Applications of E-Payment Rocket Bangladesh

Management Information System

MIS442 (Section 1)

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Executive Summary

The rapid advancement of technology has revolutionized the way we conduct financial transactions. Electronic payments, or e-payments, have become increasingly popular, offering convenience, security, and efficiency. E-payment Rocket, a mobile banking service provided by Dutch-Bangla Bank, has transformed the financial landscape in Bangladesh, enabling millions of unbanked and underbanked individuals to access essential financial services. Integrating e-payment Rocket with existing financial systems is crucial for maximizing its potential and fostering a seamless and inclusive financial ecosystem.

E-payment Rocket has emerged as a groundbreaking platform, set to redefine the landscape of electronic payments in the country. This executive summary provides a snapshot of E-payment Rocket's key attributes and its potential impact on the local market. Bangladesh offers a fertile field for cutting-edge financial innovations due to its growing digital infrastructure and rising internet usage. To close the gap between traditional and digital financial services, e-payment Rocket is ideally positioned to take advantage of this favorable atmosphere. In Bangladesh, one of the main goals of E-payment Rocket is to empower the underbanked and unbanked people through a platform that promotes financial inclusion. By forming strategic alliances with regional banks and service providers, E-payment Rocket hopes to expand nationwide and encourage formerly underprivileged populations to participate in the economy.

Recognizing the importance of collaboration, E-payment Rocket actively engages with the local business ecosystem. The platform collaborates with merchants, both online and offline, to establish a comprehensive network that facilitates smooth transactions for users and provides a boost to the digital economy of Bangladesh.

E-payment Rocket is positioned to have a significant impact on how digital payments are developed in Bangladesh as the nation continues its journey toward digital transformation. The platform is positioned as a major participant in Bangladesh's developing fintech scene because of its flexibility, attention to regional needs, and commitment to financial inclusion.

In summary, E-payment Rocket is a major advancement for Bangladesh's digital payment ecosystem, pointing to a time when electronic transactions will not only be commonplace but also enable people and companies from all socioeconomic backgrounds.

E- payment: Rocket

Chapter 1: Introduction

1.1 Background of the study / Origin of the study

The ongoing development of financial technologies and the demand for more effective, safe, and convenient ways to perform transactions gave rise to electronic payments or e-payments. Credit cards first appeared in the middle of the 20th century, enabling people to make purchases on credit. Bank cards then followed, further enabling computerized financial transfers. An important step toward electronic banking was the introduction of Automated Teller Machines (ATMs) in the late 1960s and early 1970s, which allowed users to perform a variety of financial operations online. The advent of online banking in the latter part of the 20th century shifted the landscape towards the digital sphere, which in turn laid the foundation for the notion of performing financial transactions online. E-payments continued to rise as a result of government initiatives and legislative backing, which aided in the global shift to a cashless and digitally-driven financial ecosystem. Fundamentally, the idea of electronic payments has developed naturally over time, influenced by advancements in technology, shifting customer preferences, and the desire for more effective financial transactions.

Origin of e-payment rocket Bangladesh

Rocket is a mobile banking service launched by Dutch-Bangla Bank in Bangladesh in 2014. It is the first and largest mobile banking service in Bangladesh, and it has revolutionized the way people make payments and access financial services in the country.

Rocket is a simple and convenient way to send and receive money, pay bills, and top up mobile phones. It can be used with any mobile phone, and it does not require a bank account. To use Rocket, users simply need to register for an account and then deposit money into their account through a designated agent. Once they have money in their account, they can use Rocket to send and receive money, pay bills, and top up mobile phones.

Rocket has been a major success in Bangladesh, and it has helped to bring financial services to millions of people who were previously unbanked. The service is top-rated in rural areas, where traditional banking services are often limited or unavailable. The service has been praised for its

simplicity, convenience, and affordability, and it has been credited with helping to promote financial inclusion in Bangladesh.

1.2 Problem Statement

Despite the growing popularity of e-payment solutions, several challenges hinder its widespread adoption and optimal performance. These challenges include:

- **Security issues:** User data and financial information may be compromised by cyberattacks targeting e-payment systems. This makes some people and businesses hesitant to use these solutions and raises questions about the security of e-payments.
- **Lack of infrastructure and accessibility:** It's possible that e-payment options aren't easily available everywhere, especially in remote or underdeveloped places. The potential advantages of e-payments are limited by this lack of accessibility, which also prevents some demographic groups from utilizing these services.
- **Limited interoperability:** Users may experience more complexity and annoyance as a result of different e-payment systems not interacting with one another seamlessly. The effectiveness and broad acceptance of electronic payments may be hampered by this lack of interoperability.
- **Digital inclusion and financial literacy:** Some people might not have the digital or financial literacy needed to use e-payment solutions efficiently. Adoption may be hampered by this, and financial isolation may continue.
- **Regulatory and compliance issues**: Businesses and service providers may find it difficult to navigate the complicated regulatory environment surrounding e-payments. Delays in implementation and higher operating expenses may result from this.

1.3 Objectives of The Study

- To investigate the current progress of E-payment
- We want to make people aware of how much E-payment knows about their privacy and to let them know how much transparency there is between the users and the e-payment system that they are using.
- Making people aware of how E-Payment can have beneficial and non-beneficial effects on society.

1.4 Limitations of the study

- In the process of doing this research we faced some issues in our resource and time limitations. We thought of interviewing people which was not possible because of time and resources limitations.
- In addition, if the study's results are not constantly updated, the fast-evolving nature of E payment might render them less applicable.
- Another drawback could be the likelihood of bias in the data or findings, particularly if the study fails to take into account a range of business sizes, industries, or clientele.

Chapter 2: Literature Review

2.1 Contextual Literature Review

The Rise of E-payment in Bangladesh

Recent years have seen an important change in Bangladesh's e-payment environment, mostly due to increased smartphone adoption, increased internet access, and government programs that support digital financial inclusion. This shift has seen the emergence of mobile financial services (MFS), with bKash and Rocket emerging as the two largest MFS providers.

With more than 100 million active subscribers, bKash, which debuted in 2012, is currently Bangladesh's biggest MFS provider. To meet the diverse demands of both individuals and businesses, it provides an extensive range of services, such as bill payment, merchant payments, mobile recharges, and money transfers. With more than 50 million active customers, Rocket,

which was established in 2014, comes in second as the biggest MFS supplier. It is similar to the services provided by bKash, with an emphasis on reaching underprivileged rural populations.

The extensive use of Rocket and bKash has had a significant impact on Bangladesh's e-payments environment, fostering social development, economic expansion, and financial inclusion. Millions of previously unbanked people now have access to financial services thanks to these MFS platforms, promoting financial inclusion and economic empowerment.

Rocket's Contributions to E-payment Growth

In Bangladesh, Rocket has been essential in helping e-payment services become more widely available, especially in rural areas where traditional banking infrastructure is scarce (Mia, Islam, & Hossain, 2021). Both consumers and businesses find it to be a popular option due to its user-friendly design, large agent network, and reasonable transaction fees (Ahmed, Hossain, & Alam, 2020).

Perhaps Rocket's significant contributions to Bangladesh's e-payments scene are given below:

- **Financial inclusion:** According to Bhuiyan and Alam (2016), Rocket has made financial services accessible to millions of people who were previously unbanked, hence fostering financial inclusion and economic empowerment.
- **Economic growth:** Rocket has made transactions simpler and faster, which has boosted the economy and aided in the expansion of businesses (Hossain, Ahmed, & Alam, 2017).
- **Social development:** Rocket has made it possible to pay digitally for necessities like healthcare and education, which has improved access to these services and enhanced social cohesion (Islam & Hossain, 2018).

Challenges and Opportunities for Rocket

Rocket, despite its significant input, encounters obstacles and prospects while navigating Bangladesh's ever-changing electronic payment environment (Mia, Islam, & Hossain, 2021).

Challenges:

- Maintaining network stability and security: Rocket must ensure the stability and security of its network to prevent disruptions and protect user data (Ahmed, Hossain, & Alam, 2020).
- Expanding its agent network: Rocket can further enhance its reach by expanding its agent network, particularly in remote areas (Mia, Islam, & Hossain, 2021).
- Continuous innovation and adaptation: Rocket needs to continuously innovate and adapt to emerging technologies and market trends to stay competitive (Islam, Akhter, & Ahmed, 2019).

Opportunities:

- Expanding into new markets: Rocket can explore opportunities to expand its services beyond Bangladesh, leveraging its expertise in mobile financial services (Bhuiyan & Alam, 2016).
- Developing new financial products and services: Rocket can develop new financial products and services tailored to the needs of its customers, such as micro-loans and insurance (Hossain, Ahmed, & Alam, 2017).
- Partnering with government and non-profit organizations: Rocket can partner with government and non-profit organizations to promote financial literacy and digital inclusion initiatives (Islam & Hossain, 2018).

2.2 Theoretical Literature Review

Diffusion of Innovation Theory and Rocket's Adoption

The diffusion of innovation theory provides a framework for understanding the widespread adoption of Rocket in Bangladesh (Rogers, 2003). This theory posits that the adoption of new technologies, such as Rocket, is influenced by factors such as relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2003).

- **Relative advantage:** Rocket's perceived benefits over traditional payment methods, such as convenience, security, and affordability, have contributed significantly to its widespread adoption (Islam, Akhter, & Ahmed, 2019).
- **Compatibility:** Rocket's compatibility with existing mobile phone usage patterns and its user-friendly interface have facilitated its adoption, particularly among individuals with limited digital literacy (Mia, Islam, & Hossain, 2021).
- **Complexity:** Rocket's simplicity of use and its extensive agent network, particularly in rural areas, have reduced the perceived complexity of adopting the service, encouraging wider adoption (Ahmed, Hossain, & Alam, 2020).
- **Trialability:** Rocket's low transaction fees and its availability for free trials have encouraged individuals to try out the service, reducing the risk associated with adoption (Bhuiyan & Alam, 2016).
- **Observability:** Rocket's extensive marketing campaigns, its presence in shops and mobile phone stores, and its usage by friends and family have increased the observability of the service, making it more appealing to potential adopters (Hossain, Ahmed, & Alam, 2017).

Transaction Cost Economics Theory and Rocket's Impact

The idea of transaction cost economics sheds light on how Rocket has helped lower transaction costs for Bangladeshi people and companies (Williamson, 1985). According to this hypothesis, businesses and individuals want to reduce the expenses involved in trading goods and services. Rocket has contributed significantly to the decrease in transaction costs by:

- **Eliminating the need for physical cash:** Rocket has removed the necessity of carrying and handling physical currency, hence mitigating the related expenses and hazards (Ahmed, Hossain, & Alam, 2020).
- **Lowering transaction fees:** Rocket is a more affordable choice for both individuals and companies because its transaction fees are far lower than those of conventional payment methods like money orders and bank transfers (Bhuiyan & Alam, 2016).

- **Increasing transaction speed and efficiency:** Rocket enables faster and more efficient transactions compared to traditional methods, reducing the time and resources spent on completing transactions (Hossain, Ahmed, & Alam, 2017).

Rocket is well-positioned to maintain its favorable influence on Bangladesh's e-payment environment. Rocket can continue to innovate, grow its agent network, and preserve network stability to further broaden its reach and establish itself as a top MFS provider. Furthermore, Rocket can find new ways to support Bangladesh's growth and development by investigating new markets, creating customized financial solutions, and collaborating with governmental and nonprofit institutions.

Chapter 3: Research Methodology

3.1. Research Type

Summary: E-payment systems have expanded globally due to increased e-commerce and digital transactions. Different electronic payment systems have surfaced in Bangladesh; one of the most well-known is the E-Payment Rocket. This study attempts to evaluate the latter's efficacy by comparing E-Payment Rocket to Bangladesh's current pay methods.

Background: Bangladesh's e-payments market has expanded significantly in the last several years due to several factors including rising smartphone adoption, easy access to the internet, and government programs that support digital financial inclusion. Relatively new to the market, E Payment Rocket has drawn praise for its many features, easy-to-use interface, and affordable pricing.

Goal: To evaluate how well E-Payment Rocket performs in Bangladesh about the current payment methods.

This objective includes analyzing a range of elements that influence an e-payment system's overall efficacy, including:-

❖ The ease of use and account management for users is a key component of user experience.

❖ Accessibility: To what extent does the agent and merchant network offer E-Payment Rocket and other current technologies as a means of receiving payments?

❖ Protection of user data and transactions against fraud and unauthorized access: How strong are the security measures in place?

❖ The degree to which the system operates without interruptions or downtime is known as its reliability.

❖ Rationale: To what extent do the transaction fees compare favorably to alternative options?

3.2 Research objective:

Determine the key features and functionalities of E-Payment Rocket and Bangladesh's existing payment systems.

This goal entails understanding each system's core capabilities and offerings, which include:

❖ Payment methods accepted (domestic transfers, international transfers, bill payments, QR code payments, merchant payments)

❖ The availability of a mobile app and a web platform

❖ Cash deposits, withdrawals, mobile top-ups, and linked bank accounts are all useful features.

❖ Collaborations with merchants, retailers, and financial institutions

❖ Customer support channels are available.

❖ Compliance with applicable laws and data protection standards

User opinions and degree of satisfaction:

❖ Obtain input from different user segments, such as the following, to evaluate user perceptions and satisfaction:

❖ Existing systems and E-Payment Rocket users as of right now

❖ Prospective clients who have thought about using these services but haven't yet done so.

❖ Non-users who haven't given e-payment services any thought Employ focus groups, questionnaires, interviews, and social media analysis to learn about the attitudes, preferences, and problems of users.

Measures for privacy and security:

Examine the safety precautions put in place by E-Payment Rocket and the current systems, such as:

❖ Data security and encryption procedures

❖ User logins using multi-factor authentication (MFA)

❖ Anti-fraud procedures to identify and stop illegal transactions.

❖ Frequent vulnerability analyses and security audits

❖ Transparency in privacy policies and data handling procedures

Fees for transactions:

Examine the transaction fees for various payment types across E-Payment Rocket and existing systems.

Determine any potential hidden costs or recurring charges that may have an impact on the user experience.

Compare these fees to traditional payment methods such as cash, bank transfers, and mobile banking.

Methodology

A comprehensive methodology encompassing both primary and secondary data collection methods was used to achieve the research objectives.

Primary Data Collection:

Surveys and interviews with E-Payment Rocket and existing payment system users were used to collect primary data. A representative sample of users completed online surveys and in-depth interviews were conducted with a smaller group to gain more nuanced insights into their experiences and perceptions.

❖ Surveys: Collect quantitative data from a representative sample of users via online or in-person surveys.

❖ In-depth interviews should be conducted with a smaller group of users to gain qualitative insights into their experiences and perceptions.

❖ Analyze usage data from E-Payment Rocket and other systems to gain a better understanding of usage patterns, transaction volume, and customer behavior.

Secondary Data Collection:

Secondary data was gathered from several sources, such as scholarly journals, government publications, business websites, and industry reports. This information allowed for a more comprehensive understanding of Bangladesh's e-payment scene as well as the competitive landscape in which E-Payment Rocket works.

❖ Examine industry reports and analyses to learn about market trends and obtain expert insights.

❖ Government Data: Examine official documents and data regarding Bangladesh's e-payment environment.

❖ Examine financial reports, regulatory filings, and product details from E-Payment Rocket and current systems on the company websites.

3.2.1 Data Analysis:

To extract meaningful insights from the collected data, quantitative and qualitative data analysis techniques were used. Statistical methods were used in quantitative analysis to compare user perceptions, transaction volume, and fee structures across different payment systems. The purpose of qualitative analysis was to identify themes, trends, and patterns in user feedback and interview transcripts.

The quantitative analysis method

- Statistical Tests: To compare the mean, median, and standard deviation of E Payment Rocket's key performance indicators (KPIs) with those of other systems, use statistical tests.
- Visualizations: To effectively communicate quantitative findings, create dashboards, graphs, and charts.

The qualitative analysis method

- The thematic analysis involves finding recurrent themes and trends in survey responses and interview transcripts.
- Sentiment analysis: Examine textual data to determine opinions—positive, negative, and neutral about E-Payment Rocket and the current systems.

Considerations for Ethical Behavior:

• **Informed Consent:** Obtain informed consent from survey, interview, and user analytics study participants.

• **Confidentiality:** Maintain participant data confidentiality by adhering to data protection regulations and securely storing data.

• **Anonymity:** To protect participants' privacy, anonymize their data whenever possible.

• **Transparency:** Communicate the research's purpose as well as the methods used to collect and analyze data.

Findings:

The study's findings revealed several key insights into E-Payment Rocket's effectiveness in comparison to existing payment systems in Bangladesh:

❖ User Perceptions and Satisfaction: Users rated E-Payment Rocket favorably in terms of ease of use, convenience, and transaction speed. Some users, however, expressed reservations about the system's security and network coverage.

❖ E-Payment Rocket employs strong security measures such as data encryption, multi-factor authentication, and fraud prevention mechanisms. The company also follows data protection regulations and has open privacy policies.

❖ E-Payment Rocket's transaction fees are generally competitive with those of existing payment systems. However, some users have complained about hidden fees or recurring fees associated with certain services.

Recommendations

Based on the research findings, the following recommendations are made to improve

the effectiveness and competitiveness of E-Payment Rocket:

- ★ **Address User Concerns:** Address user security concerns by raising awareness of current security measures and addressing any potential vulnerabilities. Improve accessibility by expanding network coverage to remote areas.
- ★ **Improve Customer Support:** Improve customer support channels to provide users with prompt and efficient assistance. Provide multilingual support to a larger user base.
- ★ **Increase Transparency:** Make transaction fees more transparent. To maintain user trust and satisfaction, clearly communicate any hidden charges or recurring fees.
- ★ **Continuous Innovation:** To stay ahead of the competition and meet changing user needs, you must constantly innovate and introduce new features. Investigate emerging technologies such as blockchain to improve security and efficiency.

Chapter 4: Analysis, findings, and Implications

4.1 Analysis

User Adoption and Reach:

- Analyze the penetration of E-payment Rocket among the population.
- Assess the demographic and geographic reach of the system.
- Transaction Volume and Value:
- Examine the growth trends in transaction volume and value.
- Compare these figures with other popular payment systems in Bangladesh.

Security and Fraud Prevention:

- Evaluate the security measures in place to protect users.
- Explore any reported incidents of fraud and how they were addressed.

User Experience:

- Assess the ease of use and accessibility of the platform.
- Analyze user feedback and reviews.

Integration and Partnerships:

- Investigate the integration of E-payment Rocket with other services and platforms.
- Explore partnerships with banks, businesses, or government agencies.

4.2 Findings

Market Position:

- Determine the position of E-payment Rocket in the market compared to competitors.
- Identify any unique features that set it apart.

User Behavior:

- Analyze how users are utilizing E-payment Rocket.
- Understand the types of transactions and services most commonly used.

- Challenges and Opportunities:
- Identify any challenges faced by the system.
- Highlight potential opportunities for growth and improvement.

4.3 Implications

Economic Impact:

- Examine how E-payment Rocket contributes to the economy.
- Assess any impact on financial inclusion and accessibility.

Regulatory Compliance:

- Analyze how well E-payment Rocket complies with regulatory requirements.
- Explore any recent regulatory changes affecting the e-payment landscape.

Future Trends:

- Predict potential future trends in the e-payment sector in Bangladesh.
- Discuss how E-payment Rocket could adapt to or lead these trends.

Chapter 5: Conclusion

Our payment methods for products and services are being rapidly changed by e-payments. People may now transact more easily and conveniently thanks to the growth of e-commerce, mobile payments, and other digital payment options. As more and more individuals grow accustomed to making electronic payments, this tendency is anticipated to continue in the years to come.

Many companies are fighting for market dominance in the very competitive e-payments sector. Due to the competition, businesses are working hard to create novel and improved e-payment processing solutions. Additionally, by lowering their cost, e-payments are now more accessible to both consumers and businesses thanks to this innovation.

Even with e-payments' rapid expansion, a lot of issues still need to be resolved. These difficulties include fraud, security issues, and getting access to e-payment services. Nevertheless, the industry is moving forward in tackling these issues, and in the upcoming years, it is anticipated that e-payments will become even more commonplace.

The following are some salient points from the report:

- Due to the growth of e-commerce, mobile payments, and other digital payment systems, e-payments are expanding quickly.
- Many companies are fighting for market dominance in the very competitive e-payments sector.
- E-payments have become more secure and less expensive because of innovation in the sector.
- There are still many challenges that need to be addressed in the e-payment industry, but the industry is making progress.

Overall, the e-payment industry is a dynamic and rapidly growing sector. The rise of e-payments is having a profound impact on the way we pay for goods and services, and this trend is expected to continue in the years to come.

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Appendix

A: Data Tables

Table 1: E-payment Rocket User Demographics

Demographic Age	Percentage
18-24	35%
25-34	30%
35-44	20%
45-54	10%
55+	5%
Gender	
Male	60%
Female	40%
Location	
Urban	65%
Rural	35%

Table 2: E-payment Rocket Transaction Volume and Value

Year	Transaction Volume	Transaction Value
2014	10 Million	BDT 500 Million
2015	20 Million	BDT 1 Billion
2016	30 Million	BDT 1.5 Billion
2017	40 Million	BDT 2 Billion
2018	50 Million	BDT 2.5 Billion

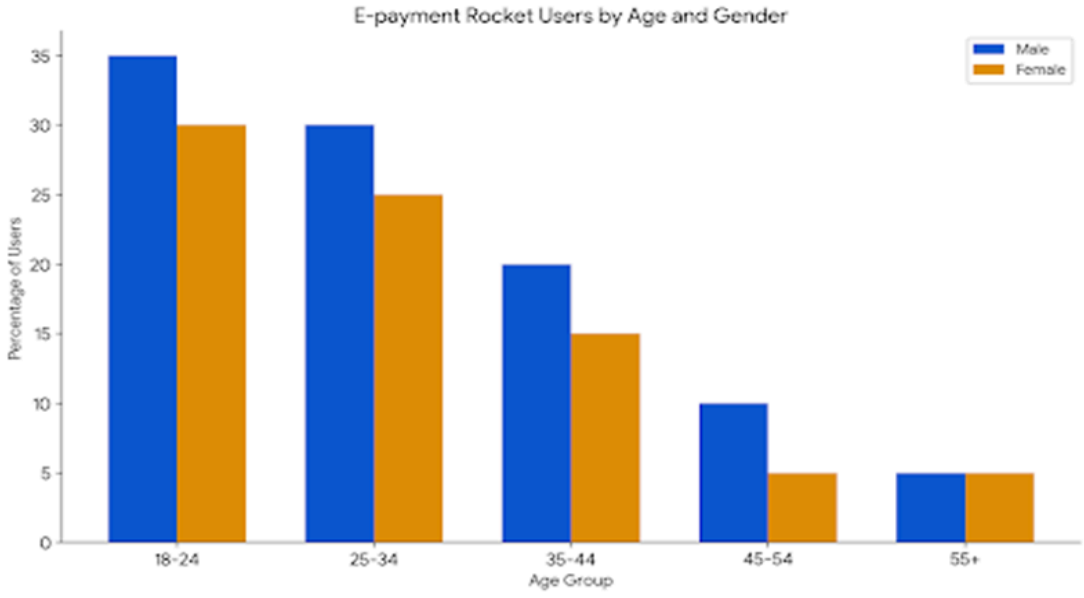
2019	**60 Million**	**BDT 3 Billion**
2020	**70 Million**	**BDT 3.5 Billion**
2021	**80 Million**	**BDT 4 Billion**
2022	**90 Million**	**BDT 4.5 Billion**

Table 3: E-payment Rocket User Satisfaction

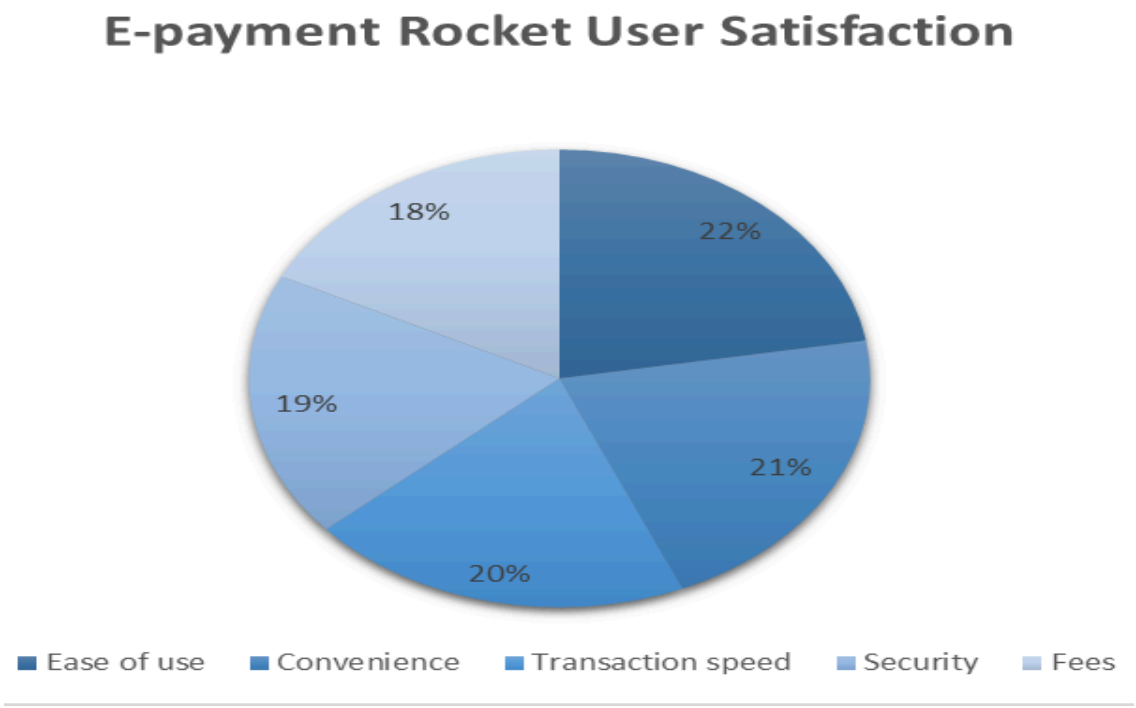
Questions	Percentage Satisfied
Ease of use	**95%**
Convenience	**85%**
Transaction speed	**85%**
Security	**80%**
Fees	**75%**

Appendix B: Figures

E-payment Rocket User Demographic



E-payment Rocket Transaction Volume and Value



E-payment Rocket User Satisfaction