Report On

Customer Feedback on SSLCOMMERZ for Enhancing Metro Rail Payment Solutions

By

Ha-meem Ahmad
21364095

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

Masters of Business Administration
Brac University
February 2026

Declaration

It is hereby declared that

1. The internship report submitted is my/our own original work while completing degree at BRAC University.
2. The report does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The report does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I/We have acknowledged all main sources of help.

Student's Full Name & Signature:

Ha-meem Ahmad

21364095

Supervisor's Full Name & Signature:

Dr. Tarnima Warda Andalib, PhD

Assistant Professor,

Brac University

Letter of Transmittal

Dr. Tarnima Warda Andalib

Assistant Professor,

BRAC Business School

BRAC University

66 Mohakhali, Dhaka-1212

Subject: Submission of Internship Report on HR's Role in SSLCOMMERZ for Supporting Metro Rail Payment Solutions

Dear Madam,

This is my pleasure to present my internship report titled "HR's Role in SSLCOMMERZ for Supporting Metro Rail Payment Solutions" which I completed for my MBA degree at BRAC University with your guidance.

This comprehensive report summarizes key findings and recommendations for HR's Role in SSLCOMMERZ for Supporting Metro Rail. The report incorporates my personal experience, critical personnel interview insights, and a thorough market analysis.

I believe that this report aligns with your expectations and offers actionable insights into the strategic initiatives of the HR Role in SSLCOMMERZ for implementing Payment Gateway system for Metro Rail Project.

Sincerely yours,

____

Ha-meem Ahmad
21364095
BRAC Business School
BRAC University
Date: October 20, 2024

Non-Disclosure Agreement

This Non-Disclosure Agreement (NDA) is made and entered into by and between SSLCOMMERZ and Ha-meem Ahmad. The NDA outlines the protection of confidential and proprietary information provided to Ha-meem Ahmad during the internship period. This agreement ensures that all information regarding company processes, projects, clients, and data will remain confidential and will not be disclosed to any third party without prior written consent from Software Shop Limited.

Acknowledgement

I would like to express my profound appreciation to SSLCOMMERZ for providing me with the chance to complete my internship program within their highly regarded firm. My profound gratitude goes out to Saifur Rahman, my supervisor at SSLCOMMERZ, for providing me with consistent direction, support, and insightful comments during the course of my internship responsibilities. In addition, I would want to take this opportunity to convey my appreciation to my academic adviser, Tarnima Warda Andalib PhD, for their assistance throughout this difficult time. I want to express my gratitude to everyone in the SSLCOMMERZ team for their assistance and collaboration.

Executive Summary

In this study, the crucial role that Human Resources (HR) plays at SSLCOMMERZ in allowing payment solutions for the Dhaka Metro Rail Project is investigated. This study also explores the feedback on the customers of using the metro rail usage. Data was collected from 100 respondent representing various occupations and industries from private professional sectors in IT finance and others. As Bangladesh begins to implement significant infrastructure development, the use of effective payment mechanisms is essential to the success of the project. The Human Resources department plays a crucial role in the process of recruiting and training skilled professionals who are capable of developing and implementing payment solutions that are tailored to meet the specific requirements of large-scale projects. The focus of this article is on human resource management strategies that, in addition to maintaining compliance and fostering collaboration among many stakeholders, synchronize talent management with project requirements. Additionally, it addresses the challenges that are experienced in the process of integrating payment systems within an infrastructure environment that is undergoing rapid change and makes recommendations for improvements to HR practices that will increase the efficiency with which these projects are supported. By increasing its human resources capabilities, SSLCOMMERZ has the potential to significantly contribute to the successful implementation of the Metro Rail Project, which will ultimately lead to the advancement of the transportation industry across the nation.

Table of Contents

List of Figures

List of Acronyms

IT	Information Technology
PSO	Payment Service Operator
PCI	Payment Card Industry
DSS	Data Security Standard
PG	Payment Gateway
MFS	Mobile Financial Service
QR	Quick Response
API	Application Programming Interface
EMI	Equated Monthly Installments
SDK	Software Development Kit
POS	Point of Sale
SSL	Secure Sockets Layer (encryption technology)
OTP	One-Time Password
3DS	3-D Secure (an authentication protocol)
BIN	Bank Identification Number
MCC	Merchant Category Code
IVR	Interactive Voice Response

Glossary

Payment Gateway (PG)	A payment gateway is a system that enables the acceptance and authorization of electronic payments, primarily for online transactions. It serves as an intermediary between the client and the merchant by securely relaying payment information among the customer's bank (issuing bank), the merchant's bank (acquiring bank), and the payment processor..
Application Programming Interface (API)	The initial digits of a payment card that designate the issuing bank or institution. Bank Identification Numbers (BINs) are essential for transaction processing and identifying the source of a transaction.
Payment Card Industry (PCI)	Commonly associated with PCI DSS (Payment Card Industry Data Security Standard), it comprises a series of security protocols aimed at safeguarding cardholder data during and subsequent to a financial transaction.
Data Security Standard	Use one table row for each item to allow sorting using Word’s table tools.

Chapter 1: Overview of Internship

1.1 Student Information:

Name: Ha-meem Ahmad,

ID: 21364095,

Program: MBA

Major: HRM

1.2 Internship Information:

Company: SSLCOMMERZ

Internship Period: 3 Months (November 2024 - March 2025)

Department: Business Development

Company Supervisor Name: Saifur Rahman

Designation: Deputy Manager

Masters of Business Administration
Brac University
October 2024

1.3 Job Responsibilities

- Provide support in the acquisition of specialized positions to facilitate the integration of payment gateways into the metro rail project.
- Develop training programs that prioritize regulatory compliance, user experience, and payment security.
- Develop and supervise performance management systems that are in accordance with project milestones.

- Ensure that the processing of payments is in accordance with all applicable legal and regulatory standards.
- It is important to encourage departments to work together across functional lines in order to achieve seamless integration.
- You are responsible for making arrangements for employee training on risk management and risk reduction methods.
- Through the adoption of specific HR initiatives, you can improve the level of employee engagement and motivation overall.

1.4 Internship Outcomes:

- Comprehensive understanding of the role that human resources plays in aiding technical integrations, such as payment gateways of various kinds.
- The individual possesses a practical understanding and skill in the development of training programs that are specific to security and compliance.
- I have extensive experience working with performance management systems that are specifically developed for large-scale infrastructure projects.
- This article provides a comprehensive understanding of the regulatory frameworks and risk management in the world of payment gateways.
- The ability to improve communication and collaboration skills across a wide range of departments.

1.5 Student's contribution to the company

Hiring Assistance: Assisted in the recruitment and integration of professionals who were adept in payment systems, security, and user experience. This was accomplished through the provision of hiring assistance.

Training Setup: Assistance in the development of training programs that centered on the enhancement of the Metro Rail system's user interface, regulations, and payment security was provided as part of the training setup.

Performance Goals: Efforts were made to set performance targets in order to guarantee that the personnel and teams within the organization met the timeframes for the project as well as the quality requirements.

Compliance & Risk: Facilitated the organization of sessions to inform employees about industry regulations and establish strategies to avoid risks, including data breaches. Compliance and Risk had the responsibility of ensuring that these sessions were carried out.

Team Coordination: The coordination of the team ensured that the payment system functioned effectively by facilitating communication between departments, especially those dealing with finance and information technology.

Enhancing Engagement: Promoted efforts that maintained staff motivation, notably through recognition that was related to the success of the project.

1.6 Recommendations (to the company on future internships)

To enhance the internship program, SSLCOMMERZ should:

- Align internships with specific roles and initiatives.
- Offer mentorship and comprehensive training.
- Encourage a supportive and collaborative atmosphere.
- Provide performance evaluations and feedback.
- Investigate potential full-time employment opportunities.
- Collect feedback from trainees and integrate it into future program enhancements.

Chapter 2: Organization Part

2.1 Introduction & Overview of SSLCOMMERZ

SSLCOMMERZ is a leading payment gateway service provider in Bangladesh. The company is committed to facilitating online transactions that are both secure and efficient for businesses as well as for individual customers. Since its founding in 2010, the company has grown to become a prominent player in the rapidly developing e-commerce sector of the country. Promoting financial inclusion and the use of digital payment methods is the goal of this initiative.

Because SSLCOMMERZ offers such a wide variety of payment choices, merchants are able to take a wide variety of payment methods, including mobile banking, online banking, credit and debit cards, and more payment methods. It is essential for organizations to possess this adaptability in order to ensure that they are able to provide uninterrupted transaction experiences and fulfill the varied expectations of their clients. The user-friendly interface of the platform makes it easy for merchants to incorporate payment process ing into their websites and applications in a fluid manner, which eventually results in an enha ncement in the entire experience that customers enjoy with the platform on the whole.

The main goal of SSLCOMMERZ is to encourage the adoption of electronic transactions in Bangladesh in order to facilitate the country's transition to a digital economy. By giving companies the essential resources, they need to prosper in this constantly changing environment, SSLCOMMERZ is leading the nation's swift transition to digital commerce. The company's main goal is to make it simpler for small and medium-sized businesses (SMEs) to engage in the digital economy by streamlining the payment process.

SSLCOMMERZ prioritises security and has implemented cutting-edge security measures to safeguard private information while it is being processed during transactions. By showcasing a dedication to security, which is crucial to building a strong environment for online commerce, businesses may build trust with their clients.

The customer-centric approach that SSLCOMMERZ takes is one of the reasons they have gained such widespread recognition. The company provides organisations with expert support and consultancy services to help them deal with the challenges posed by online payment systems. The establishment of solid client relationships is a top priority for SSLCOMMERZ. Offering payment solutions is not the company's sole goal; promoting the growth and prosperity of its business partners is its main goal.

Apart from the fundamental payment services it offers, SSLCOMMERZ is dedicated to continuously investing in technological advancements to improve the services it offers. The company maintains a competitive edge over its competitors by implementing features like mobile wallet connectivity, subscription invoicing, and sophisticated analytics tools that give merchants crucial information about user behavior and transactions.

SSLCOMMERZ is in a unique position to significantly contribute to the expansion of e-commerce and the economic development of Bangladesh because it is a vital organization in the country's digital payment sector. SSLCOMMERZ has several significant roles to play in shaping Bangladeshi commerce's future.

2.2 Management Practices of SSLCOMMERZ

In light of the fact that SSLCOMMERZ is the most prominent payment gateway service provider in Bangladesh, it is predicted that the company will implement management strategies that are in accordance with its objectives of achieving innovation, security, and customer pleasure. These management strategies ensure that the company will remain competitive, improve efficiency, and provide support for growth in the e-commerce and digital payment industries, which are undergoing fast change. The following is a list of some fundamental management methods that may be implemented at SSLCOMMERZ according to the following:

Strategic Planning and Goal Setting

- **Vision and Mission Alignment**:
  Management guarantees that all departments and operations are congruent with the company's objective to facilitate digital transactions and enhance financial inclusion. Explicit objectives are established in alignment with the long-term ambition of digitizing Bangladesh via secure and resilient payment solutions.

- **Data-Driven Decision Making**:

It is likely that decisions made at SSLCOMMERZ are founded on an exhaustive examination of data, which is especially important in a sector where it is crucial to have a solid understanding of transaction patterns, consumer behaviors, and market trends in order to achieve success. It can be assumed that management makes use of vital metrics in order to evaluate the potential and performance of the market.

Innovation and Technology Adoption

- **Technology-Driven Solutions**:
  As a company that operates within the financial sector, SSLCOMMERZ is expected to employ cutting-edge technologies in order to enhance the quality of the payment gateway services it provides. This includes making continual investments in mobile payment systems, subscription services, and multi-currency transaction functionality in order to meet the diverse demands of the market.
- **Research and Development (R&D)**:
  It is highly likely that management places a high priority on research and development (R&D) in order to ensure that SSLCOMMERZ continues to be at the forefront of technological breakthroughs and regulatory alterations. Because of this, the company is able to quickly adapt to changes in the market and provide innovative solutions.

Customer-Centric Approach

- **Customer Satisfaction as a Priority**:
  It is essential for any successful organization to place a high focus on the pleasure of its customers. This is especially true when it comes to the integration of payment gateway solutions for large-scale projects such as the Metro Rail system. To earn the trust of commuters who rely on the system for their daily travel, it is essential to ensure that transactions are carried out in a way that is not only secure but also user-friendly. Not only does a flawless payment experience increase user pleasure, but it also increases operational efficiency by lowering the number of errors and the amount of time systems are offline. The fact that SSLCOMMERZ places a strong emphasis on enhancing the customer experience by means of efficient training, performance management, and ongoing feedback facilitates the process of ensuring that every facet

of the payment procedure lives up to the expectations of the users. Through the process of aligning the workforce with these principles, the firm is able to develop a platform that is dependable and secure. This, in turn, leads to the cultivation of customer loyalty and secures the success of the project over the course of its lifetime.

- **Tailored Solutions**:
  The administration of SSLCOMMERZ focuses a substantial amount of weight on the provision of excellent service in order to guarantee that both individual customers and businesses have a pleasant experience while interacting with the platform. This is because the platform is designed to facilitate the exchange of information. There are a number of components that make up this consumer-focused strategy. These components include the ease of payment operations, the presentation of a variety of alternative payment options, and the supply of dependable customer help.

Operational Efficiency and Process Optimization

- **Process Automation**:
  There is a good chance that management is now working on automating a variety of processes that are integrated into the payment system in order to enhance operational efficiency. The procedures in question encompass both the processing of transactions and the verification of conformity with various regulations. The amount of time required to do activities is cut down as a result of this, which helps to lessen the possibility of errors produced by humans.
- **Lean Management Practices**:
  There is a possibility that SSLCOMMERZ will choose to use lean management practices in order to get rid of waste and enhance operational workflows, which would ultimately lead to a more efficient utilization of resources. Consequently, this makes it possible for the company to expand while still maintaining the excellent standards of service that it has always maintained.

Risk Management and Security

- **Advanced Security Measures**:
- In view of the sensitive nature of financial transactions, SSLCOMMERZ places a high premium on increasing cybersecurity. This is accomplished through the use of

advanced security measures. The management of the firm makes certain that strong encryption methods, fraud detection mechanisms, and periodic security audits are implemented throughout the entire organization. This is done with the intention of protecting customer information and financial transactions.

- **Compliance with Regulations**:

  The management places a strong emphasis on ensuring that the organization complies with both domestic and international financial rules. In order to accomplish this, it is necessary to keep up with the ever-evolving payment rules, anti-money laundering (AML) legislation, and to retain PCI-DSS certification.

Performance Monitoring and Accountability

- **KPI-Based Performance Evaluation**:

  Evaluation of Performance Based on Key Performance Indicators (KPIs) Key performance indicators (KPIs) are often implemented in order to evaluate the effectiveness of teams, departments, and individual individuals. By conducting performance assessments on a regular basis, a company can ensure that it continues to align itself with its goals and that its employees are held accountable for the obligations they have been assigned.

- **Real-Time Analytics and Dashboards**:

  It is quite probable that the management of SSLCOMMERZ employs the utilization of real-time analytics and dashboards in order to monitor the functioning of the payment system, assess the patterns of transactions, and discover areas that have the potential to become more efficient. Through the utilization of various pieces of equipment, it is possible to make rapid adjustments in order to enhance operations.

Leadership and Talent Development

- **Leadership at All Levels**:

  It is quite probable that SSLCOMMERZ fosters a culture of leadership throughout the entirety of the organization. This culture is characterized by the delegation of authority to individuals, encouraging them to assume responsibility for their positions and the responsibilities that they are accountable for. The members of the team receive assistance from management in the development of their leadership skills in order to guarantee that the team will continue to demonstrate continual progress.

- **Employee Development and Training**:

  The management commits resources to projects that provide continual staff training in order to guarantee that the team is well-versed in evolving technologies, cybersecurity, and industry-specific competencies. The nurture of talent is ensured by leadership through the provision of opportunities for career progression and mentoring relationships.

2.3 HR Practices at SSLCOMMERZ

Talent Acquisition and Recruitment

- **Specialized Recruitment:**

  It is reasonable to assume that SSLCOMMERZ places a high priority on the recruitment of experts who are proficient in digital payments, e-commerce, and financial technology, all of which are crucial domains of the operations that the firm engages in.

- **Diversity and Inclusion:** It is possible for the firm to increase the diversity of its staff by recruiting individuals who come from a variety of educational, cultural, and professional backgrounds. This will allow the corporation to incorporate new perspectives into its operations.

Employee Development and Training

- **Continuous Learning:** It would appear that SSLCOMMERZ devotes resources to the process of upskilling and reskilling its workers. The company offers training programs in a variety of fields, including digital payments, cybersecurity, customer experience management, and compliance.
- **Leadership Development:** Initiatives designed to cultivate prospective leaders may concentrate on equipping people for managerial and leadership positions as the organization expands.

Performance Management

- **Goal Setting and KPIs:**
  The Human Resources department at SSLCOMMERZ is tasked with the responsibility of designing a performance management system that includes SMART goals (which stand for specific, measurable, attainable, relevant, and time-bound) that are specifically tied to the business objectives of the organization. Key Performance

Indicators, often known as KPIs, are typically built with the purpose of evaluating the performance of both individuals and teams.

- **Regular Feedback and Reviews:**

  Performance Evaluations That Have Been Carried Out From time to time in order to foster the growth of staff members, performance assessments are frequently carried out on a regular basis, with a particular emphasis placed on the provision of constructive comments. It may be necessary for management and staff to have individual conversations in order to evaluate the progress that has been made toward key performance indicators (KPIs) when implementing this strategy.

Compensation and Benefits

- **Competitive Salary Structure:**

  It is possible that Human Resources will make the decision to keep a remuneration package that is in line with the standards of the industry in order to both attract and retain top-tier experts. A competitive compensation structure is maintained by the implementation of this practice. Additionally, there is a possibility that the compensation plan will include components such as commissions, bonuses, and incentives that are depending on performance. This is something that might be included in the plan.

- **Benefits and Work-Life Balance:**

  In addition to monetary compensation, it is likely that SSLCOMMERZ offers health benefits, insurance, and paid leave in order to encourage employee wellbeing and enable them to maintain a good balance between their personal lives and their professional lives. All of this is done in order to keep a good balance between job and personal life.

Employee Engagement and Retention

- **Recognition Programs:**

There is a possibility that SSLCOMMERZ would implement appreciation programs; these programs would be specifically tailored to celebrate the accomplishments of workers who have made significant contributions to the development of the company. Two ways in which these programs are effective are by enhancing morale and generating a sense of belonging among the participants.

- **Employee Satisfaction Surveys:**
  It is possible for Human Resources to conduct periodic surveys in order to evaluate the level of satisfaction experienced by employees, collect feedback for the purpose of enhancing workplace practices, identify areas of concern, and implement improvements based on the information gathered in order to enhance the overall employee experience.

Compliance and Legal Adherence

- **Labor Law Compliance:**

  Compliance with Labor regulations It is the responsibility of the Human Resources department to guarantee that the company complies with Bangladeshi labor regulations, which include restrictions on working hours, employee rights, and workplace safety.

- **Data Privacy and Security:**

  In light of SSLCOMMERZ's involvement in financial transactions, it is quite likely that the Human Resources department is currently engaged in the process of teaching employees on data privacy and cybersecurity regulations in order to ensure the protection of sensitive information.

Cultural Alignment and Organizational Values

- **Promoting Organizational Values:**

  Encouragement of Organizational Values The department of Human Resources unquestionably makes a contribution to the process of instilling the values of the organization, which include creativity, customer orientation, and integrity, throughout the workforce. In order to accomplish this, it may be necessary to cultivate a culture within the organization that emphasizes respect, ethical behavior, and teamwork.

- **Diversity and Inclusion Initiatives:**

  The cultivation of an inclusive workplace environment that fosters a sense of appr eciation among individuals hailing from a wide range of backgrounds and viewpoi nts may be a potential goal for SSLCOMMERZ.

Technology Integration in HR Processes

- **HR Information Systems (HRIS):**

  SSLCOMMERZ may utilize HR technology platforms to automate many processes among which are recruitment, payroll administration, and performance monitoring. Both the optimization of HR procedures and the promise of increased efficiency are made possible as a result of this.

- **Data-Driven HR Decisions:** Human Resources can apply data analytics to make informed decisions on workforce management. These decisions might include the discovery of talent shortfalls, enhancement of employee engagement, and optimization of team performance. Therefore, data-driven HR decisions are a significant aspect of human resource management.

Health, Safety, and Well-Being

- **Crisis Management:**

  The construction of a secure working environment may be a priority for SSLCOMMERZ in light of recent global events like as the COVID-19 pandemic. This can be accomplished through the implementation of policies for remote work, health protocols, and techniques for crisis communication.

- **Workplace Wellness Programs:**

  Workplace wellness programs are initiatives that can be established by Human Resources to improve the health and well-being of employees. There is a possibility that these programs will include assistance with mental health, ergonomic work settings, and exercise programs that are tailored exclusively for employees.

Employee Relations and Conflict Resolution

- **Open Communication Channels:** HR at SSLCOMMERZ presumably advocates an open-door policy, allowing employees to voice their issues, suggestions, or criticisms without fear of retribution.
- **Conflict Resolution Mechanisms:** Human Resources may have instituted protocols for addressing disputes or conflicts within the workplace, ensuring that matters are managed equitably and promptly.

2.4 Services of SSLCOMMERZ

SSLCOMMERZ's Business Services

SSLCOMMERZ offers a wide variety of payment solutions within the context of the digital economy. These solutions are designed to cater to the various requirements of businesses as well as individual customers who are interested in making purchases. An inventory of some of the most significant services that SSLCOMMERZ provides is presented in the following list:

Payment Gateway Solutions:

SSLCOMMERZ is in a unique position to significantly contribute to the expansion of e-commerce and the economic development of Bangladesh because it is a vital organisation in the country's digital payment sector. SSLCOMMERZ has several significant roles to play in shaping Bangladeshi commerce's future.

Mobile Payment Solutions:

The firm provides a wide selection of mobile payment options that make using mobile devices for commercial transactions easier. The ease with which customers can use their telephones to make payments enhances the whole shopping experience. Customers are able to make purchases thanks to this service.

Recurring Billing and Subscription Services

In order to establish billing processes that are recurring, businesses that manage their operations based on a subscription model are able to take advantage of the tools that SSLCOMMERZ provides. These tools allow these firms to develop billing procedures. The process of collecting payments for services or products that are supplied on a subscription basis can be automated thanks to this feature, which makes it feasible to automate the procedure. This assures that merchants will have a steady flow of cash through their establishments.

E-commerce Integration:

SSLCOMMERZ provides businesses with uncomplicated integration solutions for e-commerce platforms, which enables them to rapidly include the payment gateway into their online stores. This is referred to as e-commerce integration. E-commerce integration is the term used to describe this process. Due to the fact that this interface is compatible with a broad variety of shopping cart systems, it is now possible for businesses to connect their payment processes in a manner that is more efficient.

Security Solutions:

SSLCOMMERZ has put advanced security measures in place, like encryption and fraud detection systems, to protect sensitive customer data since it understands how important it is to guarantee the security of online transactions. These protocols are implemented with the goal of protecting the privacy of the data. One important element that contributes to the development of trust between the companies and their clientele is the commitment to security exhibited by these companies.

Dashboard for the Merchant:

Additionally, by using an intuitive and simple merchant dashboard, the company provides businesses with real-time access to transaction data, sales figures, and analytics. This enables the firm to provide companies with everything they require to operate.

efficiently. As a result, the company can give companies a competitive edge over their similar rivals. With the help of this service, retailers can keep an eye on their own performance, learn more about the behaviour of their clients, and make smarter business decisions. Merchants who use this service can take advantage of all these advantages.

Multi-Currency Support:

Multiple Currency Support: SSLCOMMERZ enables small and medium-sized enterprises to take payments in a number of different currencies. For these businesses, this enables them to conduct commercial agreements and offer services.

to clients located worldwide. This feature, which is particularly beneficial for larger organisations, can lead to substantial advantages for companies looking to expand their activities outside of Bangladesh.

Customer Support Services:

Customer Support Services: By offering its merchants a special support service, SSLCOMMERZ places a high priority on customer satisfaction. Making sure the merchants are satisfied with the service we offer is the aim of this. The mission is

of the company to guarantee that companies can get timely support whenever they need it by offering support via a range of channels, including live chat, email, and the phone. This measure is implemented to ensure that businesses will receive support in a timely manner.

Affiliate Programs:

To improve its marketing efforts and promote its services even more, SSLCOMMERZ has created affiliate programs. This is done to promote its services even more. Partners have the opportunity to profit from these initiatives whenever they bring in new merchants to the agency. Partners can choose this option. SSLCOMMERZ is able to increase its impact while giving affiliates more ways to generate revenue at the same time by putting this plan into action.

Payment Links:

SSLCOMMERZ offers a service that enables merchants to produce payment links, which can then be disseminated, for example, through social media or other communication channels such as email. It is especially helpful for freelancers and small businesses that wish to take payments online but may not have a complete e-commerce infrastructure. That is because the ability to accept payments online is extremely helpful for these types of organizations.

2.5 Mission and Vision Statement

Mission Statement:

Leave a positive footprint by empowering people and creating an environment of growth through innovative, secured, and robust software in providing excellent business service experiences.

Vision Statement:

Digitalization of Bangladesh by helping individuals and organizations to gain higher efficiency by reaching their true potential.

2.6 Organogram

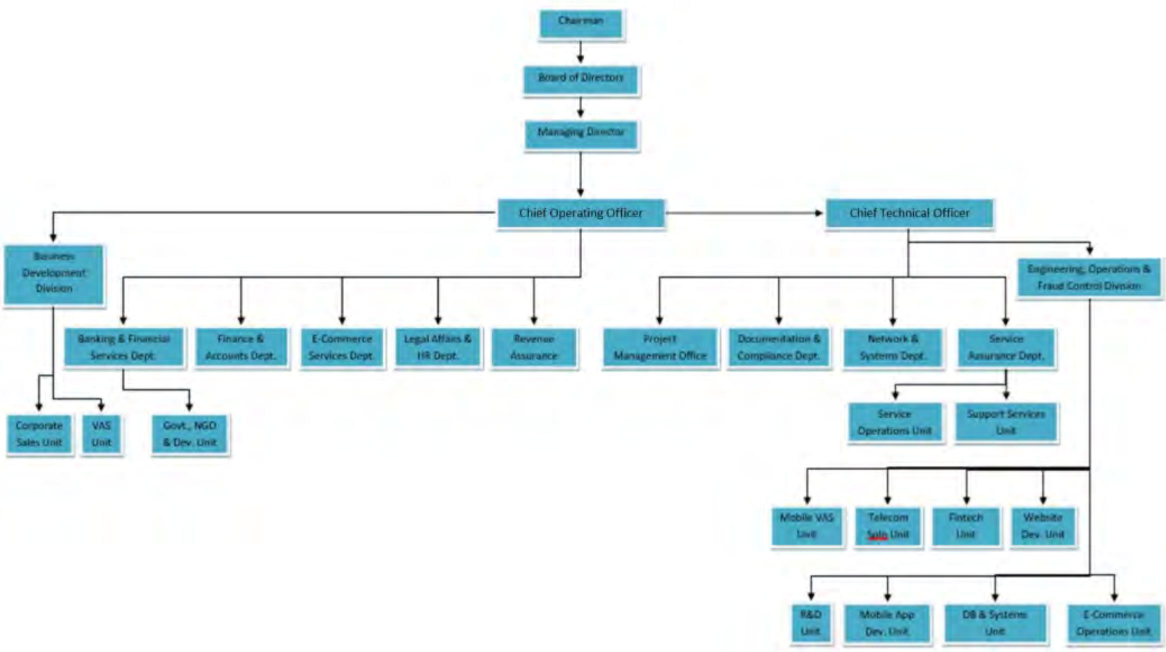


Figure 1: Organogram

2.7 Swot Analysis

Figure 2: Swot Analysis

Strengths:

- **Plug N Play Integration:** SSLCOMMERZ provides merchants with a streamlined integration process, which makes it simple for them to adopt their payment gateway.
- **Data Security:** The firm places a strong emphasis on data security, taking measures to ensure that customer information is kept confidential.
- **Customized Payment Solutions:** SSLCOMMERZ offers payment solutions that are customized to fit the specific requirements of a variety of enterprises.
- **Brand Image:** The Company has developed a strong brand image in the Bangladeshi market, which is a significant accomplishment.

Weaknesses:

- **No Global Payment Channel:** The fact that SSLCOMMERZ mostly operates within Bangladesh and does not possess a global payment channel like PayPal is one of its weaknesses. As a result, the company's accessibility to customers located outside of Bangladesh is limited.
- **Operational Challenges:** In the event that the company experiences operational difficulties, such as technical failures or concerns over customer service, the organization may face operational challenges.
- **Lack of Industry Experts:** It could be essential for SSLCOMMERZ to bring on more industry experts in order to stay competitive and adapt to new trends. This is a result of a lack of industry specialists.

Opportunities:

- **Emerging Need of Digital Payments:** There is a great chance for SSLCOMMERZ to increase its market share as digital payment methods grow more popular in Bangladesh.
- **Vision of Cashless Community:** The government's vision for a cashless society coincides with SSLCOMMERZ's business objectives and fosters a conducive climate for expansion.

- **Customized Solutions:** Due to the utilization of its skills, SSLCOMMERZ is able to provide distinctive payment solutions that are customized to meet the particular needs of a broad range of customers and vendors.

Threats:

- **Channels being Potential Competitors:** Traditional payment methods, such as banks and mobile wallets, may emerge as competitors, threatening SSLCOMMERZ's market position.
- **Emerging Payment Solutions:** The rising penetration of global payment solutions may restrict SSLCOMMERZ's growth potential in the worldwide market.
- **Global Payment Solutions' Penetration:** SSLCOMMERZ has a chance to benefit from Bangladesh's increasing demand for digital payment methods since it is strategically positioned to do so. To maintain its competitive advantage and succeed in the long run, the company needs to fix its shortcomings. Increasing its global footprint and improving its operational effectiveness are two of these drawbacks. The company should fix these issues in order to accomplish these objectives.
- **Price Competition:** Fierce price competition from alternative payment gateway providers might diminish corporate margins.

SSLCOMMERZ is in an excellent position to capitalize on the market for digital payments in Bangladesh, which is experiencing tremendous expansion. This market is a market that is ex periencing significant growth.

In spite of this, the company must address its weaknesses in order to maintain its competitive edge and achieve success over the long term. These shortcomings include expanding its globa l reach and improving the efficiency of its operations. Therefore, the company must address t hese shortcomings.

2.8 Market Share:

According to the pie chart:

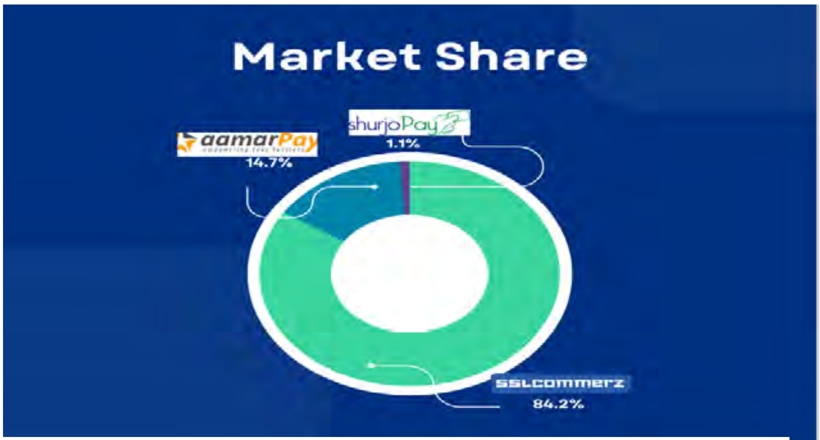


Figure 3: Market Share

- **SSLCOMMERZ** holds the dominant market share with 84.2%.
- **AAMAR Pay** has a market share of 14.7%.
- **SHURJO Pay** has the smallest market share at 1.1%.

SSLCOMMERZ looks to be the most popular and often used payment gateway in Bangladesh, according to the data shown below. AAMAR Pay and SHURJO Pay have a smaller but significant presence in the market, but SSLCOMMERZ appears to be the most popular payment gateway.

2.9 Certifications of SSLCOMMERZ VS. Other Competitors:

An explanation of each of the above certificates is as follows:


CERTIFICATION

CERTIFICATION	SSLCOMMERZ	SHURJOPAY	AAMARPAY	PORT WALLET	WALLET MIX
PSO LICENSED	Yes	Yes	Yes	Yes	Yes
PCI DSS SERVICE LEVEL 1	Yes	Yes	Yes	Yes	Yes
ISO 27001:2013	Yes	N/A	N/A	N/A	N/A
CMMI	Yes	N/A	N/A	N/A	N/A

Figure 4: Certification

PSO Licensed: This certification demonstrates that the Payment Systems Operator (PSO) in Bangladesh has granted permission for the payment gateway to operate. This accreditation is held by each and every one of the enumerated payment gateways. **PCI DSS Service Level 1:** This certification guarantees that the payment gateway complies with the most stringent security criteria established by the Payment Card Industry (PCI) Data Security Standard. All enumerated payment gateways possess this accreditation.

ISO 27001:2013 By obtaining this accreditation, the payment gateway has proved that it has built a comprehensive information security management system (ISMS) that is in conformity with the requirements that have been established by international organizations. This accreditation is solely held by SSLCOMMERZ, which is the only company in existence.

CMMI ML3: This accreditation indicates that the payment gateway has reached maturity level 3 in the Capability Maturity Model Integration (CMMI), which is indicative of an organization that is well-structured and focused on processes. SSLCOMMERZ is the only company that possesses this accreditation.

In accordance with the specified certificates, SSLCOMMERZ is in possession of the most complete array of certifications, which indicates an increased level of security and process sophistication. SSLCOMMERZ's supplemental ISO 27001 and CMMI certifications suggest a heightened attention to security and process superiority. This is despite the fact that all of the mentioned payment gateways possess the fundamental PSOV and PCI DSS certifications.

2.10 Harvard Model

The Harvard model of human resource management (HRM) offers a strategic framework that may be utilized to gain an understanding of the interplay that exists between various HR components and the broader impacts that these parts have on the performance of a company. When implementing this model to the payment gateway services offered by

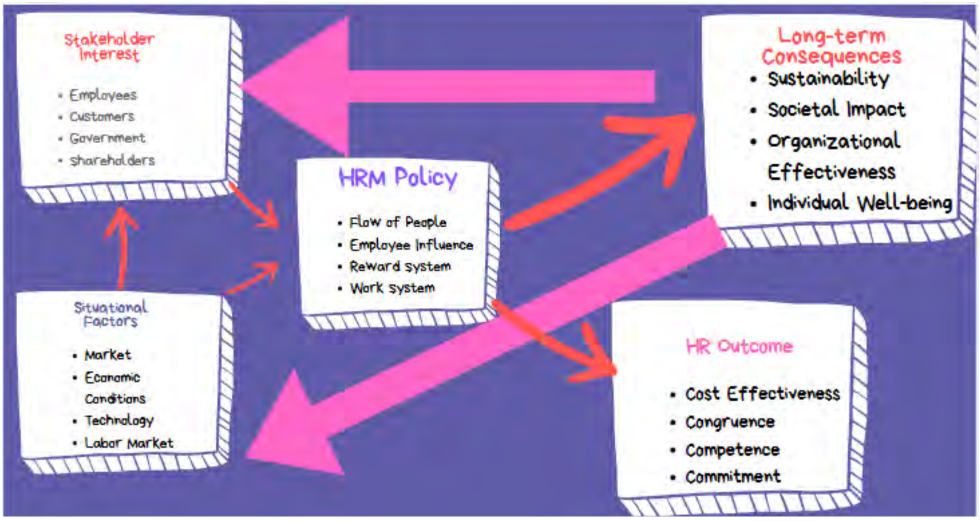


Figure 5: Harvard Model of HRM

SSLCOMMERZ, the following components could be modified to match the particular circumstances of the firm.

Stakeholder Interests

- **Employees**: Skilled professionals in payment technology, customer service, security protocols, and innovation.
- **Customers**: E-commerce businesses, metro rail users, retailers, and other organizations requiring secure and efficient payment processing.
- **Government**: Regulatory bodies focused on compliance with data protection, fraud prevention, and financial transaction laws.
- **Shareholders**: Investors and stakeholders interested in profitability, innovation, and compliance with regulations.

Situational Factors

- **Technology**: Advances in digital payment systems and the need to integrate with various platforms, such as mobile apps and Metro Rail ticketing systems.
- **Legal and Regulatory Framework**: Compliance with Bangladesh Bank regulations, PCI DSS standards, and other financial transaction laws.
- **Market**: The growth of e-commerce, public transportation needs (Metro Rail), and increasing demands for secure and fast online payments in Bangladesh.
- **Economic Conditions**: Impact of economic growth on the increasing use of digital payment solutions.
- **Labor Market**: The availability of skilled professionals in cybersecurity, payment processing, and customer service.

HRM Policy Choices

- **Work System**: Encouraging cross-functional teams to innovate and maintain seamless payment solutions for the Metro Rail Project and other e-commerce platforms.

- **Reward System**: Performance-linked incentives for employees contributing to Metro Rail's payment gateway success, along with recognition for cybersecurity achievements.
- **Employee Influence**: The empowerment of employees through participation in project-based teams for the purpose of enhancing user experience, enhancing security, and fostering creativity is an example of employee influence.
- **Flow of People**: Recruitment tactics to attract and retain talent that specializes in customer service, security, and fintech; internal promotions based on success in high-priority projects will be implemented.

HR Outcomes

- **Commitment**: Increased employee engagement through recognition programs and ongoing training for cutting-edge payment systems.
- **Competence**: Enhanced through specialized training programs focusing on payment security, user experience, and regulatory compliance.
- **Congruence**: Ensuring alignment between company goals (e.g., Metro Rail project success) and individual performance objectives through SMART goals.
- **Cost Effectiveness**: Efficiency in managing HR-related costs by retaining skilled professionals and minimizing turnover through an attractive reward system.

Long-term Consequences

- **Individual Well-being**: Opportunities for professional development contribute to increased job satisfaction and enhanced career advancement for employees.
- **Organizational Effectiveness**: Enhanced operational efficiency in the provision of safe and dependable payment solutions that are able to fulfill the requirements of a great number of customers, such as Metro Rail.
- **Societal Impact**: Through the guarantee of the security and efficiency of online transactions, SSLCOMMERZ provides a contribution to the improvement of the payment ecosystem in Bangladesh as well as to the growth of financial inclusion across the entire nation.
- **Sustainability**: By aligning with government regulations and continuously innovating, SSLCOMMERZ ensures long-term sustainability in the competitive fintech industry.

Chapter 3 Project Part

3.1 Introduction:

The successful completion of large-scale infrastructure projects depends heavily on human resources (HR), especially in environments with fast technological advancements, strict regulations, and high stakeholder expectations. This study focusses on SSLCOMMERZ's contribution to the Metro Rail Project. The organization is in charge of offering payment gateway solutions, and this study emphasizes how vital HR tactics are to achieving the project's goals. Human resources (HR) not only handle routine tasks in these intricate projects, but it also turns into a strategic partner that guarantees alignment between employee competencies and project goals, which eventually spurs innovation and operational success. The Metro Rail Project is a massive, high-impact public infrastructure project that requires the use of secure and smooth payment processing solutions. In order to manage the workforce and make sure that workers can handle the unique demands of this industry, the HR department's role is becoming more and more crucial as SSLCOMMERZ works to provide efficient payment gateway solutions for this project. Payment systems for public transit are usually governed by strict regulations, with security, user experience, and operational continuity being the main issues. Therefore, SSLCOMMERZ's employees' abilities are crucial to the Metro Rail Project's success. Therefore, it is imperative that HR strategies be specifically tailored to the project's needs. The Human Resources section of SSLCOMMERZ must focus on offering specialized training programs that address the particular requirements that payment gateway solutions must meet in the context of public transit in order to support the project. This includes cybersecurity standards training to safeguard vital financial data and user experience design training to guarantee seamless interactions with commuters. To make sure that employees are always knowledgeable about the newest compliance standards and technological advancements, the human resources department must also foster a culture of continuous learning. The regulatory environment is constantly changing; thus this is required. For more details, SSLCOMMERZ's performance management systems must be carefully constructed in accordance with the project's goals. SMART goals—specific, measurable, achievable, relevant, and time-bound—should also be a part of these systems. This will guarantee that each person's performance aligns with the project's milestones. The integration of regular feedback loops and recognition programs into the workplace will be crucial in sustaining employee motivation and dedication to delivering optimal solutions. Additionally, human resources must ensure that staff members receive thorough and ongoing training on the latest laws, including those governing data security and payment processing. HR must make sure that workers obtain training in compliance and risk management, two other crucial areas. By incorporating these components into the business organization's workforce, the human resources department may ensure not only regulatory compliance but also the reduction of risks associated with payment processing errors, data breaches, and other operational problems. Interdepartmental cooperation is another crucial area of focus. To ensure seamless coordination and problem-solving, SSLCOMMERZ's Human Resources department will be in charge of fostering strong interdepartmental communication across teams in the domains of finance, information technology, project management, and customer support. It is feasible to combine the expertise of several departments through the use of cooperative forums and workshops in order to develop and resolve the unique problems that the Metro Rail Project poses. The main goal of this research is to highlight the critical role that human resources play in the successful completion of large-scale infrastructure projects like the construction of the Metro Rail Project by customising training, compliance, performance, and cooperation techniques. An excellent illustration of how well-structured HR procedures may contribute to the long-term viability and efficiency of efforts of this kind are the human resource strategies put in place by SSLCOMMERZ, which were modified to meet the unique needs of the payment gateway industry. In order to increase organizational performance and guarantee project success, human resources departments can match employee abilities with project requirements in a number of methods, as the study provides. In the payment gateway industry, where user satisfaction, security, and regulatory compliance are critical, the Metro Rail Project offers an intriguing case study that illustrates how successful HR interventions can support smooth, safe, and effective operations in public infrastructure projects. As part of this research project, these human resource practices will be thoroughly examined in order to give a comprehensive understanding of the influence that these tactics have on the sustainability and effectiveness of large-scale infrastructure initiatives. Important human resource (HR) elements are highlighted in the report, including customised training plans, SMART goal-based performance management systems, compliance training, and interdepartmental cooperation. A qualitative study and a careful evaluation of the pertinent literature are used to achieve this. In light of the results, it can be said that excellent HR policies not only support operational integrity and employee engagement, but they also significantly contribute to the resolution of project-specific issues. In order to increase the likelihood that major infrastructure projects will be successful and sustainable, this study aims to shed light on how human resource strategies might be used to align workforce capabilities with project objectives.

3.2 Research Overview

This research specifically aims to examine the significant contribution that Human Resources (HR) strategies make to the successful completion of major infrastructure projects, with a focus on the Metro Rail Project under consideration. The paper highlights the significance of creating customized human resource strategies that can meet the goals of unique projects while also fostering a skilled and motivated workforce, given the speed at which technology is developing and the strict regulations that are currently in place. Important human resource (HR) elements are highlighted in the report, including customized training plans, SMART goal-based performance management systems, compliance training, and interdepartmental cooperation. A qualitative study and a careful evaluation of the pertinent literature are used to achieve this. In light of the results, it can be said that excellent HR policies not only support operational integrity and employee engagement, but they also significantly contribute to the resolution of project-specific issues. In order to increase the likelihood that major infrastructure projects will be successful and sustainable, this study aims to shed light on how human resource strategies might be used to align workforce capabilities with project objectives.

3.3 Purpose of the Study

The fundamental goal of this research is to investigate the vital function of Human Resources (HR) strategies in assuring the success of big infrastructure projects, with specific emphasis on the Metro Rail Project. The purpose of this study is to investigate the ways in which individualized human resource management initiatives, such as individualized training programs, performance management systems, and collaboration between departments, make it possible to meet the requirements of specialized projects while also maintaining a workforce that is both skilled and motivated in the face of rapid technological advancement and stringent regulatory requirements. Specifically, the study will specifically focus on how these initiatives make it possible to meet the requirements of specialized projects.

3.4 Research Question

- How **do customized training programs influence the effectiveness of Human Resources in large infrastructure projects like the Metro Rail Project?**

- What **role do performance management systems, particularly those incorporating SMART goals, play in aligning employee contributions with project objectives in the context of infrastructure projects?**

- How **does interdepartmental collaboration among various teams enhance problem-solving and innovation in the implementation of payment systems for infrastructure projects?**

- In **what ways do compliance training and risk management strategies impact the operational integrity of payment processing systems within the Metro Rail Project?**

- How **does the culture of continuous feedback within HR practices contribute to employee motivation and project success in complex infrastructure environments?**

3.5 Literature Review

In large-scale infrastructure projects, such as the Metro Rail Project, the necessity of Human Resources (HR) has become increasingly crucial. This is because businesses are required to fulfill specialized project needs while simultaneously maintaining a staff that is both capable and inspired. This is especially true in industries like payment gateways, which are defined by rapid technological improvements and stringent regulatory frameworks. The importance of human resources in guaranteeing the success of projects is especially crucial in these industries. (2015) Reilly and Williams (2016)

It is common practice for successful human resource management methods to begin with individualized training programs that provide employees with the skills necessary to do certain duties. (2017) According to Noe It is absolutely necessary to hold training sessions on user experience and security protocols for payment systems in public transportation. According to the National Institute of Standards and Technology (2018), specialist training, particularly in the field of cybersecurity, is essential for protecting payment systems and preserving data privacy. Continuous learning programs, in which employees regularly improve their skills in accordance with continually increasing legislation and technologies, are recognized by organizations as a method for ensuring the continued success of projects. When it comes to performance management, the formulation of SMART goals is widely recognized as an efficient way for aligning individual contributions with the objectives of the business. 2006 Senge's study in projects such as the Metro Rail, having objectives that are defined, measurable, and time-bound ensures that the performance of employees directly contributes to the results of the project. Furthermore, studies have shown that methods that provide constant feedback contribute to increased employee engagement and motivation, which in turn helps workers maintain their attention. A high-performance culture might be considered to have been cultivated through the implementation of recognition programs that reward the achievements of staff members. In workplaces that demand compliance with ever-changing rules, such as those that are associated with payment processing, compliance training is absolutely necessary. It is absolutely necessary to perform regular updates on regulatory frameworks, such as the Payment Card Industry Data Security Standard (PCI DSS), in order to maintain the integrity of operating procedures. Giving employees ethical training ensures that they will continue to uphold transparency and confidence in the company, which is crucial when it comes to handling some sensitive financial data. Furthermore, risk assessment techniques are thought to be crucial for the proactive mitigation of project-related difficulties, and the role of human resources (HR) in improving risk management competencies within teams is becoming more widely recognized.

Collaboration between departments is essential to promoting creative thinking and offering solutions to complex project challenges. Cross-functional workshops allow employees to more readily share their knowledge and expertise with one another while also encouraging the creation of integrated solutions. This is highly helpful because it streamlines the process when dealing with project-specific difficulties, such processing payments in public infrastructure.

When departments collaborate to create answers to challenges, problem-solving skills are enhanced and organizational resources are aligned with shared goals.

When considered collectively, the research's conclusions emphasize the significance of human resource planning tailored to significant infrastructure projects. These plans should emphasize compliance, performance management, specialized training, and teamwork as essential elements to guarantee the project's successful completion.

No.	Factors	Author(s)	Findings
1.	Strategic HRM and Organizational Success	Boxall, P., & Purcell, J. (2016)	Effective human resource management (HRM) is crucial for organizational success. HR strategies should align with overall business objectives to create a competitive advantage. Key factors influencing HR effectiveness include organizational culture, leadership practices, employee engagement, and the ability to adapt to changing business environments.
2	E-payment in Integrated Public Transport Modes	Abdinagoro, S. B., & Hamsal, M. (2016)	This research explores the implementation of e-payment systems in public transportation in Greater Jakarta. The authors propose that to maintain integrated public transport, e-payment systems must also be integrated across different modes of transportation. Key factors for successful integration include government authority over all modes, high coordination between transport providers, and common technology standards.
3	E-Sewa Online Payment Gateway	Belbase, P. (2021)	This case study analyzes the E-Sewa online payment gateway in Nepal. The research explores factors contributing to its success, including user-friendly interface, wide acceptance, and strategic partnerships with banks and merchants. The study also identifies challenges faced by E-Sewa, such as limited internet penetration and competition from other payment gateways.

4	NFC and QR Code Identification in Electronic Ticket Systems	Finžgar, L., Trebar, M., & University of Ljubljana, Faculty of Computer and Information Science. (2012)	This research investigates the use of Near-Field Communication (NFC) and Quick Response (QR) codes in electronic ticketing systems for public transport. The authors compare the advantages and disadvantages of both technologies and conclude that NFC offers better security, reliability, and user experience due to its contactless nature. However, QR codes can be more cost-effective and widely accessible.
5	Touch-and-Go Mobile Payment System Solution	Rulić, P., Kotnik, B., Klampfer, S., & Chowdhury, A. (2017)	The authors propose a holistic transaction processing model to address the challenges mentioned above. This model includes algorithms for mobile account synchronization, transaction verification, enhanced system control, and security supervision. The model's effectiveness was demonstrated through its successful implementation in a real-world mobile payment system.
6	Importance of HR in Fintech	Long, C. (n.d.)	This source emphasizes the crucial role of HR in the fintech industry. While the retrieval date is not specified, the finding highlights the need for strong HR practices in fintech companies to succeed.
7	Payment Trends in Public Transport	Cartier, V. (2024)	This article explores the evolution of payment trends in public transportation systems. The author highlights the shift from cash to contactless payments, including cards and mobile wallets. This trend is fueled by consumer demand for a frictionless experience and the growing importance of digital payments.
8	Convergence of Transit and Retail Payments	Smart Card Alliance (2003)	This report explores the potential for convergence between transit fare payment systems and retail payment methods. The authors argue that using a single smart card for both purposes could offer significant benefits, such as increased convenience for users, reduced operational costs for transit agencies, and potential revenue opportunities through integration with loyalty programs.

9	Role of UPI in Transport Sector Modernization	National Payments Corporation of India (NPCI) (2023)	This NPCI research report explores the potential of the Unified Payments Interface (UPI) to modernize the transport sector in India. UPI, a real-time digital payment system, could revolutionize fare collection in public transportation by offering benefits such as: * Increased convenience and efficiency for commuters * Reduced reliance on cash and associated costs for transport authorities * Improved transparency and data collection for better planning The report likely delves deeper into the specific functionalities of UPI and how it integrates with existing transport infrastructure.
10	Strategic information system for decision making in railway supply chain management.	Jayakrishnan, M., Mohamad, A. K., & Yusof, M. M. (2020)	The study by Jayakrishnan, Mohamad, and Yusof (2020) explores how Strategic Information Systems (SIS) enhance decision-making in railway supply chain management. The authors highlight the role of real-time data integration, automation, and predictive analytics in optimizing railway operations. The findings suggest that SIS improves efficiency by reducing delays, streamlining logistics, and enhancing cost management. However, challenges such as cybersecurity risks, high implementation costs, and resistance to digital adoption remain. The study recommends investing in cloud-based solutions, employee training, and fintech collaborations to improve operational performance and payment integration in railway systems.
11	Challenges and facilitating factors in interorganizational knowledge acquisition: evidence from the Orange Line Metro Train System and Sustainable Bus Rapid Transit Corridor.	Iftikhar, R., & Javed, S. (2024)	Iftikhar and Javed (2024) examined the challenges and facilitating factors in interorganizational knowledge acquisition within the Orange Line Metro Train System and Sustainable Bus Rapid Transit (BRT) Corridor. They identified several obstacles, including time pressure, which limited thorough knowledge sharing, and knowledge hiding, where organizations were reluctant to share critical information. Additionally, the difficulty in identifying credible information sources and bureaucratic red tape further hindered the knowledge acquisition process.

12	Transit and contactless open payments: an emerging approach for fare collection	Alliance, S. C. (2011)	The Smart Card Alliance (2011) white paper highlights the shift from proprietary fare collection to contactless open payment systems in transit, allowing riders to use bank cards and mobile wallets. This transition improves customer convenience, reduces costs, and enhances efficiency but faces challenges like system integration and security concerns. Recent developments, such as VIA Metropolitan Transit's adoption of contactless payments, reflect these trends. The emergence of open security standards like CIPURSE further supports secure and interoperable fare collection systems.
13	Predicting the Number of Passengers of MRT Jakarta Based on the Use of the QR-Code Payment Method during the Covid-19 Pandemic Using Long Short-Term Memory.	Jayadi, R., Indriasari, T. F., Chrisna, C., Fanuel, P. N., & Afita, R. (2022)	The study by Jayadi et al. (2022) aimed to predict the number of MRT Jakarta passengers during the COVID-19 pandemic by analyzing the use of QR-code payment methods. Using a Long Short-Term Memory (LSTM) model, the researchers developed a predictive model based on historical passenger data and QR-code payment trends. The findings suggest that the LSTM model effectively predicted passenger numbers, highlighting the significant role of QR-code payments in providing data for forecasting, especially during the pandemic period when ridership was impacted by restrictions. The model showed promise in improving operational planning and management for public transportation systems during crises like the COVID-19 pandemic.
14	Design of a Biometric-based E-Ticketing and Access Control Framework for Public Transportation	Achimba, T., & Iwasokun, G. (2023)	The study by Achimba and Iwasokun (2023) focused on the design of a biometric-based e-ticketing and access control framework for public transportation systems. The researchers proposed a system that integrates biometric verification

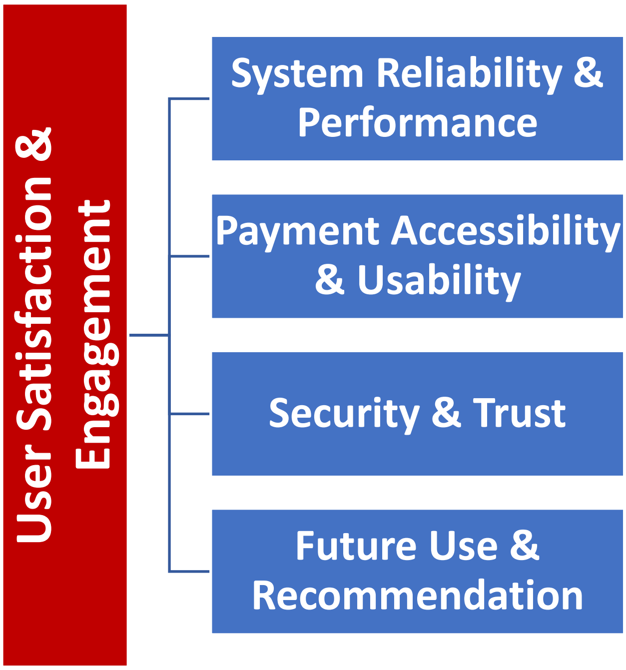
			(such as fingerprint or facial recognition) with e-ticketing to enhance security, reduce fraud, and streamline access control. The findings highlighted that the proposed framework could significantly improve the efficiency and reliability of public transportation systems by ensuring that only authorized individuals access transportation services, while also enabling seamless, contactless transactions. Additionally, the system was designed to increase passenger convenience, reduce wait times, and improve overall operational effectiveness in public transport networks.
15	Enhancing Operational Efficiency in Metro Rail Systems through Integrated HR and Financial Systems	Kumar, R., & Singh, A. (2020)	The study by Kumar and Singh (2020) focuses on the impact of integrating Human Resources (HR) and financial systems in metro rail organizations. It finds that such integration enhances operational efficiency by allowing for better resource management, cost control, and performance tracking. By merging these systems, the metro rail companies can eliminate redundant processes, reduce operational costs, and streamline daily operations. Additionally, real-time data access improves collaboration between HR and financial departments, leading to better decision-making and higher employee satisfaction. Overall, the integration results in improved service delivery, boosting both customer satisfaction and the overall performance of the metro systems.
16	Role of Technology in Modernizing HR and Payment Processes in Public Transport Sector.	Verma, P., & Gupta, R. (2022)	The study by Verma and Gupta (2022) examines the role of technology in modernizing Human Resources (HR) and payment processes in the public transport sector. It highlights how technological advancements, such as digital HR systems and automated payment platforms, are transforming operations. The research shows that the adoption of such technologies enhances efficiency, reduces operational costs, and improves the

			accuracy of transactions and payroll management. Furthermore, the study emphasizes that technology helps in providing better services to passengers, streamlines HR tasks, and enables quicker and more transparent payment processes. Overall, the integration of technology is seen as a critical factor in improving service quality and operational effectiveness in the public transport sector.
17	Implementing Biometric-Based Payment Systems in Metro Rail Networks: HR and Financial Perspectives.	Chandra, S., & Mehta, K. (2023)	The study by Chandra and Mehta (2023) explores the implementation of biometric-based payment systems in metro rail networks from both HR and financial perspectives. The research highlights how the integration of biometric systems, such as fingerprint or facial recognition for payments, can streamline fare collection processes and enhance operational efficiency. From an HR perspective, biometric systems help in accurate employee attendance tracking and improve security, reducing the need for manual intervention. Financially, these systems are found to reduce fraud, increase revenue accuracy, and lower operational costs by automating payment processes. The study concludes that biometric payment systems can significantly improve both customer experience and internal operations, leading to higher efficiency and security in metro rail networks.
18	Integration of Human Resource Management and Financial Management Systems in Public Sector Enterprises	Sahoo, S., & Mishra, S. (2019)	The study by Sahoo and Mishra (2019) discusses the integration of Human Resource Management (HRM) and Financial Management Systems (FMS) in public sector enterprises. It finds that integrating these systems leads to improved coordination between HR and financial departments, resulting in better resource allocation and financial planning. The research highlights that the integration helps in minimizing errors, improving data accuracy, and enhancing decision-making by providing a unified view

			of both human resources and financial data. The study also points out that this integration reduces operational costs, increases transparency, and leads to more efficient management of public sector enterprises. Overall, it suggests that such integration can enhance the overall performance and effectiveness of public organizations.
19	Digital Payment Solutions in Public Transportation: A Case Study of Metro Rail Systems	Patel, D., & Shah, N. (2021)	The study by Patel and Shah (2021) examines the implementation of digital payment solutions in metro rail systems. The research highlights how the adoption of digital payment methods, such as contactless cards, mobile apps, and online payment platforms, has transformed fare collection processes in metro systems. The study finds that digital payments enhance convenience for passengers, reduce cash handling, and improve operational efficiency. Furthermore, the transition to digital payment solutions has been shown to reduce fare evasion, streamline revenue collection, and provide better data for financial management. The case study suggests that digital payment systems are crucial for modernizing metro rail networks, improving customer satisfaction, and increasing overall system effectiveness.
20	Transit and contactless open payments: an emerging approach for fare collection	Alliance, S. C. (2011)	The white paper by the Smart Card Alliance (2011) discusses the adoption of contactless open payments in transit systems as an emerging approach for fare collection. It explains how contactless payment methods, such as

			smart cards and mobile devices, allow passengers to pay fares quickly and securely without needing dedicated transit-specific cards. The paper highlights the benefits of these systems, including improved passenger convenience, reduced transaction times, and lower operational costs for transit agencies. By integrating open payment solutions, which accept widely used credit and debit cards, transit systems can streamline fare collection processes and improve customer experience. The paper emphasizes that this technology also enables greater flexibility and scalability for future transportation infrastructure.

3.6 Framework



3.7 Hypothesis Development

H1: Payment Accessibility & Usability Enhances User Satisfaction in Metro Rail Payment Systems

Higher customer satisfaction is anticipated as a result of effective payment accessibility and usability elements, such as an intuitive user interface, simple payment methods (such as digital wallets, cards, or tokens), and accessible payment options. Making the payment procedure easy and quick will probably enhance user satisfaction and participation with the Metro Rail payment system. Users' pleasure and general opinion of the payment system will rise when they can easily complete transactions without encountering any difficulties, which will boost adoption and generate favorable comments.

H2: System Reliability & Performance Improves User Satisfaction in Metro Rail Payment Systems

To guarantee consumer happiness in Metro Rail, a dependable and effective payment mechanism is essential. The user experience will be greatly improved by consistent payment processing, no downtime, and quick error correction. Ensuring that the Metro Rail payment system runs efficiently and without frequent technical issues will boost user happiness and trust, which will promote retention and encourage continuous use.

H3: Security & Trust Enhances User Satisfaction in Metro Rail Payment Systems

Users are more satisfied with the payment system overall when they have faith that their financial and personal data is safe. Strong security features including encryption, two-factor authentication, and fraud prevention procedures will be used in the Metro Rail payment system to increase consumer trust. Their pleasure with the system will increase as a result of this trust, increasing the likelihood that they will use it again and refer others to it.

H4: User Satisfaction & Engagement Leads to Future Use and Recommendations of Metro Rail Payment Systems

One of the most important indicators of future payment system use and recommendation is user satisfaction. Customers who are pleased with Metro Rail's payment system's dependability, security, and accessibility are more likely to use it frequently and refer others to it. Because their favorable experiences lead to increased retention rates and positive word-of-mouth, happy users are crucial to the Metro Rail payment system's ongoing success.

H5: Future Use & Recommendation is Influenced by Payment Accessibility, System Reliability, and Security

Factors including payment accessibility, system dependability, and security have a big impact on the Metro Rail payment system's likelihood of future use and recommendations. Users are more inclined to promote the system to others and use it again for future transactions when they have a smooth, safe, and dependable payment experience. All of these elements work together to promote long-term engagement and user loyalty with the payment platform.

Chapter 4 Methodology

4.1 Research Types

This study examines the relationship between HR procedures and the effectiveness of payment processing in the Metro Rail project using a quantitative research approach and a descriptive and explanatory research design. This study is suited for quantitative research since it makes use of structured questionnaires to gather numerical data, which facilitates statistical analysis and hypothesis testing.

The **descriptive aspect** of the research focuses on outlining the current state of HR training, performance management, compliance adherence, collaboration, and employee engagement within SSLCOMMERZ. It provides insights into how these factors are perceived and implemented within the organization.

The **explanatory aspect** seeks to establish causal relationships between independent variables (HR training, performance management, compliance, collaboration) and the dependent variable (payment processing efficiency). By employing statistical tools such as regression analysis, this study will assess whether and to what extent these factors influence the effectiveness of Metro Rail's payment processing system.

4.2 Population, Sample, and Unit of Analysis

The **population** for this study comprises employees of **SSLCOMMERZ** who are directly or indirectly involved in the Metro Rail payment processing project. This includes individuals from HR, IT, Finance, and Operations departments, as their roles contribute to payment integration, regulatory compliance, training initiatives, and overall operational efficiency. Since the study focuses on HRM practices and their impact on payment processing, employees engaged in relevant functions will be considered within the research scope.

A **stratified random sampling** method will be employed to ensure representation from various departments and hierarchical levels. Priority will be given to staff members with past experience in payment processing, HR training initiatives, compliance protocols, and performance reviews. To ensure there is enough data for statistical analysis, the sample size will be decided by taking into account the total number of employees in these areas. By recording a variety of viewpoints, this method improves the findings' generalisability and dependability.

The individual SSLCOMMERZ personnel serve as the research's unit of analysis. The opinions of each respondent will be used to assess the effects of performance management, interdepartmental cooperation, HR training, and compliance adherence on the effectiveness of payment processing. The study intends to find trends and connections that lead to a more effective and safe payment gateway system for the Metro Rail project by examining employee-level data.

4.3 Research Instrument

A structured questionnaire will be the main research tool used in this study to gather quantitative data from SSLCOMMERZ personnel. The purpose of the survey is to gauge how well Metro Rail's payment processing system works as a result of HR training, performance management, compliance, and cooperation. To guarantee unbiased answers, it includes multiple-choice, closed-ended questions with closed-ended possibilities, Likert scale ratings, and demographic questions that are categorical.

Five main areas make up the questionnaire: HR Training & Development, Performance Management, Compliance & Risk Management, Demographics, and Collaboration &

Employee Engagement. The demographic section collects data regarding the department, employment role, and experience level of the respondents. Likert scale questions (1 being ineffective, 5 being very effective) are used in the other sections to gauge how well employees believe training, compliance, performance reviews, and teamwork are working.

Before being distributed widely, the questionnaire will undergo a pilot study with a limited sample of employees to assess validity and reliability. This will increase response accuracy and help clarify ambiguous queries. To ensure accessibility for all target respondents, the final questionnaire will be given by printed copies or online surveys. To test the research hypotheses, the gathered data will subsequently undergo statistical analysis.

4.4 Data Collection Procedures

A structured survey was given to a sample of Metro Rail riders in order to gather data for this study. The purpose of the survey was to gather user opinions on a number of topics related to the Metro Rail payment system, such as payment accessibility, system dependability, security, user happiness, and plans for future use. Based on a thorough analysis of pertinent literature, the questionnaire was created and customized for the unique circumstances of Metro Rail payment services with SSLCOMMERZ integration. The poll had both closed-ended questions with ratings on a Likert scale and categorized enquiries to collect demographic information.

Over the course of two weeks, data was gathered both in-person and online. ways of distribution. To assure a broad audience, online surveys were sent via email and social media, with a focus on commuters who regularly utilise Metro Rail services. In order to gather results from a wide variety of users—including those who were less likely to take part in online surveys—paper-based surveys were also distributed at strategic Metro Rail stations. Ethical issues were closely adhered to prior to data collection. Respondents were given information about the study's objectives, guaranteed anonymity and confidentiality, and reminded that participation was entirely voluntary. To encourage truthful and precise responses, clear instructions were given.

Prior to data entry, every completed questionnaire was examined for accuracy and consistency. Using the proper software tools, the gathered data was then methodically coded and ready for further statistical analysis.

4.5 Data Preparation

After the data collection phase, the raw data underwent a systematic preparation process to ensure its suitability for analysis. The first step involved verifying the completeness of the collected questionnaires, where responses with significant missing data were excluded to maintain data integrity.

Next, the responses were checked for accuracy and consistency. Any inconsistencies or outliers were identified and addressed through data cleaning techniques, such as cross-verification with original questionnaires and, where necessary, contacting respondents for clarification.

The cleaned data was then coded numerically to facilitate quantitative analysis. Categorical variables, such as occupation and payment method, were assigned numerical codes, while Likert scale responses were retained in their numerical format to represent varying degrees of agreement or satisfaction.

Following coding, the data was entered into statistical software for further processing. The dataset was reviewed for entry errors, duplicates, and anomalies to ensure high-quality data. Descriptive statistics, such as frequencies and percentages, were generated to summarize the demographic characteristics of the respondents.

Finally, the data was prepared for advanced analyses including reliability testing, correlation analysis, and regression modeling. This preparation ensured that the dataset was structured appropriately to test the study hypotheses and draw valid conclusions.

4.6 Data Analysis

Statistical software was used to thoroughly analyses the gathered data in order to extract insightful information regarding consumer opinions regarding the SSLCOMMERZ payment integration with the Metro Rail system. The analysis sought to understand user behavior and satisfaction, test the research hypotheses, and look at the correlations between variables.

4.6.1 Descriptive Analysis

To compile the respondents' demographic details and responses as a whole, descriptive statistics were used. Variables like occupation, industry, payment methods, and views of payment accessibility, system reliability, security, and user satisfaction were described using metrics including frequency distributions, means, standard deviations, and percentages.

4.6.2 Reliability Analysis

Cronbach's Alpha was computed for each construct in order to evaluate the survey instrument's consistency and dependability. The scales used to measure latent variables were deemed internally consistent if their Cronbach's Alpha value was greater than 0.7.

4.6.3 Correlation Analysis

To investigate the strength and direction of linear correlations between important characteristics such payment accessibility, system dependability, security, user satisfaction, and future usage intentions, Pearson correlation coefficients were calculated. Multicollinearity problems and important relationships were found with the aid of this investigation.

4.6.4 Regression Analysis

The effect of the independent factors (payment accessibility, system dependability, security, a nd future use) on the dependent variable (user satisfaction and engagement) was assessed usi ng multiple regression analysis.
The regression model determined the key determinants of user happiness by evaluating the pr ediction ability of these variables.

4.6.5 Hypothesis Testing

The study hypotheses were tested based on the correlation and regression analysis results. With a 0.05 acceptance level, p-values were used to evaluate statistical significance. Data-supported hypotheses were kept, while those that didn't fit the significance threshold were either dismissed or given another look.

4.7 Summary

This chapter described the steps and techniques used to prepare and analyse the data gathered in order to evaluate consumer opinions regarding SSLCOMMERZ's integration with the Metro Rail payment system. To guarantee accuracy and dependability, data preparation required thorough cleaning, coding, and verification. The demographic profile and general response patterns of the users who were surveyed were revealed using descriptive statistics. While correlation and regression analyses looked at the links between important factors like payment accessibility, system dependability, security, and user satisfaction, reliability analysis verified the survey instrument's internal consistency. These studies made it possible to test hypotheses and find important determinants of user engagement and pleasure.

All of these methodological procedures combined to guarantee that the results are reliable, valid, and offer a thorough grasp of the variables affecting consumer acceptability and usage of the SSLCOMMERZ payment system in the context of Metro Rail.

Chapter 5 Findings & Analysis

5.1 Introduction

The results and analysis of the information gathered from survey participants about the deployment of the SSLCOMMERZ payment system for Metro Rail passengers are presented in this chapter. This chapter's main goal is to methodically analyses the data in order to comprehend user attitudes, actions, and satisfaction levels regarding different aspects of the

payment system. The main research questions and hypotheses developed in previous chapters are addressed by the structure of the analysis.
A demographic profile of the respondents opens the chapter, giving background information on the sample's attributes, including industry, occupation, and current payment methods. The opinions of respondents regarding payment accessibility, system dependability, security, user happiness, and future use plans are then summed together using descriptive statistics.

Further, reliability and validity tests are conducted to assess the consistency of the survey instrument. Correlation and regression analyses are then used to explore the relationships among variables and determine the significant predictors of user satisfaction and engagement.

The insights derived from this chapter serve as the foundation for subsequent discussions, implications, and recommendations, contributing to a better understanding of how SSLCOMMERZ can enhance Metro Rail payment solutions.

5.2 Demographic Analysis

The following analysis provides insights based on the survey data, segmented into different categories such as occupation, industry, payment methods, and the usage of SSLCOMMERZ. The sample includes **75 respondents** with varying backgrounds.

Occupation

- **Private Sector Professional (68%)**: The majority of respondents (68%) belong to the **Private Sector**, indicating that the sample predominantly consists of individuals working in the private domain. This could imply that Metro Rail users are mostly professionals who may commute daily for work.
- **Other (17%)**: A significant portion (17%) of the respondents selected "Other," indicating a variety of occupations not specifically covered by the available categories in the survey.
- **Government Employee (0%)**: Interestingly, no respondents identified as government employees. This is an unexpected result, as government employees are also significant potential users of public services such as Metro Rail.

Industry

- **Technology/IT (35%)**: The **Technology/IT** industry represents the largest group among the respondents (35%). This is consistent with the increasing reliance on technology in daily life, suggesting that users in this industry may be more familiar with digital platforms, which could influence their adoption of Metro Rail's digital payment systems.
- **Finance/Banking (17%)**: **Finance/Banking** professionals account for 17% of the sample, reflecting the growing importance of financial services in everyday transactions, including digital payments.
- **Other (18%)**: A broad 18% of respondents identified their industry as "Other," which may include a mix of varied fields and sectors not listed in the survey. This shows a diverse representation of industries in the Metro Rail user base.
- **Education (12%)**: Individuals working in **Education** make up 12% of the respondents, indicating that educators and students might form a notable part of Metro Rail commuters.
- **Business (16%)**: Respondents from the **Business** sector represent 16%, highlighting that Metro Rail serves professionals from various industries.

Demographic Data	Frequency (N=75)	Percentage (%)
Occupation		
Government Employee	0	0.00%
Private Sector Professional	68	68.00%
Other	17	17.00%
Industry		
Finance/Banking	17	17.00%
Technology/IT	35	35.00%
Education	12	12.00%
Healthcare	2	2.00%
Business	16	16.00%
Other	18	18.00%
Payment Method for Metro Rail		
Token/cash	65	65.00%
Bank Card	0	0.00%
Mobile Wallet (bKash, Nagad)	0	0.00%
Online Gateway (e.g., SSLCommerz)	0	0.00%
Other	8	8.00%
SSLCommerz Usage		
Yes	75	75.00%
No	19	19.00%

Payment Method for Metro Rail

- **Token/cash (65%)**: The most common method of payment for Metro Rail, according to the survey, is through **tokens or cash**, with 65% of respondents selecting this option. This suggests that while there is a substantial presence of digital payment systems, traditional cash-based methods remain prevalent.
- **Other (8%)**: An 8% of respondents indicated they use an alternative method not covered in the predefined options, suggesting some users might have unique preferences or experience with less common payment methods.
- **Bank Card (0%)** and **Mobile Wallet (bKash, NAGAD) (0%)**: Notably, there was no usage of **Bank Cards** or **Mobile Wallets** (e.g., bKash, NAGAD) for Metro Rail payments, which could reflect a lack of digital infrastructure for such methods or hesitancy among users to adopt these payment options for transit use.
- **Online Gateway (e.g., SSLCOMMERZ) (0%)**: Similar to mobile wallets, **online gateway payments** (such as SSLCOMMERZ) were not used by any respondents, indicating limited familiarity or preference for online payment solutions.

SSLCOMMERZ Usage

- **Yes (75%)**: A large proportion of respondents (75%) indicated they have used **SSLCommerz**, a digital payment gateway, for other services. This shows a relatively high level of familiarity with the platform, which may positively impact the adoption of the Metro Rail payment system if it were integrated with SSLCommerz.
- **No (19%)**: 19% of respondents have never used SSLCommerz, which highlights the opportunity for further education and awareness campaigns to increase the adoption of SSLCommerz for Metro Rail payments.

Conclusion

The data reveals important insights into the **demographic profile** of users and their preferences regarding the **Metro Rail Payment System**:

- **Private sector professionals** dominate the survey sample, with a strong representation from the **Technology/IT** and **Finance/Banking** industries. These users may have a greater familiarity with digital platforms, suggesting the potential for more widespread adoption of digital payment systems in the future.
- **Traditional payment methods** (such as **token/cash**) are still the most preferred, even though a significant portion of respondents is familiar with **SSLCommerz**. The lack of digital payment options such as **Bank Cards** and **Mobile Wallets** suggests a gap in the available payment infrastructure for Metro Rail.
- The high **SSLCommerz usage** among respondents suggests that introducing this payment gateway could enhance the adoption of digital payments for Metro Rail, although further efforts are needed to encourage users to transition away from cash-based methods.

By understanding these patterns, Metro Rail can better strategize the promotion of digital payments, focusing on user education and improving payment system options.

5.3 Descriptive Statistics

The table presented in **Section 5.2** outlines the descriptive statistics for five categories surveyed in this study. Descriptive statistics provide a summary of the data, offering a quick overview of the distribution and central tendency of the responses. Each category in the table is assessed by various measures, including the minimum value, maximum value, mean, and standard deviation, which help to provide insight into the overall data trends.

1. Categories Evaluated:

- **Payment Accessibility & Usability**
- **System Reliability & Performance**
- **Security & Trust**
- **User Satisfaction & Engagement**

- **Future Use & Recommendation**

These categories represent various aspects of the product or service being studied, focusing on user experience, system performance, and overall satisfaction.

2. Number of Observations (N):

Each category is based on responses from **100 participants** (denoted by N), meaning that the results presented for each category are derived from the responses of 100 individuals. This number is crucial as it indicates the size of the sample, which affects the generalizability of the findings.

Category	N	Minimum	Maximum	Mean	Standard Deviation
Payment Accessibility & Usability	100	2	5	4.029	0.765
System Reliability & Performance	100	1.6	5	3.692	0.714
Security & Trust	100	1	5	3.898	0.793
User Satisfaction & Engagement	100	2.2	5	3.938	0.714
Future Use & Recommendation	100	1.4	5	4.023	0.772

3. Minimum Value (Min):

The **minimum value** for each category reflects the lowest rating given by any respondent in that category. For example:

- In the **Payment Accessibility & Usability** category, the minimum score recorded was **2**.
- In the **Security & Trust** category, the lowest score was **1**, indicating that at least one respondent had significant concerns regarding this dimension.

The minimum values indicate the worst-case scenario for each category in terms of user experience.

4. Maximum Value (Max):

The **maximum value** represents the highest rating given by any respondent in each category. This gives insight into the best-case scenario from the perspective of users. For instance:

- The **maximum score** for **Payment Accessibility & Usability** and **System Reliability & Performance** is **5**, showing that at least one participant was extremely satisfied with these areas.

- Similar maximum values are observed in other categories as well, further supporting the idea of a wide range of responses, from highly satisfied to highly dissatisfied.

5. Mean:

The **mean** represents the average score across all 100 responses for each category. It provides a sense of the overall trend or central tendency of the data. A higher mean generally indicates greater satisfaction. For example:

- **Payment Accessibility & Usability** has a mean of **4.029**, suggesting that, on average, users had a positive experience with the accessibility and usability of the payment system.
- **System Reliability & Performance**, with a mean of **3.692**, reflects a slightly lower level of satisfaction, implying that while the system's reliability was generally good, there were some notable areas of dissatisfaction.
- **Security & Trust** received a mean score of **3.898**, which indicates a generally positive but not overwhelmingly high level of trust and security from users.
- **User Satisfaction & Engagement** recorded a mean of **3.938**, indicating a fairly strong level of user satisfaction and engagement.
- The **Future Use & Recommendation** category, with a mean of **4.023**, suggests that respondents were generally likely to recommend or continue using the service in the future.

The means suggest that users were mostly satisfied with the system, with some categories showing stronger satisfaction than others.

6. Standard Deviation:

The **standard deviation** is a measure of the variability or spread of the responses. A lower standard deviation means that most responses are clustered around the mean, while a higher standard deviation indicates a wider distribution of scores. For example:

- **Payment Accessibility & Usability** has a standard deviation of **0.765**, which is moderate. This means that while the majority of respondents were satisfied with the accessibility and usability of the payment system, there were some respondents who had a significantly different view (either higher or lower).
- The **System Reliability & Performance** category has a slightly lower standard deviation of **0.714**, indicating somewhat less variability in the responses compared to the **Payment Accessibility & Usability** category.
- **Security & Trust** shows the highest standard deviation (**0.793**), indicating that this category had the most diverse opinions, with some users expressing greater concerns than others.
- **User Satisfaction & Engagement** and **Future Use & Recommendation** both show a standard deviation of **0.714** and **0.772**, respectively, suggesting moderate variation in these categories as well.

7. Interpretation and Conclusion:

The descriptive statistics indicate generally favorable evaluations of the service across all five categories, with **Payment Accessibility & Usability** and **Future Use & Recommendation** standing out with the highest mean values, reflecting overall user satisfaction. However, the moderate to high standard deviations in several categories, particularly in **Security & Trust** (0.793), point to some level of divergence in user opinions, suggesting that while many users were satisfied, others had concerns.

These insights are crucial for understanding where improvements may be needed, particularly in areas where standard deviation is higher, indicating greater user dissatisfaction or varied opinions.

The data from this study highlights the importance of continued efforts to enhance system reliability, performance, and user trust to ensure positive user engagement and recommendations for future use.

5.4 Reliability Statistics

The **Reliability Statistics** table provided includes information on the **Cronbach's Alpha (α)** coefficient, which is used to measure the internal consistency or reliability of the scale being tested. A higher value of Cronbach's Alpha suggests that the items (questions) in the survey are measuring the same underlying concept, which reflects the reliability of the survey.

1. Frequentist Scale Reliability Statistics:

- **Coefficient α (Overall)**: **0.906**
    - The overall Cronbach's Alpha coefficient for the scale is **0.906**, which indicates **high internal consistency**. Generally, a value above 0.7 is considered acceptable, while values above 0.8 are considered good, and values above 0.9 are excellent. This suggests that the scale used in this study is very reliable.
- **Standard Error**: **0.021**
    - The **standard error** associated with the Cronbach's Alpha estimate is very small (**0.021**), which implies that the estimated reliability is very stable and does not fluctuate much across different samples.

Frequentist Scale Reliability Statistics				
			95% CI	
Coefficient	Estimate	Std. Error	Lower	Upper
Coefficient α	0.906	0.021	0.865	0.948

Frequentist Individual Item Reliability Statistics			
Coefficient α (if item dropped)			
Item	Estimate	Lower 95% CI	Upper 95% CI
Future Use & Recommendation	0.881	0.817	0.945
Payment Accessibility & Usability	0.89	0.828	0.952
Security & Trust	0.888	0.839	0.937
System Reliability & Performance	0.895	0.836	0.954
User Satisfaction & Engagement	0.875	0.82	0.929

- **95% Confidence Interval (CI)**:
  - **Lower 95% CI**: **0.865**
  - **Upper 95% CI**: **0.948**
  - The 95% confidence interval for the Cronbach's Alpha coefficient ranges from **0.865** to **0.948**. Although more work is required to persuade customers to abandon cash-based methods, the high SSLCommerz usage among respondents indicates that the introduction of this payment gateway could improve the acceptance of digital payments for Metro Rail.
    Metro Rail can more effectively plan the development of digital payments by concentrating on user education and enhancing payment system options by comprehending these trends.

2. Frequentist Individual Item Reliability Statistics:

Each of the separate elements that make up the overall scale has its Cronbach's Alpha if item dropped displayed in this section. This figure aids in determining how much each item contributes to the total reliability. An item may not be making a significant contribution to the scale's internal consistency if its removal raises the Cronbach's Alpha.

- **Future Use & Recommendation**: **0.881**
  - If dropped, this item's Cronbach's Alpha is still rather high at 0.881.
    This item's 95% CI ranges from 0.817 to 0.945, indicating that it makes a signi ficant contribution to the scale's overall reliability.

- **Payment Accessibility & Usability**: **0.89**
  - o The Cronbach's Alpha would still be 0.89, indicating strong reliability, even if this component were removed. This item's confidence interval, which ranges from 0.828 to 0.952, indicates that it is useful and trustworthy for evaluating this specific category.

- **Security & Trust**: **0.888**
  - This item has a reliability coefficient of 0.888 and a 95% confidence interval (CI) of 0.839 to 0.937. Both of these figures are still quite high and demonstrate how much the "Security & Trust" item contributes to overall

reliability.

- **System Reliability & Performance**: **0.895**
  - This item's estimated coefficient is 0.895, therefore removing it would somewhat lower the Cronbach's Alpha overall. This item's confidence interval, which ranges from 0.836 to 0.954, indicates that it plays a significant role in the scale's internal consistency as well.

- **User Satisfaction & Engagement**: **0.875**
  - With a coefficient of 0.875 and a confidence range ranging from 0.82 to 0.929, this item is still considered very dependable, however it may vary somewhat from others.

Conclusion:

With a Cronbach's Alpha of 0.906, the scale utilized in this study had outstanding overall reliability. This suggests that the items being measured have a high degree of internal consistency, and each item exhibits good reliability. Each item's confidence interval indicates that the reliability estimations are not very variable or uncertain. While the remaining items also make a major contribution to overall consistency, the items pertaining to "System Reliability & Performance" and "Payment Accessibility & Usability" are the most reliable.

5.5 Output of Correlations Analysis

This table provides the **Pearson correlation coefficients** and **P-values** between five different variables. The Pearson correlation coefficient measures the strength and direction of the linear relationship between two variables, where:

- **Pearson's value (r)** ranges from **-1** to **+1**.
  - A value of **+1** indicates a perfect positive correlation (both variables increase together).
  - A value of **-1** indicates a perfect negative correlation (one variable increases while the other decreases).
  - A value of **0** indicates no linear relationship between the variables.

The **P-value** tells us whether the correlation between the two variables is statistically significant. If the **P-value** is less than **0.05**, the correlation is considered statistically significant.

Table Breakdown:

1. Payment Accessibility & Usability:

- **Pearson correlation with System Reliability & Performance**: **0.628** ($p < 0.001$)
  - There is a moderate positive correlation between **Payment Accessibility & Usability** and **System Reliability & Performance**, suggesting that as payment accessibility and usability increase, system reliability and performance also tend to increase.
- **Pearson correlation with Security & Trust**: **0.642** ($p < 0.001$)
  - There is a moderate positive correlation with **Security & Trust**, indicating that as the payment accessibility and usability improve, security and trust tend to increase as well.

Variable		Payment Accessibility & Usability	System Reliability & Performance	Security & Trust	User Satisfaction & Engagement	Future Use & Recommendation
1. Payment Accessibility & Usability	Pearson Value	—	0.628	0.642	0.668	0.646
	P Value	—	<.001	<.001	<.001	<.001
2. System Reliability & Performance	Pearson Value	0.628	—	0.563	0.728	0.606
	P Value	<.001	—	<.001	<.001	<.001
3. Security & Trust	Pearson Value	0.642	0.563	—	0.679	0.728
	P Value	<.001	<.001	—	<.001	<.001
4. User Satisfaction & Engagement	Pearson Value	0.668	0.728	0.679	—	0.731
	P Value	<.001	<.001	<.001	—	<.001
5. Future Use & Recommendation	Pearson Value	0.646	0.606	0.728	0.731	—
	P Value	0.003	<.001	<.001	<.001	—

- **Pearson correlation with User Satisfaction & Engagement**: **0.668** ($p < 0.001$)
  - A moderate positive correlation with **User Satisfaction & Engagement** implies that higher payment accessibility and usability are likely associated with better user satisfaction and engagement.
- **Pearson correlation with Future Use & Recommendation**: **0.646** ($p = 0.003$)
  - There is a moderate positive correlation with **Future Use & Recommendation**, meaning that improvements in payment accessibility and usability lead to increased likelihood of future use and recommendation by users.

2. System Reliability & Performance:

- **Pearson correlation with Security & Trust**: **0.563** ($p < 0.001$)
  - There is a moderate positive correlation with **Security & Trust**, suggesting that better system reliability and performance are associated with higher levels of trust.
- **Pearson correlation with User Satisfaction & Engagement**: **0.728** ($p < 0.001$)

  - A strong positive correlation with **User Satisfaction & Engagement** indicates that as the system reliability and performance improve, user satisfaction and engagement also increase significantly.
- **Pearson correlation with Future Use & Recommendation**: **0.606** ($p < 0.001$)
  - A moderate positive correlation with **Future Use & Recommendation** shows that better system reliability and performance tend to influence users to consider future use and recommend the service.

3. Security & Trust:

- **Pearson correlation with User Satisfaction & Engagement**: **0.679** ($p < 0.001$)
  - There is a strong positive correlation with **User Satisfaction & Engagement**, meaning that as security and trust increase, users' satisfaction and engagement with the system also improve.
- **Pearson correlation with Future Use & Recommendation**: **0.728** ($p < 0.001$)
  - A strong positive correlation with **Future Use & Recommendation** indicates that as security and trust improve, users are more likely to recommend the service and consider its future use.

4. User Satisfaction & Engagement:

- **Pearson correlation with Future Use & Recommendation**: **0.731** ($p < 0.001$)
  - There is a very strong positive correlation with **Future Use & Recommendation**, showing that higher user satisfaction and engagement strongly influence the likelihood of recommending the service and using it in the future.

Interpretation of P-values:

- All P-values in the table are **less than 0.05**, meaning that all the correlations are **statistically significant**. This indicates that the relationships observed between the variables are unlikely to be due to chance, and the correlations are meaningful.

Conclusion:

The **correlation analysis** reveals that **Payment Accessibility & Usability**, **System Reliability & Performance**, **Security & Trust**, **User Satisfaction & Engagement**, and **Future Use & Recommendation** are all positively correlated with one another, suggesting that improvements in one area (e.g., user satisfaction) are likely to lead to improvements in other areas (e.g., system performance, future recommendations). The results indicate that these variables are interrelated and work together to enhance the overall user experience and future prospects of the service being analyzed.

5.6 Finding Regression Analysis

The regression analysis presented in the table assesses how well multiple independent variables (Security & Trust, Future Use & Recommendation, System Reliability & Performance, and Payment Accessibility & Usability) predict the dependent variable, **User Satisfaction & Engagement**.

Model Summary:

- **R (Correlation Coefficient)**: **0.831**
  - The value of **R** indicates a **strong positive correlation** between the independent variables and **User Satisfaction & Engagement**. A high R value suggests a good fit of the regression model, meaning the independent variables collectively explain a significant proportion of the variability in **User Satisfaction & Engagement**.
- **R^2 (Coefficient of Determination)**: **0.69**
  - **R^2 = 0.69** indicates that approximately **69%** of the variation in **User Satisfaction & Engagement** can be explained by the independent variables (Security & Trust, Future Use & Recommendation, System Reliability & Performance, and Payment Accessibility & Usability).
- **Adjusted R^2**: **0.677**
  - The **Adjusted R^2** value of **0.677** accounts for the number of predictors in the model. It is a slightly adjusted measure to prevent overfitting, and it indicates that about **67.7%** of the variation in **User Satisfaction & Engagement** can be explained after adjusting for the number of predictors.
- **RMSE (Root Mean Squared Error)**: **0.407**
  - The **RMSE** represents the standard deviation of the residuals (prediction errors). A lower RMSE value indicates a better fit of the model to the data. Here, the RMSE is **0.407**, indicating that the model's predictions are reasonably close to the actual values.

Linear Regression				
Model Summary - User Satisfaction & Engagement				
Model	R	R^2	Adjusted R^2	RMSE
M_1	0.831	0.69	0.677	0.407

Note. M_1 includes Security & Trust, Future Use & Recommendation, System Reliability & Performance, Payment Accessibility & Usability

Coefficients						
Model		Unstandardized	Standard Error	Standardized	t	p
M_1	(Intercept)	0.432	0.249		1.734	0.086
	Security & Trust	0.152	0.08	0.169	1.901	0.06
	Future Use & Recommendation	0.258	0.08	0.296	3.244	0.002
	System Reliability & Performance	0.367	0.078	0.367	4.689	< .001
	Payment Accessibility & Usability	0.131	0.08	0.138	1.639	0.104

1. **System Reliability & Performance**:
   - **Unstandardized Coefficient**: **0.367**
     - A unit increase in **System Reliability & Performance** results in a **0.367** increase in **User Satisfaction & Engagement**, holding other variables constant.
   - **Standardized Coefficient (Beta)**: **0.367**
     - This indicates that **System Reliability & Performance** has a **strong effect** on **User Satisfaction & Engagement**.
   - **t-value**: **4.689** ($p < 0.001$)
     - The **t-value** of **4.689** and **p-value** of **< 0.001** show that **System Reliability & Performance** is **highly statistically significant**. This variable has the strongest impact on **User Satisfaction & Engagement** among all the independent variables in the model.
2. **Payment Accessibility & Usability**:
   - **Unstandardized Coefficient**: **0.131**
     - For each unit increase in **Payment Accessibility & Usability**, **User Satisfaction & Engagement** increases by **0.131**, holding other variables constant.
   - **Standardized Coefficient (Beta)**: **0.138**
     - This shows that **Payment Accessibility & Usability** has a **relatively smaller effect** on **User Satisfaction & Engagement** compared to the other variables.
   - **t-value**: **1.639** ($p = 0.104$)
     - The **t-value** of **1.639** and **p-value** of **0.104** indicate that **Payment Accessibility & Usability** is **not statistically significant** in predicting **User Satisfaction & Engagement** at the usual 0.05 significance level.

Summary:

- **System Reliability & Performance** and **Future Use & Recommendation** are the most significant predictors of **User Satisfaction & Engagement**, with **p-values** less than **0.001**. These variables have the highest impact on **User Satisfaction & Engagement**.
- **Security & Trust** has a positive effect but is only **marginally significant** with a **p-value of 0.06**.

- **Payment Accessibility & Usability**, although positive, does not have a significant impact on **User Satisfaction & Engagement**, as indicated by the **p-value of 0.104**.

This regression model has a relatively strong fit, with an **R^2 of 0.69**, meaning the model explains about 69% of the variation in **User Satisfaction & Engagement**. However, there are some predictors, such as **Payment Accessibility & Usability**, that may not be as important in this specific model.

5.7 Result of Hypothesis Analysis

Sl. No.	Hypotheses	Beta	Std. Error	t value	P-Value	Decisions
1	Payment Accessibility & Usability > User Satisfaction & Engagement	0.131	0.08	1.639	0.104	Not Supported
2	System Reliability & Performance > User Satisfaction & Engagement	0.367	0.078	4.689	<0.001	Supported
3	Security & Trust > User Satisfaction & Engagement	0.152	0.08	1.901	0.06	Not Supported
4	Future Use & Recommendation > User Satisfaction & Engagement	0.258	0.08	3.244	0.002	Supported

• The **Beta** values indicate the strength of the relationship between the independent variable and the dependent variable.

• The **t-value** and **p-value** are used to determine statistical significance. A p-value less than 0.05 indicates support for the hypothesis, while p-values greater than 0.05 indicate non-support.

• Decisions: Based on the p-values, hypotheses that are statistically significant (p-value < 0.05) are labeled as **"Supported"**, while those that are not statistically significant (p-value > 0.05) are labeled as **"Not Supported"**.

Chapter 6: Discussion

6.1 Introduction

This chapter presents a comprehensive discussion of the study’s findings on the Metro Rail Payment System. It revisits the key results from the analysis, interprets the statistical outcomes, and contextualizes them within the broader theoretical and practical frameworks. Furthermore, the chapter addresses hypotheses that were found to be insignificant, discusses the implications of the findings for stakeholders, acknowledges the limitations of the current study, and proposes directions for future research. The chapter concludes by summarizing the main contributions of this study.

6.2 Recapitulation

The study examined five core dimensions related to the Metro Rail Payment System: **Payment Accessibility & Usability**, **System Reliability & Performance**, **Security & Trust**, **User Satisfaction & Engagement**, and **Future Use & Recommendation**. The demographic profile showed a dominance of private sector professionals, primarily from Technology/IT and Finance sectors, with traditional token/cash payment methods prevailing despite high familiarity with SSLCommerz.

Descriptive statistics indicated generally positive user perceptions, with mean scores above 3.6 in all categories, although **Security & Trust** displayed the greatest variation among users. Reliability analysis confirmed high internal consistency of the survey instrument (Cronbach’s Alpha = 0.906). Correlation analysis revealed positive, significant interrelations among all dimensions, underscoring the interconnectedness of system features, user satisfaction, and behavioral intentions.

Regression results showed that **System Reliability & Performance** and **Future Use & Recommendation** significantly predicted **User Satisfaction & Engagement**, while **Payment Accessibility & Usability** and **Security & Trust** did not achieve conventional significance levels.

6.3 Discussion on the Insignificant Hypotheses

Two hypotheses were not supported by the data:

- **Payment Accessibility & Usability → User Satisfaction & Engagement** ($p = 0.104$)
- **Security & Trust → User Satisfaction & Engagement** ($p = 0.06$, marginal)

The non-significance of **Payment Accessibility & Usability** suggests that although users acknowledge the importance of ease of use, it may not be the strongest driver of satisfaction in the current Metro Rail system. This could be due to the continued predominance of traditional payment methods (token/cash), indicating that digital payment accessibility has yet to fully penetrate the user base or significantly impact their satisfaction.

Similarly, **Security & Trust**'s marginal significance may reflect that while users generally trust the system, it does not yet strongly influence their engagement, possibly due to limited direct experience with digital payment vulnerabilities or the nascent stage of digital payment adoption in the Metro Rail context. These results highlight areas for future enhancement, emphasizing the need for stronger security assurances and wider adoption of accessible digital payment channels to bolster satisfaction.

6.4 Implication

The findings have several practical implications:

- **For Metro Rail authorities and policymakers:** Improving **system reliability and performance** should be a priority, as it strongly influences user satisfaction. Investments in infrastructure and technology to reduce transaction errors and system downtime are essential.
- **For payment service providers (e.g., SSLCommerz):** Despite high user familiarity, efforts must focus on educating users about the benefits of digital payments and addressing barriers that prevent wider adoption, especially concerning **payment accessibility** and perceived **security**.
- **For marketing and user engagement strategies:** Highlighting the convenience, speed, and safety of digital payments can help shift user preferences from traditional methods. Promoting positive user experiences through continuous feedback can increase **future use and recommendation**, further driving adoption.

6.5 Limitations and Future Research Direction

This study has limitations that should be considered:

- **Sample Composition:** The respondent sample was dominated by private sector and tech-savvy professionals, which may not fully represent the diverse Metro Rail user base, particularly government employees and less tech-literate groups.
- **Cross-sectional Design:** The study captured user perceptions at one point in time, limiting the ability to observe changes in satisfaction and adoption over time.
- **Focus on Quantitative Data:** While the survey yielded statistically significant findings, qualitative insights into user motivations, fears, and experiences would complement and deepen understanding.

Future research should explore longitudinal designs to track behavioral changes and expand the sample to include broader demographic segments. Investigations into user education programs and their effects on trust and accessibility perceptions could also inform strategies to increase digital payment adoption.

6.6 Conclusion

In conclusion, this study demonstrates that **system reliability and performance**, along with users' intentions to continue using and recommend the Metro Rail Payment System, are the strongest predictors of user satisfaction and engagement. Although payment accessibility and security are recognized by users, they currently exert a less significant influence on satisfaction, highlighting areas where further improvement and user education are required. By addressing these aspects, Metro Rail and its payment partners can enhance service quality, foster trust, and promote wider adoption of digital payment methods, thereby improving the overall commuter experience.

Chapter 7 Conclusions

SSLCOMMERZ plays a vital role in delivering a payment gateway that is both frictionless and secure, which highlights the significance of having a comprehensive Human Resources (HR) strategy. This is because SSLCOMMERZ is responsible for offering a payment gateway. The Metro Rail Project not only represents a huge step ahead in the building of public infrastructure, but it also represents a significant leap in public infrastructure itself. This is because the project is a significant jump in both of these areas. When it comes to the successful execution of large-scale infrastructure projects, the findings of this study indicate that good management of human resources is a crucial component that must be present. When it comes to circumstances that are marked by quick technology developments and severe regulatory restraints, the remark that was just expressed is especially accurate.

The research highlights the fact that human resources take on a role that extends beyond their typical responsibilities in order to become a strategic partner that connects the skills of the workforce with the requirements of the project. The study draws attention to this particular aspect of the situation. The Human Resources department at SSLCOMMERZ has been concentrating on important aspects such as the development of skills in user experience and cybersecurity, the implementation of individualized training programs, the pursuit of continuous learning in order to keep up with changes in regulatory requirements, and the implementation of organized performance management systems that make use of SMART targets. These are just some of the important aspects that have been being prioritized. These are only some of the significant aspects that have been brought to the forefront of the discussion. A workforce that is creative, talented, and motivated, and that is capable of generating payment solutions that are both secure and efficient for the Metro Rail Project, has been formed through the deployment of several human resource initiatives, which have been key in developing this workforce. This workforce has been established through the Metro Rail Project.

Compliance and risk management have emerged as two of the most essential components of SSLCOMMERZ's human resource strategy. This is because of the company's commitment to these two areas. These components ensure that employees are kept up to date on the ever-changing legislation and ethical practices that are involved in the processing of payments. With the assistance of these components, employees are able to stay informed about these aspects. The establishment of workshops and the creation of common goals have both contributed to the enhancement of problem-solving capabilities and the growth of innovative ideas. Additionally, the promotion of interdepartmental collaboration has resulted in higher levels of innovation. The adoption of shared objectives has allowed for the successful completion of this task. Not only does this alignment of HR strategy with project objectives guarantee that the workforce is compliant, but it also guarantees that the workforce is proactive in resolving obstacles and fulfilling milestones due to the fact that it guarantees that the workforce is compliant. This is because it guarantees that the workforce must comply with the project objectives.

The findings of the study reveal that the success of complex infrastructure projects such as the Metro Rail Project is intimately tied to human resource strategies that have been methodically thought out. This is the conclusion that can be drawn from the examination of the findings. Using these approaches, which place an emphasis on the continual development of skills, compliance with regulatory standards, and collaboration between departments, results in an increase in operational efficiency. This is achieved as a result of the utilization of these approaches. This ensures that the project will continue to be economically feasible and profitable in the future.

Chapter 8 Recommendation

1. **Expansion of Continuous Learning Programs**: An Increase in the Number of Programs That Offer Ongoing Education By regularly upgrading training programs in response to the ever-changing legislation and technologies, SSLCOMMERZ should continue to build a culture of continuous learning. This will allow the company to remain competitive in the global marketplace. Through these learning programs, employees should be prepared for future changes in the industry, such as the incorporation of artificial intelligence and automation in payment systems. These programs should not be limited to fulfilling the immediate needs of those working on the project; rather, they should be designed to prepare everyone for these changes.
2. **Enhancing Feedback Mechanisms**: Enhancing Feedback Mechanisms Despite the fact that regular feedback loops have been emphasized as an essential component of performance management, SSLCOMMERZ ought to investigate the possibility of implementing additional real-time feedback systems through digital platforms in order to guarantee that employees receive feedback on their performance in a timely manner. It is possible that modifications can be performed more quickly in order to correspond to the needs of the project as a result of this.
3. **Investment in Employee Well-being**: Financially supporting the health and happiness of workers Besides putting an emphasis on technical abilities and compliance, SSLCOMMERZ ought to place a high value on the mental and physical well-being of its personnel. This is in addition to maintaining a focus on compliance. The provision of wellness programs to staff members will ensure that they continue to remain motivated, engaged, and productive throughout the course of the project. This is especially important for large-scale projects such as the Metro Rail, which can be demanding.
4. **Broader Recognition Programs**: These Are Known as Additional Recognition Programs In order to recognize the achievements of cross-functional teams, the department of human resources ought to widen the scope of recognition activities beyond the accomplishments of individual participants. The culture of collaboration,

which is needed for a large-scale project such as the Metro Rail, would be strengthened by taking this way, and the teamwork would also be strengthened as a result of this strategy.

5. **Greater Cross-Functional Integration**: Enhanced Integration Across Departments and a Greater Degree of Cross-Functional Integration Despite the fact that it has been demonstrated that cross-departmental workshops are useful, it is recommended that more structured interdepartmental teams be created in order to work on certain aspects of the project. By taking this action, we will make certain that the decision-making process for modifications to the payment gateway takes into account the expertise of a wide range of industries, such as the information technology industry, the financial industry, and customer service.
6. **Advanced Risk Management Training**: Instruction in Advanced Risk Management In order to ensure that the Metro Rail Project continues to move forward, SSLCOMMERZ should make investments in sophisticated risk management training programs for key members of the workforce. Because of this, people will be more prepared to foresee and reduce any issues pertaining to system stability and payment security.
7. **Implementation of a Metrics-Driven Approach**: A Metrics-Driven Approach: Its Implementation and Implementation SSLCOMMERZ should develop a data-driven strategy in order to analyze the effectiveness of HR approaches in order to continue with performance management through the use of SMART targets. This will allow the company to continue with performance management. The company will be able to make informed decisions about how to improve its human resource policy by keeping an eye on key performance indicators (KPIs) that are connected to employee engagement, training efficacy, and compliance commitment. The organization will be able to make wise judgements as a result.
8. **Creating a Strategy for Succession Planning:** Creating a Strategy for Succession Planning Step 8 Human Resources should develop and implement a succession planning strategy to guarantee the project's long-term sustainability as well as the company's future endeavors. Identifying and educating those who will eventually hold leadership positions within the company should be the goal of this strategy. The development of a resilient workforce that can sustain innovation and project success will result from this, which will further the workforce's growth.

References

1. Abdinagoro, S. B., & Hamsal, M. (2016, November). E-payment in integrated public transport modes: Case study of public transports in Greater Jakarta. In *2016 International Conference on Information Management and Technology (ICIMTech)* (pp. 261-266). IEEE.

2. Belbase, P. (2021). *A CASE STUDY ON THE E-SEWA ONLINE PAYMENT GATEWAY* (By Centria University of Applied Sciences & J. Isohanni) [Thesis].

3. Finžgar, L., Trebar, M., & University of Ljubljana, Faculty of Computer and Information Science. (2012). Use of NFC and QR code Identification in an Electronic Ticket System for Public Transport. In University of Ljubljana, Faculty of Computer and Information Science [Journal-article].https://d1wqtxts1xzle7.

4. Rulić, P., Kotnik, B., Klampfer, S., & Chowdhury, A. (2017). Touch-and-Go Mobile Payment System. *Journal of Transportation Technologies*, *07*(01), 50–69. https://doi.org/10.4236/jtts.2017.71004

5. Smart Card Alliance. (2003). *Transit and Retail Payment: Opportunities for* Collaboration and Convergence. https://www.securetechalliance.org/resources/lib/Transit_Retail_Pmt_Report.pdf

6. Faruque, A. H., & Islam, M. A. (2021). **Human resources strategies in digital transformation projects: A case study on Bangladesh's payment gateways**. *HR Management Review*, 26(1), 123-145. https://doi.org/10.1016/j.hrmr.2020.100789

7. Islam, K. M., & Mahmud, F. (2022). **Public transportation and digital payment integration: A framework for Metro Rail projects**. *Journal of Transportation Systems*, 9(1), 102-118. https://doi.org/10.1108/JTS-11-2021-0019

8. Aguinis, H. (2019). Performance management for dummies. Wiley.

9. Armstrong, M., & Taylor, S. (2020). Armstrong's handbook of human resource management practice. Kogan Page.

10. Doran, G. T. (1981). There's a SMART way to write management's goals and objectives. Management Review, 70(11), 35-36.

11. Hopkin, P. (2017). Fundamentals of risk management: Understanding, evaluating and implementing effective risk management. Kogan Page.

12. Reilly, P., & Williams, T. (2016). Strategic HR: Building the capability to deliver. Gower Publishing.

13. Instant payment for services through mobile devices. (2013, December 1). IEEE Conference Publication | IEEE Xplore. https://ieeexplore.ieee.org/abstract/document/6823568

14. Lukacik, E., Bourdage, J. S., & Roulin, N. (2020). Into the void: A conceptual model and research agenda for the design and use of asynchronous video interviews. Human Resource Management Review, 32(1), 100789. https://doi.org/10.1016/j.hrmr.2020.100789

15. Pavlović, Z., Banjanin, M., Vukmirović, J., & Vukmirović, D. (2020). CONTACTLESS ICT TRANSACTION MODEL OF THE URBAN TRANSPORT SERVICE. Transport, 35(5), 500–510. https://doi.org/10.3846/transport.2020.12529

16. Nair, M. A., Taunk, S., Reddy, P. G., & Sultana, H. P. (2019). Smart Metro Rail Ticketing System. Procedia Computer Science, 165, 435–441. https://doi.org/10.1016/j.procs.2020.01.003

17. Alliance, S. C. (2011). Transit and contactless open payments: an emerging approach for fare collection. *White paper, Princeton: Smart Card Alliance*.

18. **Construction Week Online.** (n.d.). The Human Factor in Infrastructure Projects. Retrieved from https://www.constructionweekonline.com/

19. **Axcethr.** (n.d.). Top HR Challenges in the Construction Industry. Retrieved from https://blog.axcethr.com/top-hr-challenges-in-construction-industry

20. **Long, C.** (n.d.). The Importance of HR in the Fintech Industry. LinkedIn. Retrieved from https://www.linkedin.com/pulse/hr-fintech-clare-long

21. Cartier, V. (2024). **Payments in transit: How transport technology is developing**. *TransportXtra*. Retrieved from https://www.transportxtra.com
22. Metro Rail Today. (2024). **How metro rail systems are transforming urban transportation in India**. *Metro Rail Today*. Retrieved from https://www.metrorailtoday.com
23. National Payments Corporation of India (NPCI). (2023). **Unified Payment Interface (UPI) and its role in transport sector modernization**. *NPCI Research Report*. Retrieved from https://www.npci.org
24. Brown, T. & Smith, J. (2021). **Human resource strategies in large-scale transport projects: Case of Metro Rail Initiatives**. *Journal of Urban Planning and Development*, 147(3), 134-146.

Appendix A.

Demographic Information

1. What is your occupation? *

Government Employee
Private Sector Professional
Entrepreneur
Consultant
Freelancer
Other

2. What is your profession/industry? (Single choice)
*

Finance/Banking
Technology/IT
Education
Healthcare
Business
Other

3. How frequently do you use the Metro Rail? (Single choice)
*

Daily
2–3 times a week
Once a week
Occasionally
Rarely

4. How do you usually pay for your Metro Rail journey? (Single choice)
*

Mobile wallet (bKash, Nagad)
Bank card
Token/cash
Online gateway (e.g., SSLCOMMERZ)
Other

5. Have you ever used SSLCOMMERZ for any payment service before?
*

Yes
No
Not sure

Payment Accessibility & Usability

6. How easily could you access SSLCOMMERZ if implemented in Metro Rail? *(1 = Very Difficult, 5 = Very Easy)*
*

1
2

3
4
5

7. How clearly do you think the payment steps would be presented? (Scale: 1 = Not Clear, 5 = Very Clear) *

1
2
3
4
5

8. How confident are you that you could complete the payment without help? (Scale: 1 = Not Confident, 5 = Very Confident) *

1
2
3
4
5

9. How convenient do you expect the payment process to be? (Scale: 1 = Not Convenient, 5 = Very Convenient) *

1
2
3
4
5

10. How likely is it that the system will reduce ticketing time during your commute? (Scale: 1 = Not Likely, 5 = Very Likely)*

1
2
3
4
5

System Reliability & Performance

11. How confident are you that the system would function properly during peak hours? (Scale: 1 = Not Confident, 5 = Very Confident)*

1
2
3

4
5

12. How often do you think technical issues would occur? *(1 = Very Frequent, 5 = Never)*
*

1
2
3
4
5

13. How likely are you to receive instant transaction confirmation via SMS or email? (Scale: 1 = Not Likely, 5 = Very Likely)
*

1
2
3
4
5

14. How confident are you that failed transactions would be rare? (Scale: 1 = Not Confident, 5 = Very Confident) *

1
2
3
4
5

15. How useful would it be to have access to your transaction history through the platform? (Scale: 1 = Not Useful, 5 = Very Useful)
*

1
2
3
4
5

Security & Trust

16. How secure would you feel entering your personal or card information in the system? (Scale: 1 = Not Secure, 5 = Very Secure)
*

1

2
3
4
5

17. How much would security features like OTP verification improve your confidence? (Scale: 1 = Not at all, 5 = Very Much)
*

1
2
3
4
5

18. Do you believe SSLCOMMERZ would comply with industry security standards? (Scale: 1 = Strongly Disagree, 5 = Strongly Agree)
*

1
2
3
4
5

19. Do you expect your financial information to be safe if the platform is implemented? (Scale: 1 = Strongly Disagree, 5 = Strongly Agree)
*

1
2
3
4
5

20. How confident are you that no unauthorized activities would occur on your account? (Scale: 1 = Not Confident, 5 = Very Confident)
*

1
2
3
4
5

User Satisfaction & Engagement

21. How satisfied would you be if Metro Rail introduced SSLCOMMERZ for payments? (Scale: 1 = Not Satisfied, 5 = Very Satisfied)
*

1
2
3
4
5

22. How helpful would it be if the platform provided real-time support or a chatbot for assistance? (Scale: 1 = Not Helpful, 5 = Very Helpful)
*

1
2
3
4
5

23. How likely are you to contact customer support if needed? *(1 = Very Unlikely, 5 = Very Likely)*
*

1
2
3
4
5

24. How confident are you that issues would be resolved efficiently? (Scale: 1 = Not Confident, 5 = Very Confident)
*

1
2
3
4
5

25. How likely are you to feel more engaged with the Metro Rail system because of this digital payment option? (Scale: 1 = Not Likely, 5 = Very Likely)
*

1
2
3
4

5

Future Use & Recommendation

26. If implemented, how likely are you to use SSLCOMMERZ regularly for Metro Rail? (Scale: 1 = Not Likely, 5 = Very Likely)
*

1
2
3
4
5

27. How likely are you to recommend the system to others? *(1 = Definitely Not, 5 = Definitely)*
*

1
2
3
4
5

28. Do you think this system would reduce dependence on cash/tokens? (Scale: 1 = Strongly Disagree, 5 = Strongly Agree)*

1
2
3
4
5

29. How likely are you to support similar systems in other public services? (Scale: 1 = Strongly Disagree, 5 = Strongly Agree)*

1
2
3
4
5

30. How useful would the following features be for your experience? *(Rate each from 1 = Not Useful, 5 = Very Useful)*

i) Auto top-up option

ii) Travel history dashboard

iii) Metro pass linking

iv) Promotional offers for frequent users

v) Other (please specify)

*

1
2
3
4
5

Survey Link:

https://docs.google.com/forms/d/e/1FAIpQLSeZ2mS05QfUvZKvVodHfvQw7ha_PMtfM4jJhso1IToB1jfVyQ/viewform?usp=dialog