

Report On
Challenges of Building a Waste Water Treatment Plant
Under PPPModel at Gazipur, Bangladesh

PPP Project Consultancy – PwC

By

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Student ID: 18204059

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

Brac Business School
Brac University
August, 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.

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Ahmed Aziz

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Assistant Professor &

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Letter of Transmittal

Saif Hossain

Assistant Professor &

Director (BBA Program),

BRAC Business School

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66 Mohakhali, Dhaka-1212

Subject: Submission of Internship Report on PwC Bangladesh.

Dear Sir,

I hope this letter finds you in good health. I, hereby submit my internship report combining my work experience in the Economic Advisory Department sector of PwC Bangladesh. I tried to follow the instructions of my supervisor in every aspect of the report. It was a wonderful experience to complete my internship with this organization and under the guidance of my supervisor who have supported me with all the necessary resources required to complete this report and I am ever grateful for that. I tried to make the report easy to read, understand and tried to back my wordings with references and numbers taken from both in and outside of the company.

I therefore, hope that you would like and appreciate the effort that I have put in the report. I also hope that this report will benefit every reader in a fruitful way which was a prime goal while writing this report.

Sincerely yours,

Ahmed Aziz

Student ID: 18204059

BRAC Business School

BRAC University

Date: /02/2023

Non-Disclosure Agreement

This agreement of not sharing information related to organization and its work between PwC Bangladesh and Ahmed Aziz, ID: 101210744

According to this agreement, all information contained in this report is strictly confidential and intended solely for internship purposes. It is strictly prohibited to share any part of this report elsewhere, except within the confines of the university internship report.

Acknowledgement

First and foremost, I want to express my gratitude and thankfulness to Almighty Allah, the One and Only, the Most Gracious and Most Merciful, for blessing me with the opportunity of securing a internship in a globally recognised firm on my first attempt.

I would also like to convey my gratefulness to my supervisor of the Economic Advisory department, Ms. Anika Zaman Bushra, for interviewing me and finding the potential in me for the role to the responsibilities by being a part of this company. I would humbly thank her and my Indian team, Shreya Sharda and Arpit Kanv for helping me with all the necessary guidelines required to complete this project. Nevertheless, I would really thank my manager Anshuman Agarwal for giving me time remotely in between his busy schedule to guide me.

Last but not least, I wish to thank Mr Saif Hossain for giving me a proper brief of how to carry forward to this Internship course (BUS400) and for giving me the proper guidelines to follow to complete this report and always being cooperative and understanding the situations throughout the time period.

Executive Summary

At the onset of this report, I have provided a comprehensive overview of my internship experience at Pricewaterhouse Coopers (PwC) Bangladesh, encompassing an in-depth account of my job responsibilities, acquired knowledge, and overall professional growth during the internship period. Furthermore, I have delved into a meticulous analysis of the organization itself, shedding light on its operational structure and methodologies.

In the final chapter, I have dedicated significant attention to elucidating how PwC actively collaborates with the International Finance Corporation (IFC) through a project, highlighting their meticulous analysis, valuable findings, and other pertinent aspects. As a frontrunner in the market, PwC Bangladesh is committed to making substantial contributions towards the country's economic development. Recognizing the immense potential of the local market, PwC aims to establish itself as an independent entity in Bangladesh by the year 2025, further solidifying its position and influence in the region.

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List of Acronyms

GCC	Gazipur City Corporation (GCC)
GOB	Government of Bangladesh
HHs	House-holds
LGD	Local Government Division
LGED	Local Government Engineering Department
PwC	Pricewaterhouse Coopers
PPP	Public-Private Partnership
RAS	Risk Assurance Services
TRS	Tax and Regulatory Services

Glossary

- PPP** PPP stands for public-private partnership model projects. In this model the public partner such as government recruits a company in agreement of partnership with the responsibility to complete the project and maintain the project for a certain period of time. For instance, 10 to 15 years or even more in times. The public partner pays a certain amount during the project and a certain amount while operating the project. The private partner here makes revenue to generate profit with in the time period of holding the authority of maintaining the project. PPP models are mostly used for infrastructure projects.
- RAS** Risk Assurance Services (RAS), also known as Assurance Services or Risk Advisory Services, encompass a range of professional services offered by consulting or audit firms to help organizations manage and mitigate risks. These services involve evaluating the reliability of financial information, assessing the effectiveness of internal controls, and providing recommendations to enhance risk management processes. Risk Assurance professionals collaborate with clients to identify potential risks, such as operational, financial, and compliance risks, and provide specialized expertise in areas such as internal audit, IT risk management, regulatory compliance, data privacy, cybersecurity, and financial reporting. Through their expertise, Risk Assurance Services assist organizations in safeguarding their operations, ensuring compliance with regulations, and improving overall risk mitigation strategies.
- TRS** Tax and Regulatory Services (TRS) encompass a range of professional services provided by accounting, consulting, and legal firms to assist organizations in navigating the complex landscape of tax laws and regulatory requirements. These services involve advising clients on tax planning and compliance, helping them optimize their tax strategies while ensuring adherence to relevant tax regulations. Additionally, tax and regulatory professionals provide guidance on regulatory compliance matters, helping organizations understand and comply with industry-specific regulations, reporting requirements, and governmental mandates. These services aim to support clients in managing their tax obligations effectively, minimizing tax risks, and ensuring compliance with applicable laws and regulations.

Chapter 1:

Overview of Internship

1.1 Student Information:

Name: Ahmed Aziz

ID: 18204059

Program: Bachelor of Business Administration

Major: Accounting

Minor: Finance.

1.2 Internship Information:

1.2.1 Company Details:

Internship Period: 17th February, 2022 – 27th May, 2022

Company Name: PricewaterhouseCoopers Private Limited (PwC Bangladesh)

Department: Advisory (Economic Advisory).

Address: 11th floor, Laila Tower 8, Gulshan Avenue, Bir Uttam Mir Shawkat Sarak, Dhaka 1212, Bangladesh.

1.2.2 Internship Company Supervisor's Information:

Name: Anshuman Agarwal

Position: Senior Manager (Advisory)

E-mail Address: anshuman.a.agrawal@pwc.com

Contact Number: +91 85879 57914

Office: Gurugram 10 C, India.

On-site Supervisor

Name: Anika Zaman Bushra

Position: Associate (Advisory)

E-mail Address: anika.z.bushra@pwc.com

Office: Dhaka, Bangladesh.

1.2.3 Job Responsibilities:

I was assigned with a project of IFC where my responsibilities were to collect various information from Gazipur City Corporation (GCC) regarding their capacity to complete a wastewater plant and procedure of their execution of funding. On the other hand, I also had to go through the financial statements of Gazipur City Corporation (GCC) and Local Government (LGD) to know more about their financial activities.

1.3 Internship Outcomes:

1.3.1 Student's contribution to the company:

During my internship tenure, I had a noteworthy contribution as an economic advisory intern at PwC Bangladesh. I was assigned in the second phase of a project of IFC which was taking place under Gazipur City Corporation (GCC). The whole team working on this project was situated in India and thus I had to conduct all the meetings with key stakeholders and other government officials to collect necessary information that where required.

1.3.2 Benefits to the student:

In these 3 months of my internship period, I learned a lot of things that has allowed me to put things into perspective. I learned how a consultancy service works and has an important impact in decision making of big projects. As I worked in the economic advisory department, I learned more about the infrastructure developments taking place in our country and in other South Asian countries. Other than these, I have learned how to make approaches in a professional world and conduct meetings successfully. On the other hand, I also had an experience of conducting a survey.

1.3.3 Problems/ Difficulties:

Though the work environment here is amazing still there were a couple of difficulties which I had to face from external sources. Firstly, conducting a door-to-door survey is difficult considering the welcoming nature of the respondent and the weather as well. As all the respondents were not cooperative I had to visit more households than required which was much time consuming. Moreover, the time frame of the survey was during Ramadan and thus the hot summer weather had much negative impact as a surveyor. On the other hand, I faced difficulties in collecting information from the government as the officials were busy and most of them were not welcoming as well. Other than that, their on-paper information mismatched their verbal information which made it difficult for me to come to a reasonable conclusion.

1.3.4 Recommendations:

To me PricewaterhouseCoopers Limited Bangladesh (PwC) is a great place to work and learn many new things. PwC offers various external training such as linked in learning and training from My PwC app. They also offer free subscribed news portals such as 'Harvard Business Review'. Although, I think this organization has enriched my knowledge in various segments, it would be better to assign interns under seniors in the same office. However, it is undeniable that the seniors from every department are very supportive.

Chapter 2:

Organizational Part: Overview, Operations, and Strategic Audit

2.1 Introduction

PwC is a management consultancy firm. They use a data-oriented strategy to open up windows of opportunity and foster growth in order to have a good effect on the economy as a whole. They consult and work together with partners in the public and private sectors as well as with development partners in order to promote continued economic growth that has the potential to greatly enhance and improve the lives of people in our nation. PwC's goal is to speed up sustainable and inclusive growth.

2.1.1 Objectives of the Company

PwC Bangladesh is a top professional service company offering a variety of advisory services, tax consulting, and technology consulting. PwC Bangladesh helps its clients identify and implement the appropriate solutions in their transformation journey thanks to its broad team of brilliant individuals and significant expertise in a variety of topics and sectors. PwC Bangladesh serves as a business integrator, assisting clients in finding the best technologically based solutions to handle difficult business issues. The path towards a Digital Bangladesh is being undertaken by government organizations, and PwC Bangladesh is working on a number of technology-driven programs at the same time. Additionally, PwC Bangladesh offers clients helpful tax and regulatory guidance to effectively manage their compliance requirements. Additionally, PwC Bangladesh assists its foreign clients who wish to make investments in Bangladesh and take part in the ambitions of the nation for growth. PwC creates new chances for regional businesses and Bangladesh's brilliant people to realize their dreams thanks to its significant experience in providing professional services globally. PwC Bangladesh began operating in 2015, and in 2016 it opened its first office in Dhaka. Today, about 100 skilled individuals work for PwC Bangladesh, assisting customers with the use of technology and the resolution of challenging business issues. Around 600 clients in Bangladesh have received services from PwC Bangladesh in a variety of industries, including government, development organizations, textile and garment manufacturing, pharmaceuticals, financial services, real estate, utilities, education, and health services. PwC Bangladesh is a part of the 284,000+ skilled professional PwC worldwide network, which operates in 157 nations.

2.1.2 Methodology

The data collection process for this chapter was collected from primary and secondary data. For management practices and the industry analysis, first-hand data were collected through observations and interviews. However, as PwC has different divisions for specific services and also maintains confidentiality; thus, secondary research was conducted by collecting information from the annual report, such as the financial performance and the accounting practices and previous studies.

Purpose and values of PwC

” Our purpose is to build trust in society and solve important problems.”

We encourage intricate systems' operation, adaptation, and evolution in an increasingly complex environment so they may have lasting effects for communities and society, whether they be capital markets, tax systems, or the economic frameworks that support business and society. According to PwC's objective, they aspire to collaborate with others to address the most serious challenges affecting the world today in a manner that builds social trust. On the other hand, having a common purpose will be much helpful to run business through the next stage of evaluation because the system on which economies and societies depend are disputed and evolves.

Although the employees come from various cultural origins, their shared beliefs are what unite them. They set the standards their clients should have of them, direct how they interact with one another, and hold us responsible for performing at our highest level. They are directed by their clients, who also make them successful. Their five core values and the behaviors they underpin provide the framework within which they work to achieve our purpose of building societal trust and solving critical matters.

The five core values are:

(1) Act with integrity

- Speak up for what is right, especially when it feels difficult
- Expect and deliver the highest quality outcomes
- Make decisions and act as if our personal reputations were at stake.

(2) Making a difference

- Stay informed and ask questions about the future of the world we live in
- Create impact with our colleagues, our clients and society through our actions
- Respond with agility to the ever changing environment in which we operate.

(3) Care

- Make the effort to understand every individual and what matters to them
- Recognize the value that each person contributes
- Support others to grow and work in the ways that bring out their best.

(4) Work together

- Collaborate and share relationships, ideas and knowledge beyond boundaries
- Seek and integrate a diverse range of perspectives, people and ideas
- Give and ask for feedback to improve ourselves and others.

(5) Reimagine the possible

- Dare to challenge the status quo and try new things
- Innovate, test and learn from failure
- Have an open mind to the possibilities in every idea.

Their people provided their values. In expressing what it should feel like to work with PwC, both now and in the future, more than 130,000 people had a say.

2.2 Services:

Advisory

“We help organizations work smarter and grow faster. Reach out to us to build effective organizations, reduce costs, manage risk and regulation and leverage talent.” (Services, Pwc.

<https://www.pwc.com/bd/en/services.html>)



Services span of PwC across the following domains:

Consulting:

- Cyber Security – PwC’s Cybersecurity service provides protection against unauthorized or criminal use of electronic data, and cybersecurity services are the overarching processes put in place to achieve this security and protect against common cyber threats.
- Financial Risk and Regulations (FRR) - The risk of not working in compliance with industry laws and regulations, internal policies, or recommended guidelines will risk a business to possible legal consequences such as financial forfeiture, and material loss.
- Forensic Services - The forensics team at PwC offers an agile approach and provides your company with the information and resources it needs to conduct international commerce in a

sustainable and legal manner. They are committed to assist clients proactively in reducing the risks of corporate and individual loss so that you can become stronger over time.

- Government & Public Sector - Governments all around the world struggle to provide public services in the most effective manner while dealing with a variety of complicated issues. To address complicated business problems and provide creative solutions, they combine their domestic and international knowledge.

- Management Consulting - PwC adopts the strategy of combining in-depth customer insights, the dynamics of the value chain, and macroeconomic indicators to offer a distinctive and sustainable solution to its clientele. This strategy is driven by extensive partnerships with market-leading experts, cutting-edge innovators, and policymakers. The firm aims to add value to its clientele by transforming intuition into actionable imperatives by offering large-scale research, consulting, project management, strategy, and policy analysis, along with technical assistance by conducting a thorough market assessment to the multilateral development partners, the corporate sector, the private sector, and the NGOs.

- Technology Consulting - This team focuses on data science, technology, design, and business. These elements work together to construct and develop companies in a manner that is more data-oriented. This team helps PwC in increasing impact and revenue by developing strong data and value chain analytics. Better growth opportunities that support the implementation of technology-based solutions for our clients are presented by the combination of digitization, visualization, and data analytics.

Government Reforms and Infrastructure Development

- Agriculture and Natural Resources
- Energy, Utilities and Mining
- Social Sector and Responsible Business Advisory
- Capital Projects & Infrastructure
- Public Finance and Economics
- Water and Urban

Deals

- Deals Strategy
- Valuations
- Delivering Deal Value
- Transaction Services
- Corporate Finance & Investment Banking
- Mergers and Acquisition Tax

Tax and Regulatory Services: As one of the top providers of tax services worldwide, they support businesses in developing plans to minimize their taxes, efficiently handle compliance-related needs, support dispute resolution, and advocate on their behalf before government agencies.

Services provided by TRS:

- Corporate and International Tax
- Transfer Pricing
- Financial Services
- Mergers and Acquisitions
- Tax Controversy and Dispute Resolution
- Indirect Tax
- Regulatory Services
- International Assignments
- Tax technology

Risk Assurance Services:

By comparing them to best practices of similar organizations within the same industry, the Risk Assurance Services practice helps firms in upgrading their systems and procedures. Through a range of services, the risk assurance services provide considerable value to businesses, assisting them in increasing productivity, preventing revenue losses, reducing costs, and achieving long-term sustainable growth.

Key offerings of RAS:

- Business Resilience Solutions
- Internal Audit Services
- IT Risk Management
- Business Controls Advisory
- Compliance Risk Management
- Financial Risk Management

Industries:

PwC had the good fortune to work with around 600 clients across many industries in Bangladesh (and continues to do so). Government, development organizations, textile and apparel manufacturing, pharmaceuticals, financial services, health services, RMG, textile and water, sanitation and hygiene, and many more are some of the sectors where the company has had the most exposure.

2.3 Key Partners and Clients:

PwC has established a number of significant partnerships with renowned companies over the past seven years in an effort to provide its clients with more value. On the other side, PwC has an endless list of clients. Clients from the public sector include Future Startup, Infrastructure Development Company Limited (IDCOL), ICT Division Bangladesh, Insurance Development & Regulatory Authority (IDRA), and many others. BRAC, International Funding Corporation (IFC), UNDP, World Bank, WFP, The Embassy of the United Kingdom, among others, are some of the clients in the Development & Impact sector. Some of PwC's clientele from the private sector include Square Group, Axiata Group, Akij Group, Pacific Jeans, Smart Jeans, Habib Group, T.K Group, S.A Group, Evercare, Aamra and Japan Tobacco Limited. From financial institutions and international consulting firms, clients include Mutual Trust Bank (MTB), The Premier Bank, Asian Development Bank, Central Counterparty Bangladesh Limited (CCBL), Light Castle Partners and many more.

2.4 Management Practices

Leadership Style:

In this case, democratic or shared leadership, often known as democratic leadership, is used. Members have a significant influence on the decision-making process. PwC gave its members the freedom to finish their job whenever it was convenient for them because the majority of the work is project-based. This means that if a task you are assigned has a deadline of two weeks, you may take two weeks to finish it or you might need two days to finish it. The completion of the work by the deadlines is the only thing that must be ensured. Working to ensure deadlines are met is one of the few things PwC strongly maintains. Every team member, from Trainee Consultant to Senior Business Consultant and Project Manager, is entitled to speak up and contribute ideas to get better results.

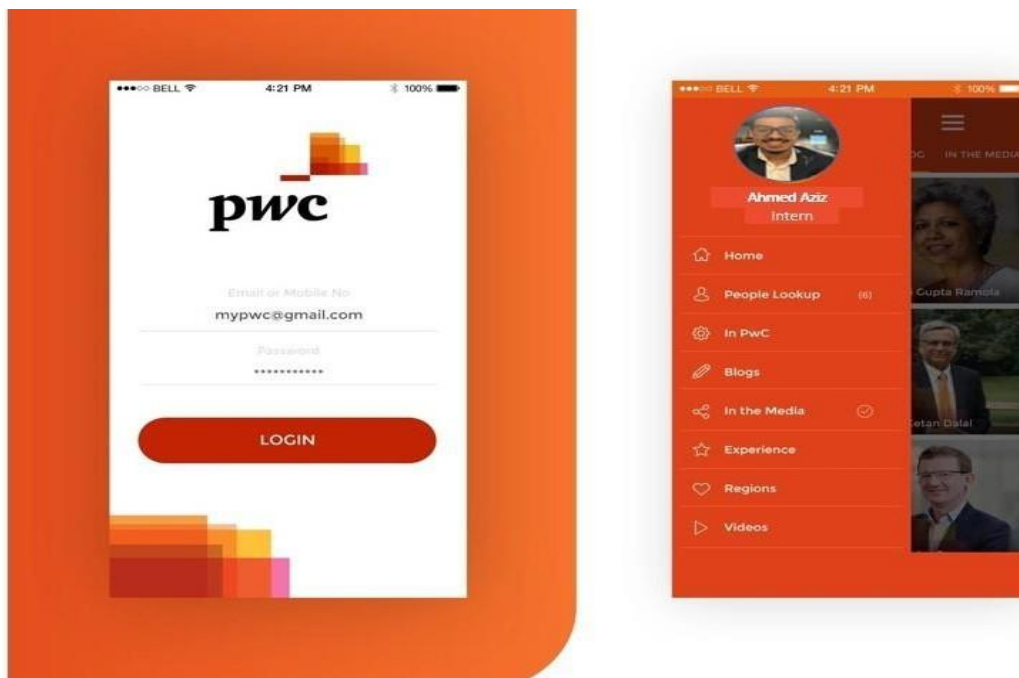
Recruitment process:

The hiring process is less complicated. To be eligible for the open position at PwC, candidates must go through 3 stages. An aptitude test and case study round make up the first round. The management team interviews in the second round, and interviewed by HR Manager, Senior Business Consultants, and Project Managers in the final round.

Compensation System:

In addition to the direct financial benefits paid out at the end of each month, other forms of compensation include bonuses during special holidays, gifts given to all senior-level managers for the New Year, and payment of all costs associated with work trips or site visits, such as accommodation, food, and transportation. Arranging dinners to celebrate any project completion, inviting the entire PwC Team to sponsorship or partnership deals dinner.

Training and Development activities:



PwC has very efficient training and development activities which are operated via an app named “My PwC”. There are various trainings followed by quiz tests in this app which are time to time allocated to all their employees. The employees will be notified about their allocated

training and development programs in their My PwC account and it is very strictly monitored if the employee has completed it or not. On the other hand, in house training is also conducted for development of their employees which is mostly conducted in India and thus employees are taken to India for such training. However, PwC also has free access in LinkedIn learning, Harvard Business Magazine and other such knowledgeable sites for their employees. I myself have found these activities very interesting and helpful for employees to develop both personal and professional skills.

Financial Performance and Accounting Practices

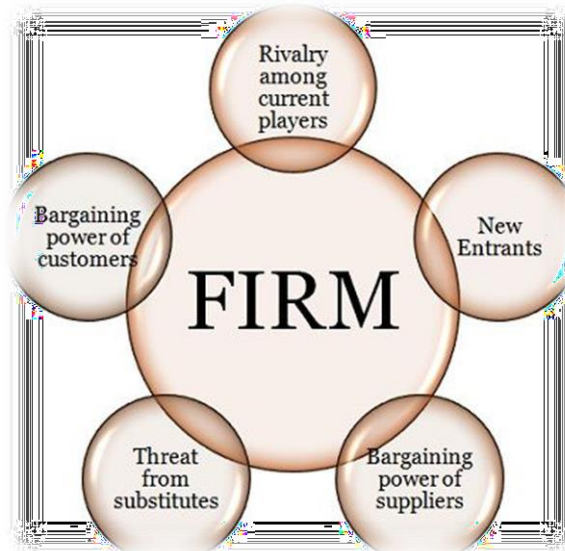
PwC is a privately operated management consulting company. All financial statements and annual reports are therefore extremely private to the general public. In terms of accounting procedures, the accrual basis accounting method is used, in which transactions are instantly acknowledged and recorded as they occur. At PwC, straight-line depreciation is used. All of the procedures in the accounting cycle are properly followed and maintained by the accounts staff as well.

Operations Management and Information System Practices

At PwC, all work must be completed promptly and efficiently so that employees can move on to new projects, learn the new aspects of their job, and gather knowledge from a new perspective. Since all of the work done here is project-based, the same standards are maintained. For all projects, similar processes are used for data analysis and findings. Creating pie charts, spider diagrams, histograms, and other visual representations of data to give a clear picture of the results. Moreover, information is gathered using Google form questionnaires and in-person interviews conducted during the multiple field visits. In order to increase efficiency when working on projects involving the rural population, we provide paper forms that we then digitize on spot. After the information has been collected, project contracts are made to make sure that everyone is always informed and updated. These are created in Google Spreadsheet and stored in the same folders on Google Drive which is accessible to the team until the project is not completed and after completion the works are updated to 'My PwC' which is accessible to all employees to acquire more knowledge. All the employees are mailed from time to time to be informed about the achievements of each employee from respective departments.

2.5 Industry and Competitive Analysis

Porter's Five Forces Analysis of PwC



1. Threat of new entrants: The consulting industry has quite high entry criteria. In this market, it can be challenging to achieve economies of scale, and there are large capital requirements, such as high costs for research and development. It's difficult to find loyal employees and manage the costs of human resources. Moreover, a brand value is much required in this industry as customers want reliability from they are taking assurance services.

2. Bargaining power of supplier: There is no existence of bargaining power of supplier because there is no supplier in the consulting industry.

3. Bargaining power of buyers: The buyers in this situation are the customers. Therefore, the clients' power is considerable. In order to satisfy customer requests, analysis, evaluation, surveying, and interviewing are all tasks that consulting firms must conduct.

4. Threat of substitutes: The threat of substitutes is reasonably low because there are not many firms to work solely on providing management consultancy.

5. Competitive Rivalry: Competitive rivalry in this industry in Bangladesh is very high as several well-known reputed consulting firms already exist in this market. For instance, KPMG

has been working on this market since 2006 through their representative RRH (Rahman Rahman Huq) and also acquired renowned key partners and clients. Similarly, globally renowned firms like EY and Deloitte have also entered the market lately in 2020 and 2018. Other than that, several potential firms like LCP and light castle have acquired market shares as well which have made the internal competitive rivalry very high in Bangladesh.

SWOT Analysis

1. **Strength:** PriceWater House Coopers (PwC) is best renowned for their remarkable taxation service in the market. They are also known as the oldest and most reputed advisory service company among their competitors in the Bangladeshi market. PwC has built their each and every team with experienced and knowledgeable employees from various sectors. They are also connected to various academically experienced personals for advising in various researches.
2. **Weakness:** Bangladesh is a developing country and has many rising organization and startups which require a high demand of various advisory service but PwC lacks to hold onto the startup market in Bangladesh due to their expensive service charges which is usually not affordable by startups or small organization due to lack of funds.
3. **Opportunities:** Being a globally reputed organization PriceWater House Coopers is the most recognized brand in it's field and thus they are much preferred by foreign entities which considering any projects in Bangladesh. For example, World Bank takes most of their services specially in infrastructure sector from PwC Bangladesh. On the other hand, foreign companies also rely much on the organization while any mergers, acquisition etc.
4. **Threat:** There are many talented people in Bangladesh who are actually entering the consultancy service market creating their own small size organization. These organization are able to charge much cheaper service charges due to lower operating cost compared to PwC and thus offer much lower prices for services in the market. As a result most private clients are going towards these small sized consultancy firms and eventually these firms are affecting the market share of PwC which is a strong threat from competitor for the organization.

Chapter 3: Challenges of building a wastewater treatment plant under PPP model at Gazipur, Bangladesh

3.1 Introduction

International Finance Corporation (IFC) is a part of World Bank Group and is the largest organization focused on private development in emerging markets. They operate in more than 100 nations, use their resources, knowledge, and clout to open up markets and opportunities in developing nations. In December, 2020 IFC took an initiative to develop a wastewater and sludge treatment system in the Industrial city of Gazipur with private sector participation in zone 1 and 4. The aim of the project is to treat sewage that will bring benefits to almost 230000 households and PwC was chosen as the consulting firm to conduct the commercial due diligence of this project.



3.1.1 Background

The decentralized system is often a traditional septic tank and pit latrines, and it is used by over 70% of the 230,000 homes in the Gazipur and Tongi districts. The other 30% dump their wastes directly into open drains or bodies of water. Thus, this specific project aims to install a wastewater management system in the Gazipur City Corporation (GCC)'s Tongi and Gazipur regions. The pilot project, which is expected to cost \$82 million, will include a 137-kilometer-long sewer network, two sewage treatment facilities with a combined daily capacity of about

56 million liters, mechanical desludging of septic tanks, and transportation of fecal sludge to three treatment facilities. The 2030 Water Resources Group, a public-private-civil society multi-donor trust fund hosted by the World Bank Group, assisted the Bangladesh Water Multi Stakeholder Partnership in facilitating the initiative, which was the result of a three-year effort. This initiative is taken with a goal of reducing untreated wastewater running into the ground and water bodies by 2035 in order to improve public health and boost Bangladesh's market competitiveness.

3.1.2 Objectives

The objective of this report is to bring up the challenges that are being faced in order to build a wastewater treatment system in Gazipur City Corporation (GCC) under the PPP model. The PPP model has started in Bangladesh since September 2020 and it is maintained under the 'Public Private Partnership Authority'. The PPP model is a public private partnership business model where the private partner is responsible for both constructing and maintaining the project for a certain period of time. However, under the PPP model both the government and the private partner make investments on the project.

IFC will work with the Gazipur City Corporation (GCC) and the PPP Authority of the Government of Bangladesh to structure and openly tender a public-private partnership project to build wastewater treatment facilities throughout Zones 1 (Tongi) and 4 (Gazipur) of Gazipur city because Gazipur is a major hub for the production of ready-to-wear apparel, the main export of the nation, and has experienced rapid urbanization over the past two decades. And due to this rapid and unplanned urbanization and industrial growth the water level of Gazipur is significantly decreasing which might create scarcity of water in Gazipur in the upcoming future. Thus, IFC has found it as a major issue and a perfect location to build a pilot project of a wastewater and fecal sludge treatment system in Bangladesh. However, support from Local Government (LGD) and Gazipur City Corporation (GCC) is very important for this project to bring a fast outcome or else the project might be delayed. On the other hand, willingness to pay for people of zone 1 and 4 also matters as they might have to pay more charges than current once the treatment plant goes operational. Nevertheless, the current situation of the water system of Gazipur is also a concern that will be a challenge to be solved. Thus, PwC was responsible to do due diligence in order to detect such challenges and also to know more about the rules and regulations of GoB.

3.2 Significance of the study

This internship report holds significant value as it delves into the challenges associated with implementing a wastewater treatment system in Gazipur City Corporation (GCC) under the PPP model. By exploring the complexities and intricacies of this project, the report provides valuable insights into the practical aspects of public-private partnerships, infrastructure development, and environmental sustainability. It offers an opportunity for interns to gain a comprehensive understanding of the role of international organizations like the International Finance Corporation (IFC) in addressing pressing issues such as water scarcity and urbanization. Additionally, the report sheds light on the importance of collaboration with local government bodies and the need to consider public acceptance and willingness to pay in such ventures. Moreover, the inclusion of PwC's due diligence process emphasizes the significance of regulatory compliance and thorough analysis in project assessment. By examining the challenges and potential solutions in this context, with practical knowledge and a holistic view of the complexities involved in developing sustainable infrastructure projects through public-private partnerships in emerging economies.

3.3 Methodology

The methodology employed for this internship report involved a combination of data gathering techniques to compile the necessary information. Both secondary and primary sources were utilized to ensure a comprehensive understanding of the project. Secondary data was collected through extensive research on websites, publications, and news portals, extracting relevant data and information related to the wastewater treatment plant project funded by the International Finance Corporation (IFC).

Primary sources included the use of PwC surveys, findings, and analysis, as well as interviews conducted with relevant stakeholders. These interviews comprised in-person, telephonic, and online discussions. In particular, meetings were held with government officials from the Local Government Development (LGD) and Gazipur City Corporation (GCC) to gather detailed knowledge about the implementation of the project and the support provided by the Government of Bangladesh (GoB) for PPP models in the wash sector.

To assess the current water supply situation in Gazipur, physical surveys and in-person interviews were conducted with officials from GCC. Additionally, primary research was conducted by directly engaging with residents of Gazipur through household surveys. This approach was deemed essential to gauge the willingness of consumers to pay for the increased charges associated with the usage of the wastewater treatment plant. The household survey method was chosen to ensure representation from diverse consumer groups, including those in undeveloped areas of Gazipur.

It is important to note that the project funded by IFC is still in the due diligence phase, and therefore the findings and analyses presented in this report are based on the progress made thus far.

3.4 Findings & Analysis

3.4.1 Rules and Regulations of PPP projects.

Taking up and Approval of the PPP Project

Taking up the PPP project – (1) Any project from within or outside of the annual development program may be chosen by the contracting authority or, as applicable, the PPP authority to be implemented as a PPP project.

(2) Whenever necessary, the board of governors may offer instructions to the contracting authority on the PPP implementation of any project, whether it fits under the annual development program or not.

Approval of a PPP project – For approval of any PPP project the final approval shall be granted from the Cabinet Committee.

National Priority Projects – Subject to the approval of the Cabinet Committee, the contracting authority or PPP authority, where applicable, has the authority to designate a project as a national priority project. This designation may be necessary to accelerate socioeconomic development or to promptly address any pressing issues affecting the general public.

Notwithstanding any conflicting provisions in this Act, the contracting authority or PPP authority, with the cabinet committee's approval, may establish inter-ministerial committees or

subcommittees. These committees are responsible for approving national priority projects, selecting private partners, and conducting negotiations, among other relevant tasks.

The rules shall prescribe the terms of reference, procedures, and meeting arrangements for the committees formed under subsection (2). Additionally, matters pertaining to the approval of national priority projects, selection of private partners, negotiation processes, and related aspects shall be governed by these rules.

Financial Participation of the Government in PPP projects - The Government has the option to provide financing for various activities within PPP projects. These activities may include technical assistance financing, viability gap financing, financing against equity and loans, financing against linked components, and financing for any other activities as determined by the PPP authority.

Power of Government to provide incentives – The Government may propose incentives to attract private sector involvement in PPP projects by general or special order in the official Gazette, upon advice of the Board of Governors.

Power and function of the contracting authority – (1) Subject to the terms of this Act and the rules and regulations sanctioned thereunder, the contracting authority may establish a partnership with the private partner through the implementation of a PPP project for the construction of any infrastructure or the reconstruction of any existing infrastructure of its own sector.

(2) To ensure the success of PPP projects, the contracting authority may assign its duties to any individual or company.

(3) The PPP authority must receive reports from the contracting authority on the status and activities of projects in the manner and at the intervals required by law.

(4) Notwithstanding anything contained in sub-section (3), the PPP authority may, at any time, require any report, information or data from the contracting authority and provide necessary direction to the contracting authority.

3.4.2 Selection of the Private Partner

Private partner selection process – (1) Without in-principle approval, no contracting authority shall conduct the partner selection process for PPP projects.

(2) A private partner may be chosen by the contracting authority or, where applicable, the PPP Authority in accordance with the guidelines that have been authorized by the Board of Governors.

Unsolicited proposal – (1) Any private organization may submit any type of PPP project proposal to the contracting authority or, as the case may be, the PPP Authority, in accordance with the rules recommended by the Board of Governors, including the proposal for the development of any infrastructure or the reconstruction of any existing infrastructure of the public sector, as well as its operation.

(2) Unsolicited proposals must be reviewed based on the procedure and rules established by the Board of Governors.

Explanation: For the purpose of this chapter, a "unsolicited proposal" is any written submission made by a private individual or organization independently without referring to a formal government request.

Negotiation: Only those terms that can be negotiated will be discussed; all other terms of the partnership agreement which cannot be negotiated will be excluded.

Incorporation of a project company – (1) After being chosen, the private partner must form a company whose shares are limited in accordance with the requirements of the national laws that regulate company formation either before or after the PPP contract is executed.

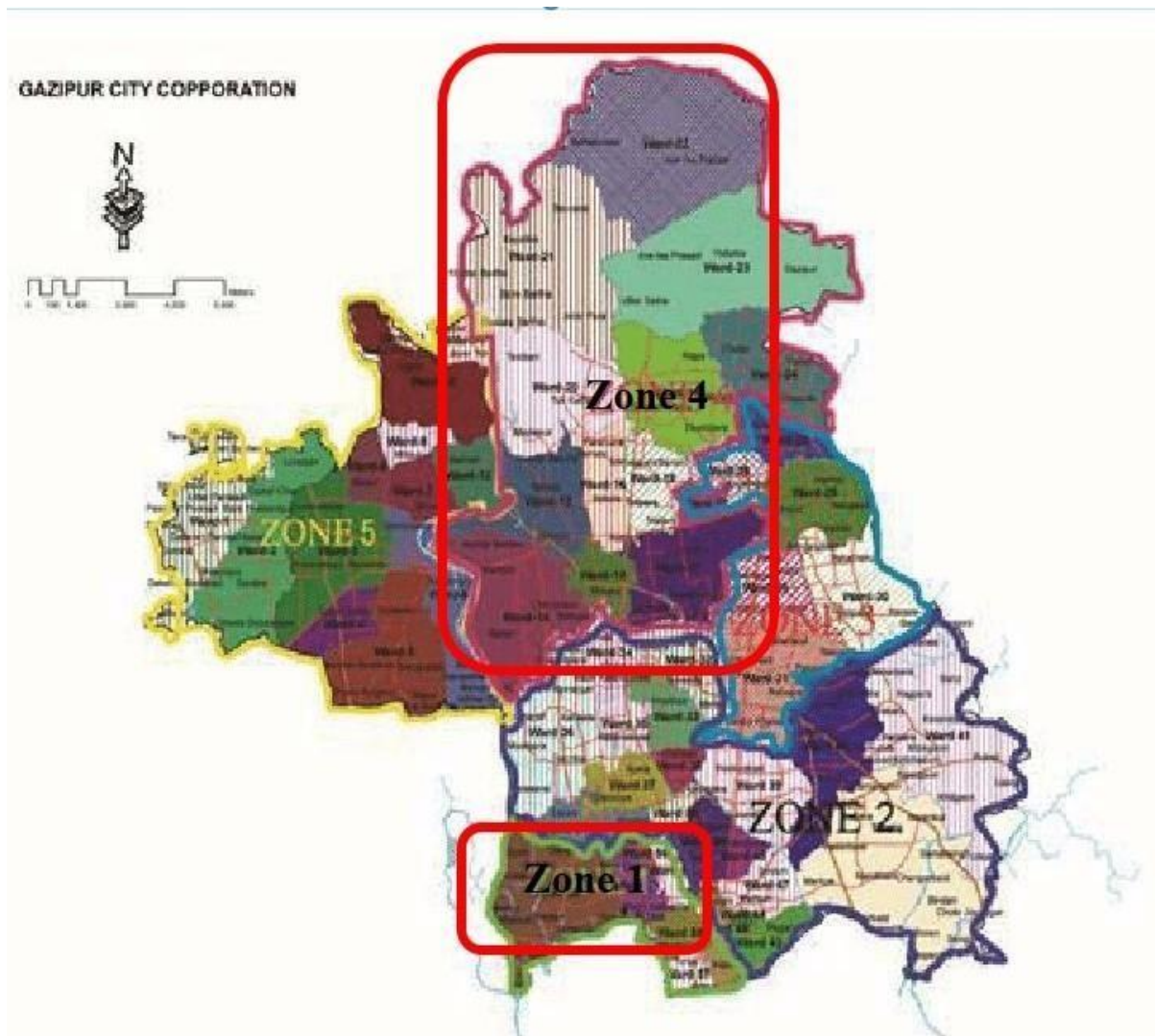
(2) After the PPP contract is executed, the project business will receive all of the private partner's rights and obligations.

(3) If there is a need to make any important changes to the project company's rules and regulations, articles of association, or other governing documents, the private partner must first get the contracting authority's prior approval.

Execution of the PPP contract - Based on the agreed-upon terms and conditions, the contracting authority will carry out the PPP agreement with the final private partner.

3.4.3 Current situation of water supply in Gazipur, Bangladesh

The survey covered a total of 55 units, including public and shared amenities, 19 individual families, 20 slum, and 16 apartments. The sample locations were split 50.80 percent in high density wards and the other half in low density wards. Two zones received an equal share of the sample size. The findings portion is separated into three sections: general, water supply, knowledge of the local sanitation facilities, and willingness of consumers to pay for a secure pit emptying system.



“The main issue for which maximum households do not receive proper water supply despite having piped lines from Gazipur City Corporation (GCC) is that the underground pipes installed during infrastructure development of water supply in 1.5 inch instead of minimum of

3 inch". (Nazrul Islam, Gazipur City Corporation (GCC), 18 April, 2021). This size is not sufficient enough for a proper water transport system through pipeline. Thus, most households prefer submersibles instead of using GAZIPUR CITY CORPORATION (GCC) water supply.

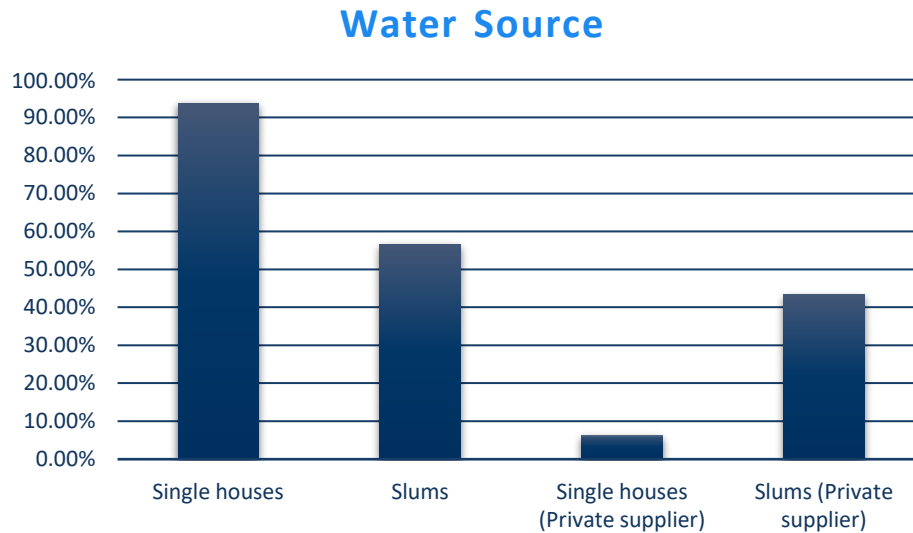


Diagram 1: Water and sanitation provider by type of establishments

According to the bar diagram (diagram 1) above, all apartment units, public spaces, and shared facilities receive water from Gazipur City Corporation (GCC), whereas only around 93.79 percent of single-family homes and 56.65 percent of slums do. The remaining establishments obtain their water needs from other private suppliers.

Based on economic class and population density, the property's average access road width is as follows: The width of the entry road to each of the properties was measured in order to determine whether a vacuum-tug truck (for non-network system) will be able to enter the premises of the establishments to supply their services. The outcomes indicate that the 3.72 m global average width. While access roads to each property in high-income and high-density neighborhoods tend to be slightly broader than in low-income and low-density areas, the difference is insignificant.

Table 1: Average width of access road to the property:

Type of Area	Average Width of the road (in meter)
Average width access to the property (overall)	3.72
For high density areas	3.95
For low density areas	3.48
For high income areas	3.86
For Low income areas	3.18

Average household size: The projected average number of people per household in single-family homes is 5.23, in slum areas it is 4.19, and in apartment buildings it is 4.57. According to research, the average household size in slums is less than that of single homes and apartment units, but the gap is not particularly large.

Percentage of HHs augmenting piped supply with supplementary sources: The percentage of households with access to piped water supplies from any source is shown in Table 4, as is the proportion of these households that receive their piped water supplies from Gazipur City Corporation (GCC). According to data, 17.7% of the establishments with access to piped water from any provider also need to supplement it with additional water sources. Additional research reveals that 42.69 percent of establishments that receive piped water from Gazipur City Corporation (GCC) supplement it with additional sources. Which suggests that more than 40% of Gazipur City Corporation (GCC)'s clients cannot get the water they need.

Average HHs water consumption:

The average daily water use for each type of residential establishment is shown in Table 5. The average amount of water used in a zone 1 and zone 4 each day is approx. 1,37,500 liters, respectively. The water consumption rate of slums is observed to be significantly lower than that of other establishments because slum households tend to have fewer members and more difficult access to water.

Table 2: Daily average water consumption rate:

Water Consumption in litres	Zone 4	Zone 1	Total	Percentage
500-1000	5	3	8	15%
1000-2000	4	5	9	16%
2000-3000	8	9	17	31%
3000-4000	5	7	12	22%
>4000	3	6	9	16%
TOTAL	25	30	55	100%

3.4.4 Sanitation Facilities

Access to sanitation facilities:

There have been no reports of improved sanitation. According to our data, restrooms were available in every establishment. The results of the survey for HHs, which includes zone 1 and zone 4 are shows that 84 percent of HHs still use in toilets without water seals in zone 1 whereas 86 percent households in zone 4 uses toilets with water seal. Information on the number of toilets with access to I holding tanks, septic tanks, or pit latrines draining directly to the outside is provided in the section below. According to data, 64.7 percent of enterprises have access to septic tanks, while the remaining establishments handle their waste water either through pits or by directly dumping it into an exterior drain.

Tables 8 shows the types of facilities used for discharge as well as how many of them have access to septic tanks.

Table 3: Waste water management system disaggregated by zone

Type	Zone 4	Zone 1	Total	Percentage
Septic Tank	9	28	37	67%
Pit Latrine	16	2	18	33%
TOTAL	25	30	55	100%

Toilet waste typically moves from the toilet to the septic tank, then to a soak well or drainage pit that aids in absorbing septic tank effluent into the nearby soil. Even though the majority of the toilets in the survey had access to septic tanks, most of these tanks lacked a soak-well,

causing the tank to overflow and contaminate nearby sewers and water bodies. Our data reveals that only 20% of toilets with septic tanks feature two chambers and a soak-well.

Table 4: The average estimated size of a septic tank is as follows:

Dimension of Septic tank	Length in ft.
Width	9.13
Length	11.24
Depth	8.84

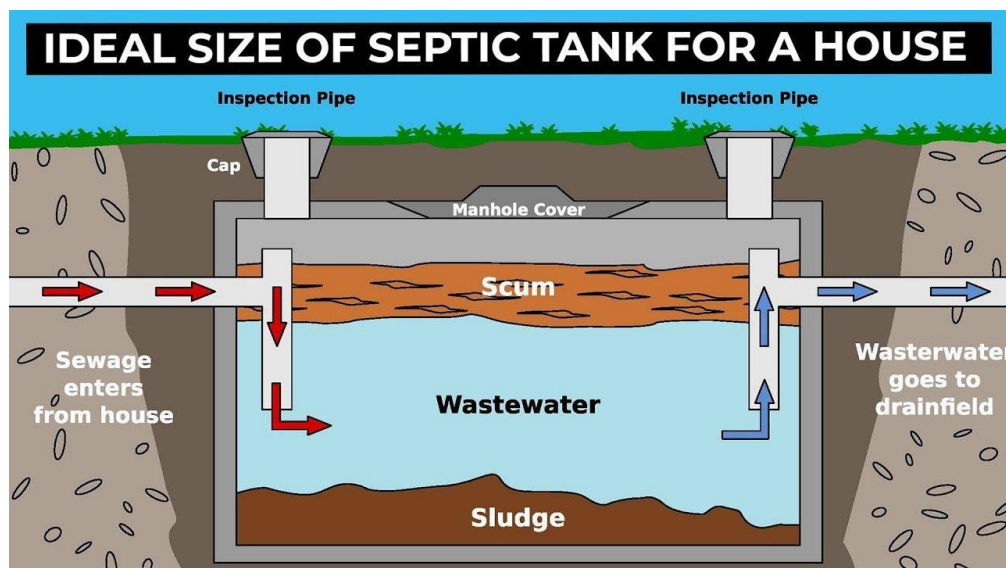


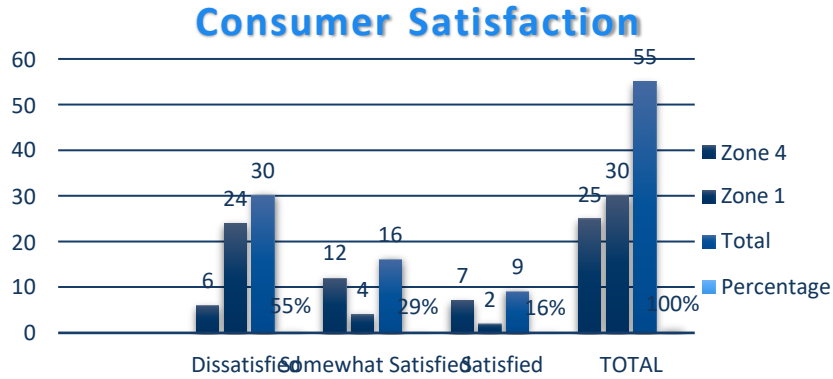
Diagram: Septic tank size in general.

3.4.5 Pit cleaning:

According to our research, the vast majority of HHs in the Gazipur City Corporation (GCC) only empty their pits when they overflow and cleaning is absolutely necessary. Pits and tanks are typically cleaned on an as-needed basis using a manual emptier.

Satisfaction with current emptying services: Most households only clean their pit when it overflows, a technique known as emergency pit cleaning. A sweeper (manual emptier) does the cleaning, and sludge is typically dumped in drains, rivers, or open areas. More than 90% of the homeowners questioned stated that they are not satisfied with the manual pit cleaners' services or are just moderately satisfied (table 9.1). The majority's main source of unhappiness is the expensive price and subpar service.

Diagram 9.1: Satisfaction with current emptying services



3.5 Willingness to Pay

The survey aimed to determine the importance of keeping a clean environment in the areas around individuals' homes, and the results are quite positive. It appears that there is a large demand for improving environmental conditions through wastewater services. A clean environment is highly important to 95.3 percent of respondents, according to the research.

Table 5: Importance of clean environment outside:

Options	Zone 4	Zone 1	Total	Percentage
Somewhat important	8	6	14	25%
Very Important	17	24	41	75%
Total	25	30	55	100%

3.5.1 Willingness to pay connection fees:

In order to provide services of a wastewater treatment facility many households will require new or improved pipeline and to make it more feasible customers were offered to pay a one time connection fee. However, according to our survey 87.3% consumers are willing to pay for their own connection whereas 12.7% denied to do so.

The connection fee was calculated considering the cost of raw materials only at cost and thus it varies from 1000 to 2500 depending of requirement of raw materials. The result shows that maximum of 47.3% respondents are willing to pay around 1500 BDT, 21.8% are willing to pay BDT 2000 and 20% are willing to pay 2500 BDT and around 13% consumers are willing to

pay any amount as like others. Thus, it would be more feasible to receive such supports from the end of the consumers.

Table 6: Willing to pay extra for connection fees.

Options	Zone 4	Zone 1	Total	Percentage
<=1000	2	1	3	5%
1000-1500	10	13	23	42%
1500-2000	6	2	8	15%
2000-2500	5	9	14	25%
Any-charges	2	5	7	13%
TOTAL	25	30	55	100%

3.5.2 Willingness to Pay for Improved Wastewater Services:

We surveyed consumers about their willingness to pay for each of these services separately in order to understand what they considered a reasonable charge for safe wastewater services, both network and non-network services.

Since there was never a predetermined price for these services, the willingness to pay of the respondents was compared to their existing water bill to determine if they would be willing to pay an amount equal to or greater than that bill. According to the data, for services based on network sewerage, 32.8% percent agreed to pay the same amount as the present water charges, and 67.2 percent agreed to pay more than their current costs in comparison to water supply charges.

Table 7: Number of HHs surveyed willing to pay extra for sewerage (network) services:

Wilingness to pay for network services	Zone1	Zone4	Total
Ok to pay equal to current water charge	22	13	35
Higher than the current water charge	3	17	20
Total	25	30	55

3.5.3 Willingness to pay for improved emptying (non-network) services:

In order to determine whether respondents wanted to pay more or less for a non-network service, we asked them to compare pricing with their existing emptying costs. Most of the respondents said they would prefer to pay less than the going rate. For this service, about 36.3 percent of people agreed to pay the same price as it currently costs, while 63.7 percent are willing to pay less. Thus, it may be determined that residents have minimal importance on paying for non-network services, such as pit emptying, and that these services are not a preferred alternative. This may likely be due to the current experience of pit emptying as the current practice is not delivering a satisfactory clean environment to the consumers.

However the additional charges were considered to be as minimum as possible from 60 BDT to 240 BDT. This amount was considered in so that minimum consumers deny to avail the service. Moreover, the billings system is more likely to be on a periodic payment method so as we think that paying such small amounts each month would be more feasible.

Table 8: Number of HHs surveyed willing to pay for improved emptying (non-network) services compared to current charges:

Willingness to pay for improved emptying system	Zone-1	Zone-3	Total
Lot lower than the current rate	11	20	31
Bit lower than the current rate	1	3	4
Same rate	18	2	20

Note: The current rate paid for tank emptying services is 1500 to 12000 on average depending on tank size.

3.5.4 Willingness to pay for Fecal Sludge Management:

As we found previously in our findings that fecal sludge management is currently done by labors using manually emptying method. If a wastewater treatment plant is executed then the fecal sludge will be managed automatically through pipeline. However, it is not necessary that every household will have the facility of a fecal sludge management plant and thus Gazipur City Corporation (GCC) will be providing emptying service by using vacuum trucks and the waste water will be eventually carried to the treatment plant from where it will be purified and redistributed.

According to the survey result consumers are will to avail such services from Gazipur City Corporation (GCC) but they have concerns of paying less than current desludging charges. Consumers are willing to avail on-demand desludging services whenever required within a price range of 1000 to 3000 BDT. However, it is not certain and will vary depending on the costing.

Nevertheless, the ultimate goal is to maintain a clean and healthy environment for which this is extremely necessary because during manual emptying the waste is mostly directly discharged into the drains polluting the surrounding.

4. Conclusion:

Gazipur is an extreme urbanizing city of Bangladesh which consist of many exporting industries and thus requires a lot natural resource. On the other hand, studies also found that the water level of Gazipur is decreasing day by day and there is a high chances that within a decade 70% of the water level will decrease creating a massive scarcity of water in Gazipur.

Therefore, IFC has initiated this wastewater treatment plant so that water can be reused efficiently in order to save Gazipur from scarcity of water. Moreover, this project will ensure the beauty of environment in Gazipur as it will improve the sewerage system.

However, according to our findings it is observed that support from government is needed to be increased in legitimate ways so that every household avails this service . This project will not be very effective if even 35% of the residents of Gazipur zone 1 and zone 4 denies to avail it. Moreover, before starting this project the Gazipur City Corporation (GCC) should come up with more transparent report of their actual annual earnings and expenses because their current reports are not accurate and very vague. As a result it will be difficult to predict the actual rate of return for the private partners under this PPP model project.

This will be a very beneficial project for Gazipur City Corporation (GCC) in the long despite the some difficulties in the short run while constructing the project. Nevertheless, local government division needs to directly instruct Gazipur City Corporation (GCC) to cooperate with IFC in order to smoothen the progress of this project and reduce the future risk of water

scarcity and unhealthy environment in Gazipur.

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