and organize their credits. Their delivery rates are comparatively budget-friendly than other substitute companies.

Place: Most of ShopUp’s product operates through online platforms, as all of its services and products are collected and sold via their websites. Both Mokam and REDX have separate apps, where retail store owners can acquire their products from the first one and deliver using the latter

one. Both of the projects have their hubs around the country for storing and distributing which also show their physical presence.

Promotion: Like other startup companies, ShopUp has its promotional strategies including social media advertising and publicity. They also offer referral benefits and bonuses to existing clients to encourage them to promote their friends and relatives to join ShopUp for their business success.



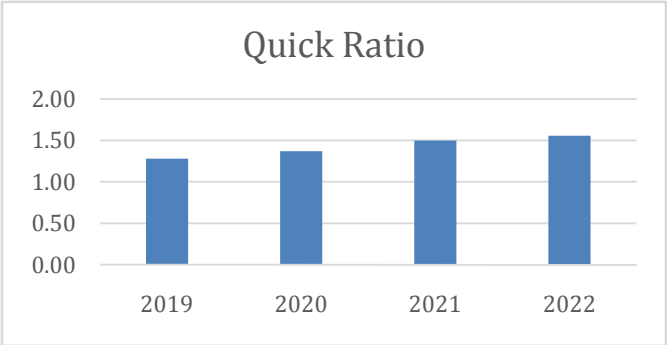
2.6 Financial Performance :

As ShopUp is a private limited company so they do not share financial reports with the public. So I interviewed one of the financial managers in ShopUp and he gave me an idea about their financial condition. Based on that, I am doing a ratio analysis of ShopUp to evaluate its financial performance.

Quick Ratio:

Year	2019	2020	2021	2022
Quick Ratio	1.28	1.37	1.50	1.56

Table 2 Quick Ratio

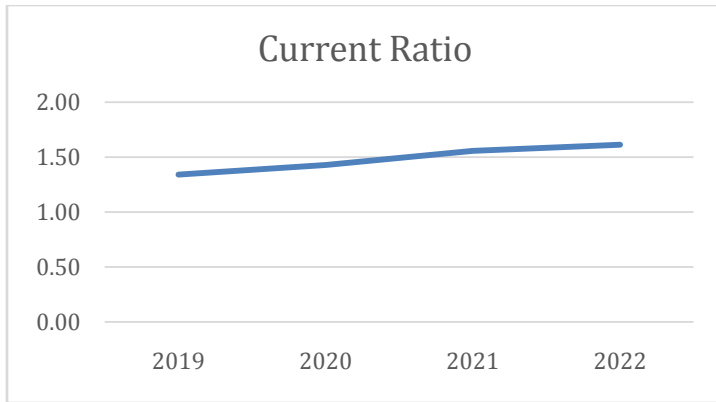


Here, the quick ratio from the year 2019 to 2022 is given. The quick ratio is the ability of the company to pay its liability. As the year is going ShopUp is giving their liability. As a startup company initially ShopUp got funds that they are giving day by day. Quick ratio evaluates their capability of giving the liability.

Current Ratio:

Year	2019	2020	2021	2022
Current Ratio	1.34	1.43	1.56	1.61

Table 3 Current ratio

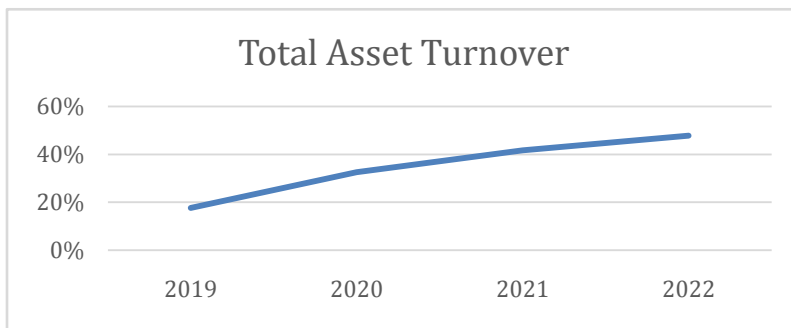


The current ratio of ShopUp was 1.34 in 2019 and in 2022 it is 1.61. ShopUp is giving their current liabilities with their asset like cash. As we know that a current ratio of 1.5 or higher is good for a company and ShopUp’s 2022 current ratio is above that. So ShopUp has a good current ratio.

Total Asset Turnover:

Year	2019	2020	2021	2022
Total Asset Turnover	18%	32%	42%	48%

Table 4 Total Asset turnover

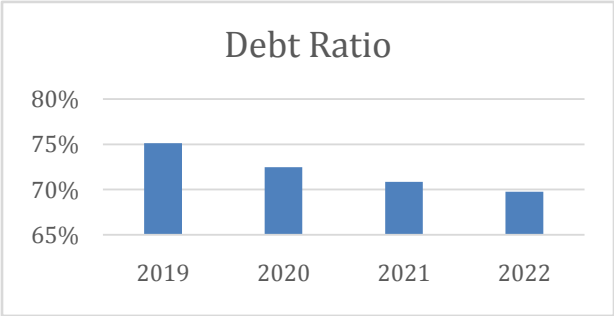


ShopUp’s asset turnover ratio is increasing year by year. This means ShopUp is generating revenue with their asset. As the ratio percentage is high we can say that it is making good revenue using their asset.

Debt Ratio:

Year	2019	2020	2021	2022
Debt Ratio	75%	72%	71%	70%

Table 5 Debt ratio

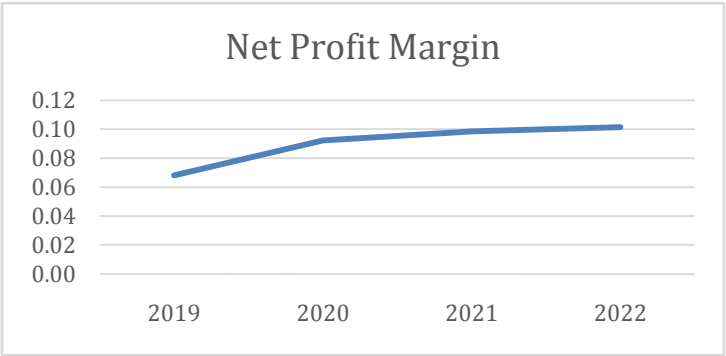


In the early stage of ShopUp, they raised funds. For that reason in 2019 you are seeing the debt ratio is high. The maximum of their asset was from the debt. But as years passed they are returning the debt and the debt ratio is decreasing. However, a big number of debt is left which they will need to pay.

Net profit margin:

Year	2019	2020	2021	2022
Net Profit Margin	0.07	0.09	0.10	0.10

Table 6 Net profit margin



The net profit margin of ShopUp from 2019 to 2022 is 0.07 to 0.10. The percentage is low because ShopUp to needs pay their debt which they raised in the starting phase of the company. For that reason, their net profit margin is not high.

2.7 Operations Management and Information System Practices:

Operations Management Practices:

Supply Chain Management: ShopUp's Mainly supply chain management is its Mokam. ShopUp collect products from different sources. After that, they sell those products to the retail shop owners. ShopUp has a good supply chain that helps to run the operation smoothly. A strong supply chain management ensures that the retail ShopUp owners get a fresh product from the source.

Inventory Management: ShopUp's inventory is used for Mokam. As in Mokam, it provides goods to retail shops all over the country. As it needs to store products to run the operation. ShopUp forecast the demand and accounting to that they manage their inventory. As a result, the damage rate is very less.

Quality Control: When ShopUp collects products for Mokam it is important to ensure the quality of the product. ShopUp also ensures the products are high quality and also ensures customer satisfaction. ShopUp takes customer feedback and maintains a high standard of quality. To get new customers the quality of the product is really important. A good quality product helps to get new customers.

Information System Practices:

Data Analytics: ShopUp uses data analytics to make better decisions. ShopUp collects data on consumer behavior, sales number, and Inventory level. After collecting the data ShopUp decides to enhance its operation.

E-commerce Platform: ShopUp has a very friendly easy-to-use e-commerce platform which is their app for Mokam. Where retail shop owners can find all their necessary products in one place. Shop owners can list their products there, then can choose the payment method they like. There is an option to pay later. After placing the order the product will be delivered within one day. All those things help ShopUp to get more customers by giving a smooth platform to their customers.

Financial Management: ShopUp uses different financial activities to do their financial activity. ShopUp uses Netsuite as its accounting software. Where they give all the journey entries and other data. After that, they create a final report with it. ShopUp also has an ERP system which is cloud-based where other financial activity is being done. The name of the ERP system is Metabase also called CRT by the employees. The CRT KPI report is being created. Also, the sales data is stored there. So, anyone can access the data anytime.

2.8 Industry and Competitive Analysis:

To describe the industry analysis I am using the porter's five force model.

Porter's Five Forces of ShopUp

1. The threat of new entrants:

The threat of new entries for ShopUp is low. Because ShopUp operates its business with a different range of products for small businesses around the country. It will be hard for a newcomer to make a new e-commerce platform like ShopUp. So ShopUp has a low threat of new entrants.

2. Bargaining power of suppliers:

The bargaining power of suppliers for ShopUp is low. ShopUp sources products for Mokam from different suppliers. So, if supplies increase the price ShopUp can switch to other supplies. So the bargaining power of suppliers is relatively low.

3. Bargaining power of buyers:

The bargaining power of buyers is high. Because the customer has options like other logical services like REDX and customers can source their product rather using Mokam. So the customer has the switching power so the bargaining power of buyers is high.

4. The threat of substitutes:

The threat of substitutes for ShopUp is moderate. There are substitutes available for the product and services that ShopUp has. But ShopUp ensures a good quality product and service which their substitute might give me fail. So the threat is moderate we can say.

5. Competitive rivalry:

ShopUp has a high competitive rivalry among its competitors. The product ShopUp has a competitor and some of the competitor gives better price than ShopUp. Which is a big issue for ShopUp. This may lose their customer. ShopUp should also give aggressive pricing like them to compete in the market.

To describe the competitive analysis SWOT analysis method (strength, weakness, opportunities, threats) can be used.

SWOT analysis of ShopUp:

Strengths:

- All-in-one platform: ShopUp's three main projects – Mokam, REDX, and Onkur makes an all-in-one platform for small business owners. These three offer a comprehensive solution for them to manage their inventories, sales, delivery processing, and digital payments. This helps to run small entrepreneurship at ease and more efficiently.
- Customer Service: ShopUp always prioritize customers' needs and requirements. So they have a very active customer service facility available 24 hours a day to solve any issues of the business owners. this helped them to become trustworthy and get a loyal client base.
- Strong Brand: Due to its unique value proposition and ease of use, ShopUp is flourished as a strong brand in this sector. In Bangladesh where many other companies could not succeed, ShopUp created its reputation for their dependable and trustable services.

Weakness:

- **Narrowed Market:** As ShopUp is mainly concerned about the small endeavors of the country, it somehow can narrow down its bigger opportunities. Because it targets only one market area for revenue, its potential also comes to a limit.
- **Reliance on Digital Infrastructure:** ShopUp is fully based on online websites, apps, and other media. If any digital infrastructure is disrupted, all the operations will be affected and the clients will be unable to access them. As well as all the corners of the country do not equally experience internet facilities, which creates an obstacle to reaching its facilities in remote areas.

Opportunities:

- **Expanding e-commerce market:** as Bangladesh's E-Commerce business platforms are expanding at a high speed, ShopUp can get an opportunity to expand its base and services. The government and many other companies are offering funds for these startup companies, ShopUp can easily raise funds through them as they are already gained trust among the clients.
- **Service expansion:** ShopUp can develop some new projects and expand its services to incorporate additional facilities such as logistics and an online marketplace. This can create a more appealing perspective to consumers as they can get all over solutions under one company.
- **International Expansion:** the emerging services of ShopUp has the potential to extend their services beyond the borders. It can serve other small entrepreneurs around the world with comparable requirements.

Threats:

- **Competitors:** ShopUp has some competitors in this e-commerce field business, who are trying to establish a more all-over service. These companies may affect their possibilities and market shares.
- **Regulatory environment:** the excess regulatory changes in our country, such as the new tax system and other regulations on a startup company can interrupt its profitability and prospects shortly.

- Cybersecurity threats: as ShopUp is an online-based company, it is always exposed to cybersecurity threats such as fraud, hacking, and data breaches. Any such incident can jeopardize the whole company's reputation and the trust of clients built throughout these years.

ShopUp provides a powerful value proposition and a loyal client base in the fast-increasing e-commerce sector. It does, however, face limitations such as a small market and dependency on internet infrastructure. ShopUp may expand its offerings and expand into new markets to reduce these weaknesses and profit from the opportunity. It must also be on the lookout for cyber dangers and negotiate regulatory changes.

2.9 Summary and Conclusions:

ShopUp is a fast-growing startup business that is trying to help small businesses around the country. ShopUp has a variety of products that is helping retail shop owners to get their products in one place also you can buy products on credit. Moreover, ShopUp also provides logistical products like delivery services with is the largest last-mile logistics network in Bangladesh. ShopUp not only doing its business but also trying to boost the economy of the country. Many small retail shop owners made their businesses very big with ShopUp. With the help of Onkur they brought more products on credit and after selling the product they returned their money. In this way, many people made their businesses big. So we can say the digital credit system is one some the key feature of ShopUp.

2.10 Recommendations:

ShopUp is building its brand by launching new products and services in the market. But if ShopUp wants to build a brand like a MNCs then ShopUp should look into branding more. The level of branding they do is good for a startup company. But if their target is going beyond the country then they must do more branding in different mediums.

Chapter 3: The scope of making better decisions through the use of data visualization by the Startups

3.1 Introduction:

A company generates a lot of data on a daily basis. Those data can be generated from numerous information, marketing analytics, sales, profit, client reports, and so on. However, Those data are mainly presented in a raw and complex format which is hard for the business owner and the team to keep track of on a regular basis. But for a startup company, it is important to keep track of the data being generated on a regular basis. However, it is much easier to understand those data if they are presented virtually or on a dashboard rather than extensive paragraphs of text and complex numbers. Data visualization provides context. And this is critical for company or startup analytics since it speeds up and makes them more effective (Arinkina,2022).

Data visualization basically means portraying raw and complex data in graphs, tables, charts, diagrams, maps, timelines, dashboards, and others. The raw and complex data become easy to understand when it is in visualized form. –Every day, the average person makes over 35,000 decisions. We have been making judgments long before big data was introduced. The human brain and decision-making mechanisms have been studied by experts. They've been looking for techniques to make good judgments while avoiding negative ones”(Sharma,2020). There are some way data visualization helps businesses when comes to decision-making. Firstly, data visualization helps to make quick decisions in business. Nowadays time is very essential and in startups, the workload is huge but in a startup by looking at a visualized dashboard decisions can be taken more easily which will also save time. Then, data visualization helps to the identification of Patterns faster. For example, if you think of FMGC company by looking into visualized sales data purchase patterns of its customers can be easily identifiable. Those are some examples of how a company can make easy decisions with the help of data visualization.

3.1.1 Literature Review:

The goal of this literature review is to examine the existing research papers on data visualization in SMEs and startups that are available. As technology is improving day by day and nowadays

data are key to making decisions in the company. Data visualization can help small businesses and startups to take effective decisions. I have reviewed some papers below.

In this article, the techniques of data visualization, application fields, and challenges are discussed briefly. The design, development, and implementation of computer-generated graphical representations of data is the focus of data visualization. This allows decision-makers to see statistics in a visual format, making it easier for them to understand the data (Shadare, Musa, 2016). Some techniques such as line graphs, pie charts, bar charts, etc are mentioned here. How this technique helps to take better decisions in different sectors, like – public health, renewal energy, environmental science, etc, and what challenges data visualization has to face are also explained. Big data, both organized and unstructured, presents a new set of issues for visualization developers. This is caused by the fact that we must consider the data's pace, size, and variety (Shadare, Musa, 2016).

In this paper, I determined why large data visualization is crucial, as well as the obstacles and concerns associated with it(Mohd Ali, Gupta, 2016). Here are some reviews about some modern visualizing tools, their merits, demerits, comparison, and use methods. –These tools are highly promising, they provide rich and dynamic visualizations, and the majority of them deal with massive amounts of data and respond in a reasonable period of time. The study of various tools shows that there cannot be a single winner among them (Mohd Ali, Gupta, 2016). This article is rich in data visualization because most of the information and details are described through pictures, charts, and infographics. Visualization interactivity is critical, and that excellent visualization tools should provide interactive visualization. We also investigated how individuals are suggesting new ways to address these issues(Mohd Ali, Gupta, 2016).

In this article, the history of data visualization, its current trends, and future direction are discussed. Nothing happening in the world of business intelligence today can get us any closer to realizing the promise of intelligence in the workplace than data visualization (Few, Edge, 2007). From the very beginning creating tables for collecting data, to throughout all these years how data visualization has flourished and come to the present situation. It is being discussed, studied, and sought by data workers, purchased by those with the purse strings, and used by a rising percentage of the workforce, particularly analysts(Few, Edge, 2007). Data visualization is just a

marketing strategy, for displaying data effectively, it has no connection with art (Few, Edge, 2007). Through technologies and modern advances Dashboards, visual analytics, and even basic graphs will evolve in accordance with best practices. I've also seen indicators that newer attempts are forming that will soon become full-fledged trends (Few, Edge, 2007).

3.1.2 Objective:

Data visualization is the representation of information and data using charts, graphs, maps, and other visual tools. Through data visualization, companies can build an easy way to understand and display complex data relationships and data-driven insights. Nearly every field, such as public policy, finance, marketing, retail, education, sports, history and many more can use data visualization to present their bland database in a more effective way.

Startup companies can use data visualization because it enables them to make better decisions. As analytics is presented visually, which helps to grasp complex concepts or to identify the patterns and get a useful solution in a spontaneous way. Data visualization can be the best way to present data in an accessible manner to the general public who are not used to technical knowledge. It can describe through storytelling, colors and patterns, and even animation which gives more opportunities to explore and collaborate through visual relationships.

- To identify the use of data visualization by Startups in different countries
- To examine the deficiencies faced by Startups for not using data visualization in decision-making
- To identify the factors hindering the usage of data visualization by the Startups
- To figure out the impact of using data visualization by different Startups in Bangladesh

Data visualization is a quick, easy way to convey concepts in a universal manner so it can be a wise investment for the company's future. Through these objectives, we can make an understanding of how data visualization is practiced throughout the world and how our startup companies can get benefits from it.

3.1.3 Significance:

The importance of this research is to understand how SMEs or startup companies can do better in decision-making. This research will also provide the implications of using data visualization to make better decisions. SMEs and startup companies do struggle sometimes as those are not handled by experts rather the founder make the decision in the initial phase. Sometimes the founder of the company can not make an effective decision in a short time. Here, data visualization can help to understand the situation and make effective decisions for the company.

- This research will help to understand how SMEs or startup companies can improve their decision-making process
- After that, how data visualization can help in understanding situations and making effective decisions
- This research will have how to examine the impact of using data visualization in a company and identify the changes it can bring to the company.
- To have an idea of why many SMEs and startup companies are not using data visualization and identify the barriers to its adoption.
- This paper will provide advice to SMEs and startups on how to use data visualization successfully in their decision-making processes.

3.2 Methodology:

This project is aimed to explore the scope of making better decisions through the use of data visualization. SMEs and startups often lack good decision making but the concept of data visualization can help them to make more effective decisions. For this project, I will be using qualitative data which I collected using semi-structured interviews as the primary method of data collection, and with that, I collected some data by doing secondary research.

I conducted an interview session with some experts who were working in the company I did my internship. I took interviewed 3 people in total to collect my data for this project. The first person I interviewed was Tanveer Ahsan who is a Senior Manager- Fund and treasury. After that, I interviewed Hasib Ahmed who is working as a MIS Manager in ShopUp. Lastly, I interviewed

WahidulHoqueAhad- Assistant Manager of Accounts and Finance. He was also my supervisor in the office. Interviews were between 20-30 minutes each. I prepared some questions before and I asked them those and took note of their answer. That's how I collected my primary data through interviews.

I also collected some data for my project from secondary research. I collected some research that is previously done on this topic. I used that information in my project.

There were some limitations while collecting data for my project. The first limitation was less number of interviewers. In the office, it is very hard to conduct interview sessions with experts. Every stay busy with their work in the office and people do not get time to give an interview to me. But somehow I manage 3 experts from my industry who helped me a lot to collect my data. After that, the time frame was very to work on this project. I needed to work in the office all day and also had to work on the report and managing two things together was really hard for me.

3.3 Findings and Analysis:

3.3.1 Usage of data visualization by Startups:

Data visualization can be used by startups in different ways. Companies can use visualized data to identify areas of improvement and factors that impact customer satisfaction and generate better projections for sales and growth. With that, visual data can also outliers and other unusual groups, as well as trends, patterns, and clusters, can be identified by data visualization. Visualized data helps to identify both local and wider-scale situations like these (Joshi, 2023). Many companies frequently depended on data visualization to do analysis and plan their work. Many marketers and managers depend on dashboards to find the patterns, and trends that help to improve overall performance (Petrova, 2023).

It has been seen company from different countries monitor their key performance indicator in real life through data visualization. KPI helps to meager the performance of a specific objective. Startups can use the KPI dashboard to see that the target they set for a goal is fulfilled in real-time. A visualized KPI dashboard will be helpful to highlight suitable data for the manager when

needed (Kinsey,2023). As the data will be available in the dashboard it will be easy for the manager to make quick decisions. KPI dashboard also helps to generate reports instantly. As we can see the real-time data in the KPI dashboard the report can be made easily when needed. As the dashboard updated is in real life the manager can keep track of their employees workings. And can set new goals for them (Klipfolio, 2023). So, all together we can say that startups around the world can use a visual KPI dashboard to monitor their data in real-time and make quick decisions and a KPI dashboard of a startup company looks like this.

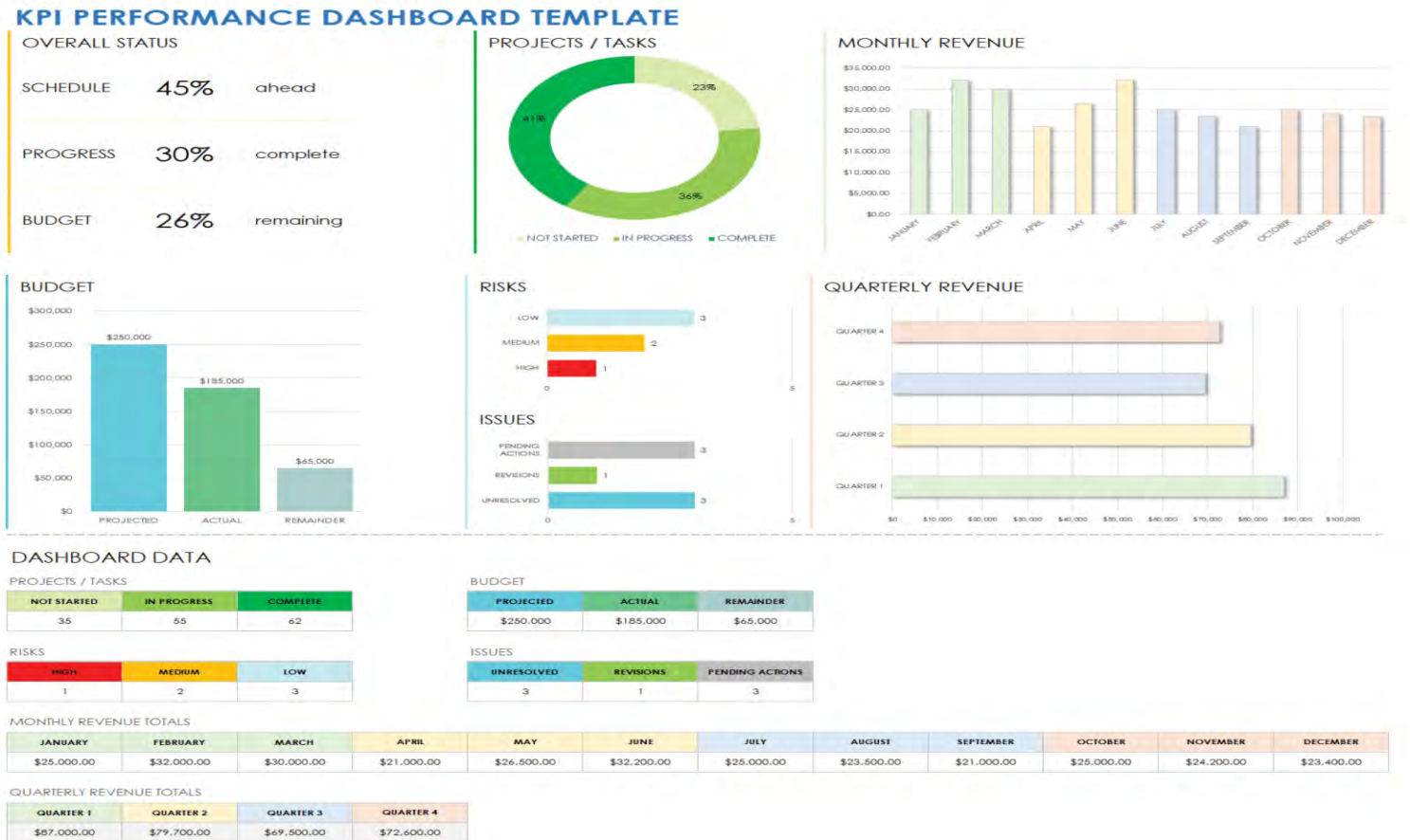


Figure 3 KPI Dashboard

The KPI dashboard that we are seeing in from Smartsheet (Eby,2022). There, you can find many dashboards of different companies. In this one, we can see the key performance indicator of a company. And, Based on that they manager their performance

In any type of company like SMEs and startups financial data are being generated regularly. Financial managers can have an upper hand by taking the help of data visualization to identify trends, improve performance, make better products better service offerings, set new realistic objectives, and make more well-informed decisions (Prague, n.d.). The financial data of the Small or newly started company can be presented in a truly driven progress with the help of data visualization. Financial graphs and charts are visual tools that help firms track a variety of performance indicators such as liquidity, budgets, expenses, and cash flow. They may be able to successfully manage risks in this manner to ensure sound financials and constant growth(Calzon,2022). By using data visualization managers or employees can look at real-time data like the total expense of the day, and earnings for the day. Forecast data can be seen and then they can compare the forecasted data with the actual one. So, all together we can say that SMEs and startup around the world can use their financial data and make visualized dashboards that can be effective for them.



Figure 4 Financial Dashboard

The financial Dashboard is from Bold Bi. This financial dashboard can help you keep track of sales, income, working capital, assets, and other factors that can be difficult. You can see the debt-equity, equity ratio at a glance. Also the Payable amount and receivable are available.

Visualized data enhance visibility and give day-to-day information to the supply chain team and also customers can see that information in multiple media. Also, data visualization can be used to make a well-developed supply chain strategy (Prijic, 2022). And a well-developed plan can help the company to reduce their cost which will help them to get new customers. Moreover, data visualization can be really useful to maintain demand and supply. Managers can keep track of the demand by looking into the visualizer and can act as accounting for that. In this way, they can fulfill the demand also which is really important for a company. Inventory management will be also easy with data visualization as managers can see the real-time data on how much inventory is there. And How much will be needed in the future. There will be less chance of excess inventory. So in those areas of supply chain management data visualization can be used by different startups around the world.

Supply Chain Management



Figure 5 Supply chain Dashboard

The supply chain dashboard is from Data Pine by BernarditaCalzon. In the dashboard, we can see the total inventory to sales, the Carrying cost of the inventory, of stock items. This helps the company to make its supply chain management better.

3.3.2 Impact of using data visualization by different Startups

The number of Startups in Bangladesh is increasing day by day. New businesses are launching regularly. According to a study by DataBD, In Bangladesh, over 1,200 startups employ more than 1.5 million people (Wing 2022). In the initial phase, startups face many difficulties like decision-making and other problems. However, data visualization helps the company to make decisions, find data trends, analysis new patterns. Data visualization has a huge impact on startups like improved understanding, enhanced communication, increased efficiency, better decision-making, and increased engagement. A company can portray clearly its information and its point with data visualization.

Data visualization helps to increase collaboration with many departments in the company. Experts said that it is really important that every department is working together to achieve the company's objective. But sometimes it is hard to understand the data of another department for example market department may find difficulties when they will look at the financial data. In this situation, data visualization helps to understand the data. It becomes easy when we see the data in a dashboard but the raw data is difficult to understand for other departments. Experts also mentioned that when other departments understand the data trends they can make good communication and that's how many complex problems can be solved.

Another impact of data visualization mentioned by the expert is faster decision-making. In startups the working environment is fast-paced and for that making quick decisions is really important. When the employee sees the portray data they understand them easily as it is less complex. And they can take quick decisions. Visualized data is easy to understand so it gives the clarity to identify something and make quick decisions. Experts said, that how they maintain a fast-paced environment in the work culture.

Finally interviewing the expert, they said data visualization can identify the potential risk and the risk management can be better with visualization. They mentioned risk management can be done by identifying potential risks and new opportunities can be found by looking at the patterns and trends in the visualized data. Experts also added that visualization of data can help decision taker to predict and manage the upcoming risk more successfully.

So, we can say that data visualization has an important impact on startups. It can make the company more effective, help to take good decisions, and connect the company all together.

3.3.3 The deficiencies faced by Startups for not using data visualization in decision-making

If startup companies do not utilize data visualization in their decision-making process, they could face difficulties in conveying complex data, it can be challenging, leading to confusion or misinterpretation. When we talked to the experts about the deficiencies they have to face in decision-making for not using data visualization what we knew as findings are

Experts mention that if they do not use data visualization properly they struggle to get a clear and comprehensive overview of the data. Complex raw data make it difficult to identify patterns and trends. It limits their ability to extract meaningful insights, which creates delayed decision-making. Without data visualization, the process of analyzing and interpreting data become more time-consuming and troublesome. They also said that these factors result in missed opportunities in market changes.

As they mention the inability of identifying trends and patterns, we asked more about it. The experts mentioned data visualization helps them to keep up to date with the ever-changing trends and patterns of the market. As the market is never static, its needs and demands are always changing according to their clients it is to keep pace with these changes with visualized data for the startups.

Another finding about the deficiencies of not using data visualization is that without it the startups will lack a data-driven culture. Visualized data encourages the employees to take their decisions based on evidence and empirical insights, rather than guessing or take an intuitive decision. Experts said that, if the decision is not taken based on evidence, it may be prone to

make inaccurate or biased decisions. Data visualization reduces these risks by presenting data in a more objective and transparent way.

In summary, we can say if startups overlook data visualization can face many challenges and difficulties in get a proper decision for the betterment of the company. Embracing data visualization may enable startups to take more informed and impactful decisions.

3.3.4 The factors hindering the usage of data visualization by the Startups

Data visualization plays a crucial role in communicating through images and patterns. It is an easy and descriptive way to make a better understanding of the raw data collected from complex sources. But many companies still do not use data visualization in their day-to-day life data sorting. There are many reasons found by the experts why data visualization is not still a vastly used technology and what the reasons behind it are

The main reason identified by the experts, for not using data visualization is due to the lack of awareness among the startup and its employees. Some companies are still unaware of the benefits and importance of visualized data in decision-making. they may not fully understand how this technique can increase their understanding, communication, and decision-making overall the whole process. Due to not knowing properly, the employees tend to underestimate and overlook the value of data visualization.

Another reason for the hindrance can be limited resources and accessibility of technologies for using data visualization. Experts mentioned that often their companies face resource constraints. Such as limited budget, time, skilled personnel, and modern technologies. Sometimes they do not have the technical expertise and specialized software, which creates a barrier to the accuracy and completeness of doing proper data visualization. This shortage of skilled human resources and technical barriers discourage startups from adopting data visualization as a part of their decision-making process.

The experts mentioned another issue, which is resistance to change. They conveyed that particularly in startup environments agility and adaptability are critical. As the companies have short budgets, the employees are not used to the newest technologies. So they cannot get used to

new tools easily, and they are reluctant to try new software including data visualization. This counteraction creates a hindrance in using visualized data.

As the startup sees data visualization as a complex and tough technology, it is really a wrong idea. Data visualization is not as complex as it seems. Some simple tools such as – Tableau, Microsoft Power BI, Gephi, Plotly, etc can be used for it. The simplicity of usage shows how easily this software can generate a variety of charts, graphs, and infographics. Only a little awareness and accessibility to the technology will help startups identify the power of data visualization.

3.4 Summary and Conclusions:

Through the findings of my research objectives, it is clearly proven that data visualization can enhance the communication by presenting clear, concise and visually appealing information to the prospected clients. It can be a valuable tool in this data-driven business environment, as visual representations make the complex data easier to understand and interpret. The usage of data visualization creates a greater impact on the services of the startup, as it helps in constructive and faster decision-making, risk management, and in other positive ways. But in Bangladesh, lack of awareness and poor infrastructure leads to not using data visualization as an effective technology in startup companies. This hinders the growth and success of the companies in both direct and indirect ways. The companies struggle to pitch to the client about their own possibilities and cannot provide a better understanding of their potential. So to enhance their chance to be successful as a startup, the companies recommended to us the right visualization tools, which can help their data to be simple, focused, and insightful, tailor them to the clients

properly, and continuously improve the technologies. The startups should use data visualization for the company's specific goals and objectives.

3.5 Recommendations/Implications:

As we can say that, data visualization is an important method to communicate insights effectively, so it is really helpful for startups to achieve their goals and objectives. By successful use of it, companies can gain a competitive edge, make data-driven strategic decisions and communicate in a better way with their stakeholders. Through the use of data visualization, startups can understand and examine user behavior, preferences, and need. Data visualization can also strengthen the ability to pitch ideas and secure funding from investors. Visualized data can demonstrate market trends, growth projections, customer insights, and value propositions of the service more effectively. Data visualization can make the startup track their own progress, and monitor their performance against milestones. This also gives the companies a competitive advantage, because they can constantly work for their own betterment through these. By utilizing data visualization, startups can gain a deeper understanding of their industry, customers, and competitors to stay ahead in the market. Overall, data visualization helps the startup to transform data into optimized insights, enabling them to build a strategic decision that not only enhances the credibility of the company but also helps others to understand their potential to be successful startups.

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