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Impact of External Regulator on Digital Payments

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Abstract

This article examines the role of external regulators in customer acceptance of electronic payment systems (e-payments). It presents a study of four specific independent variables that impact customer perceptions of external regulators and e-payments: funds transfer, customer benefits, transaction safety, and external regulator. The study is based on a literature survey of around 100 articles, mostly published between 2015 and 2024.

The article highlights the importance of digital technology in the banking industry, particularly in the context of e-payments. It then discusses the role of external regulators in ensuring the safety and security of e-payment systems. It is argued that external regulators play a critical role in building customer trust and confidence in e-payments, which is essential for their adoption. The study's findings suggest that all four independent variables have a significant impact on customer perceptions of external regulators and e-payments. Customers are more likely to trust external regulators and adopt e-payments if they believe that funds transfer is efficient, assured transactions safety and customer benefit from using e-payments, and that external regulators are effective in protecting their interests.

The article concludes by discussing the implications of the findings for policymakers and practitioners. The authors recommend that policymakers and practitioners should focus on developing and implementing policies and regulations that promote customer trust and confidence in external regulators and e-payments. This can be done by investing in efficient and secure funds transfer systems, educating customers about the benefits of using e-payments, and strengthening the oversight of e-payment systems by external regulators. A sample size of 444 responses received out of 1200 questionnaires sent to Customers of Banks and Financial Institutions, Bankers, MSME companies, Professionals, and Corporate Companies.

Keywords: E-Funds Transfer System, Customer Benefits, Transaction Safety, External Regulator, E-Payment System, Customer Satisfaction, Card Services, Internet payments – Real Time Gross Settlements (RTGS), Immediate Payment System (IMPS), National Electronic Funds Transfer (NEFT), Customer Acceptance.

1.0 INTRODUCTION

Digital payments are electronic transactions that are conducted over the internet, without the need for physical cash. The increasing acceptance of internet-based ePayment systems has led to the emergence of a wide range of new financial transaction methods. The growth of ICT (information and communication technology) has benefited society in many ways. ICT has made it possible to access vast amounts of information and has broken down geographical barriers. This has created enormous potential for business growth, creativity, and dynamism in all sectors of commerce. Digital payments are also important for the effective implementation of monetary policy. Feyen et al. (2021) argue that digital payments can help to improve the efficiency and transparency of monetary transactions. The borderless of some of the

practices, spaces and markets where digital technologies creates a direct challenge to the territoriality of states and their regulation. Bonnamy, C., & Perarnaud, C. (2024).

Digital technology is promoted heavily through mass media and cyberspace (Chaveesuk et al., 2021). This has helped to raise awareness of the benefits of digital payments and has encouraged people to adopt these new methods of financial transactions. The widespread adoption of information and communication technology (ICT) has led to significant growth in commerce, data processing, marketing, communication, purchase and sale processing, distribution networks, quick customer service, and all client-based services. Digital e-payments are the essential pillars of the e-commerce industry (Chaveesuk et al., 2021).Banks, non-banking financial companies, insurance companies, online retailers, and digital payment systems all rely heavily on the internet and internal and external electronic networks for their daily operations. Every country is rapidly adopting digital payment.

Digital Payment Internet activism will bump up against demands for greater accountability and transparency on the part of digital platforms, and forms of governance that are meaningfully subject to state laws and regulations, and where sanctions for non-compliance can be effectively applied. Flew, T., & Martin, F. R. (2022).

1.1 External Regulator

External Regulators add a layer to the dual relationship between the regulator and its targets, by acting in combination with a regulator to affect the behaviour of a target group. Di Porto, F., &Zuppetta, M. (2021). Central Bank is the central authority that regulates and supervises digital payment systems, including electronic cash transfers, prepaid payment instruments, and card payments. In India the RBI's authority comes from the Payment and Settlement Systems Act (PSS) of 2007. The Indian Banking sector is striving hard to popularise digital payments and has gained momentum after demonetization and digital India initiatives. To facilitate digital payments, “National Payment Corporation of India (NPCI)” launched the “Unified Payment Interface (UPI)”, which is an amazing, revamped, and cost-effective breakthrough for enabling digital payment services for all. Mahesh, A. (2021).

1.2 Digital Payments

Digital Payments Information is accurately available in a system and once it is professed by individuals and processed in their own cognitive models, it turns into subjective information. Erkut, B. (2020).Digital payments are a web-based payment mechanism. The use of internet-based modern banking services makes banking money transfer transactions more accurate and less time-consuming. A number of transactions can be performed simultaneously, neat, tidy, accurate, and with increased productivity. The digital payment service emanates with an internet-based user interface that allows customers to access their bank accounts and business transactions wherever they are, using a unique passcode. Digital Payment are essential for the effective implementation of monetary policy and have a global impact on economic and financial activities (Feyen et al., 2021).Digital technology is heavily promoted through mass media and cyberspace (Rangaswamy et al., 2020; Solomon & Klyton, 2020). This has helped to raise awareness of the benefits of digital payments and encourage people to adopt these new methods of financial transactions. Web software solutions play a vital role in performing one or more of the functions of net-based solutions. The banking and insurance industries faced a significant challenge with their payment and receipt systems. The reconciliation of entries between inter- and intra-banks was a huge task, leading to fraud. The introduction of effective digital payment systems in economic-driven industries has significantly reduced fraud. There is a rapid global growth scenario in adopting digital payment systems. One of the best benefits of digital payments is that they are a paperless, cashless payment process. Raisagar, V. (2024).The COVID-19 pandemic has accelerated the adoption of digital payments. As people have become more reluctant to use cash, they have turned to digital payment methods for convenience and safety. Ghosh, G. (2021). Factors influencing Impact of External Regulation in ePayment systems in India. Journal of Retailing and Consumer Services, 56, 102618.

1.3 External Regulation in Digital Payment:

The factors that determine the acceptance of e-payment systems include data security, trust, ease of use, usefulness, and accessibility (Ghosh, 2021). While regulators encourage using technological solutions to reduce barriers to access and friction, there is a need to strike a balance between promoting technological innovations, protecting customers, and enhancing the returns to investors. Law, S. W. (2024).External regulation in Digital Payment Policy distributioncomprises learning and adaptation. Learning occurs when another’s adoption of a policy imparts information while adaptation occurs when another state’s such adoption alters the value of the practice. Wang, H., & Gao, S. (2024).

2.0 SCOPE OF THE STUDY

Like any other research work, this thesis too had its own limitations. First, the scope of the study was not restricted by geography, and different countries and continents are at varied stages of access to digitisation and digital payment system acceptance.

Second, the secondary data for the literature review considered articles only with research gaps, i.e., research limitations and scope for future research. This could mean not incorporating a few relevant and recent articles, despite technology evolving and getting outmoded every day. Furthermore, there may have been a chance of exclusion of some relevant literature that was written in languages other than English. This could perhaps lead to involuntary exclusion of some variables.

Industry expectations were concluded to have an insignificant relationship with customer acceptance of digital payment system. Though literature has traces of the expectations industry has from digitalisation in banking sector, this research emerged with contradicting results. Research can help to bridge the gap and bring about a more complete digital transformation.

Digital integration is never an all-or-none philosophy; it is an evolving target, and thus there are changing levels of integration practices. Researchers from academia and business could emphasise collecting data to create a universal scale that correlates the application of technology integration and the subsequent levels of improved student learning.

2.1 Research Problems: The research problems of digital payments include:

- Privacy concerns: Identity theft and compromised personal information are potential dangers in a cashless economy, but privacy might be compromised in other ways too. For example, when we pay digitally, we always leave a digital footprint that can be easily monitored by financial institutions. As a regulation that is focused on personal and non-personal data held by public sector bodies, the Data Governance Act created a strong mechanism for re-use of data based on the principles of transparency and proportionality. Eke, D., & Stahl, B. (2024).
- Customer acceptance: Despite the benefits of digital payments, many customers are hesitant to adopt them due to lack of digital financial awareness and literacy. Additionally, customers want to be protected by regulatory authorities and have confidence in the safety of transactions.

2.2 Research Questions

To understand more specific on this study we have focused and listed research question based on the Customer Acceptance of Digital Payments.

The following research questions are therefore raised in accordance with research gaps identified in past literature:

RQ 1. Does Fund Transfer influence the customer acceptance of Digital Payments?

RQ 2. How Does the customer benefits lead to customer acceptance of Digital Payments?

RQ 3: To what extent Transaction safety influence the customer acceptance of Digital Payments?

RQ 4. Does External Regulator result into the customer acceptance of Digital Payments?

2.3 Research Objectives

Independent Variables: The following four independent variables are explored in this study:

- Funds transfer (FT): The ease and convenience of transferring funds using digital payment methods.
- Customer benefits (CB): The perceived benefits of using digital payment methods, such as convenience, security, and savings.
- Transaction safety (TS): The perceived security of using digital payment methods.
- External regulators (ER): The role of government and external regulators in protecting consumers and

promoting the safe use of digital payment methods.

Dependent Variable: The dependent variable in this study is Impact of External Regulation in Digital Payment systems.

Literature Review: The literature review supports the importance of all five independent variables in influencing Impact of External Regulation in ePayment systems. For example, studies have shown that customers are more likely to adopt digital payment methods that are perceived to be safe and convenient. Additionally, studies have shown that government regulation and consumer awareness can play a role in promoting the adoption of digital payment systems.

Research Framework, Research Questions, Research Objectives, and Hypothesis

The research framework, research questions, research objectives, and hypothesis are clearly explained after a thorough review of the literature.

Conclusion: This study will investigate the factors that influence Impact of External Regulation in ePayment systems in India. The findings of this study will be used to develop recommendations for policymakers and businesses to promote the adoption of digital payment systems.

3.0LITERATURE REVIEW

Introduction

This section will outline the literature review in specific, pointing out the various gaps in the present literature and recommending how the thesis can take this information into writing a new contribution to the further studies. There are five important variables developed from the study of literature, namely:

Funds transfer (FT) The main Challenges in Funds Transfer are Fraud, Card data Security, Technical integration, less awareness in user ID and passwords. The Common challenges in Funds Transfer are lack of expertise, internal resistance to change, security concerns, upskilling and recruitment at external regulators Wang, D., & Li, G. (2022).

Customer benefits (CB) The benefits of digital transaction is Safe and secure. Recipients of cash payments not only often have to travel considerable distances to receive their payments but are also particularly vulnerable to theft Demirgüç-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2022).

Transaction safety (TS)Digital transaction keeps privacy and safety which can reduce trust because users are not sure of the ability, integrity, of digital money providers to protect transactions and user privacy. Banks take all precautions and makes aware customer of safety measures Sasongko, D. T., Handayani, P. W., & Satria, R. (2022).

External regulators (ER)The Central Bank offers total control rules and regulations concerning digital payment system safety and security, risk management, client protection and related areas of operationsThe Central Bank regulates and supervises digital payment systems in each country, such as electronic cash transfers, prepaid payment instruments, and card payments Rahi, S., Alghizzawi, M., & Ngah, A. H. (2022).

The dependent variable for the study is the impact of external regulation in ePayments (OM).

Gaps in the Literature

The literature on the impact of external regulation in ePayments is growing, but there are still a number of gaps. For example, there is limited research on the following topics:

- The impact of external regulation on the adoption of new ePayment technologies.
- The role of external regulation in promoting financial inclusion through ePayments.
- The impact of external regulation on the competitiveness of the ePayments industry.
- The effectiveness of different types of external regulation in ePayments.

Contribution of the Thesis

This thesis aims to address some of the gaps in the literature by investigating the following research questions:

- What is the impact of external regulation on the adoption of new ePayment technologies?

- How does external regulation promote financial inclusion through ePayments?
- What is the impact of external regulation on the competitiveness of the ePayments industry?
- Which types of external regulation are most effective in ePayments?

The findings of this thesis will contribute to the understanding of the role of external regulation in promoting the safe and efficient development of the ePayments industry. This information can be used by policymakers and regulators to develop effective regulatory frameworks for ePayments.

Figure1: **A snapshot exemplifying the summary of articles**

From the articles, a Literature Review was done as per the Format below.

Literature Review on Customer Acceptance Of Digital Payment System. By Manohar S Singh DBA 15					
Article	**Authors (Year), Topic of the Article, Name of the Journal. Vol. No. Issue No.**	**Major findings**	**Variables**	**Research Model/Tool /Theory**	**Limitations or Scope for further research**
1	Ranjith, P. V., Kulkarni, S., & Varma, A. J. (2021). A Literature Study of Consumer Perception Towards Digital Payment Mode In India. *PSYCHOLOGY AND EDUCATION, 58*(1), 3304-3319.	* It is found in the study that the Digital Payments India helped digitalisation to grow over years. * It is convenient, Cost Savings and ease of use. However, its safety, security, Privacy, ease of technology reach are disadvantages.	Dependent: Customer Acceptance on Digital Payment System Independent: Types of Digital Payment, Safety, Security, Privacy, and ese of Technology	Quantitative Model, Google Literature search cum study	* There is further scope since very less studies have been conducted in the role of digital payment among the retailers. Also, less studies are there in the role of technology in digital payment. There is need for more studies in these areas which future researchers can concentrate. There is scope for further studies by using primary data collection and analysis. If the security concerns are addressed and more awareness is created especially in villages, more people will adopt digital payment which will make the process easier and faster.

Factors influencing impact of external regulators in ePayments.

Perceived security and trust have a positive impact on the use of e-payment systems Ghosh, (2021). The most influential factors on perceived trust are technical and transaction procedures, and access to security guidelines.

Independent variables

These factors are the independent variables of the thesis topic.

a. Fund transfer (FT)

Several studies have shown that customers are increasingly transferring funds and paying bills digitally (Wang & Li, 2022). However, there are some drawbacks to computer-generated payments, such as technical issues, security risks, limited consumer protection, and fees. Additionally, computer-generated payments require internet access, which may be limited or unreliable in some areas. Efficient payment systems can speed up the liquidity flow of an economy. Funds transfer involves educating customers about different digital transfer methods, training them on how to use these methods, creating awareness of the technology, conveying the benefits of digital transfer, and educating end-users about the cost-effectiveness and time-saving aspects of digital payments.

The main disadvantages of digital systems are data security, privacy concerns, complexity, social disconnect, and crime.

Despite these drawbacks, digital payment systems have become popular due to the benefits they offer to end-users, such as cost-effectiveness and time-saving.

A detailed literature review was conducted to identify the measures of funds transfer. The following five measures were identified based on frequency analysis:

- Education of customer
- Training on fund transfer methods
- Digital awareness
- Benefits of digital transfer
- Cost-effectiveness

Hypothesis:

H1.1 – Fund transfer has a significant relationship with Impact of External Regulation in ePayment through the methods of education of customer, training on fund transfer methods, digital awareness, benefits of digital transfer, and cost-effectiveness.

b. Customer Benefits

With the increasing popularity of e-commerce, businesses are increasingly adopting digital payment systems to obtain maximum benefit (Jaskirat Kaur, 2021). There are two main types of digital payment systems:

- Internet-based payment systems: These include e-cash, credit cards, debit cards, and smart cards.
- Electronic transaction-based payment systems: These include secure electronic transaction, CyberCash, NetBill, and First Virtual Holdings digital payment.

Internet-based modern banking services make banking money transfer transactions more accurate, less time-consuming, and more productive. Digital payment services provide customers with a convenient and secure way to access their bank accounts and make business transactions from anywhere with an internet connection. Digital payments are also paperless and cashless, which offers a number of benefits to both customers and businesses.

The following five customer benefits of digital payments were identified based on frequency analysis:

- Time saving
- Self-controlled transactions
- Safety and security
- Cost reduction
- Data availability

Hypothesis:

H1.2 Customer Benefit has a significant relationship with Impact of External Regulation in ePayment through the method of time saving, self-controlled transactions, safe and secured, cost reduction, and data availability.

c. Transaction Safety (TS)

Transaction safety concerns significantly influence customer attitudes toward e-governance, as trust in e-governance is based on protecting personal information. Hasan, A., Alenazy, A. A., Habib, S., & Husain, S. (2024). Alhammadiet al. (2020) found that banks and online transaction facility providers need to maintain a competitive environment and continue to innovate to foster new services and products that reduce transaction costs for customers and businesses. Saju Shaha et al. (2020) found that customers who are ethically exposed view companies differently from others and feel more secure dealing with them again without any hesitations. These satisfied customers often work as free brand ambassadors through word-of-mouth because customers believe other customers more.

Based on a detailed literature review, the following five measures of transaction safety were identified based on frequency analysis:

- Safety of transaction
- Protection of password
- Protection from hackers
- Secrecy of transaction
- Security confirmation

Hypothesis:

H1.3 Transaction Safety significantly impacts Impact of External Regulation in ePayment through the method of safety of transaction, protection of password, protection from hackers, secrecy of transaction, and security confirmation.

d. External Regulator (ER)

There is no shortage of guidance given by regulators, consultants and lawyers, but the traditional principles are difficult to express in law and to put into practice in a steady way across and within jurisdictions. Bennett, C. J., & Raab, C. D. (2020). Pandey (2022) found that most central banks around the world conduct payments log studies to assess useful variables at the individual level and observe their impact on payment behavior. In the future, such studies may be continued with a larger sample and in a more structured manner.

In accordance with the fast-changing technology scenario, the department of information technology (DIT) adopted a practical approach by leveraging technology in response to the extraordinary challenges posed by the pandemic epidemic (RBI Annual Report 2020-2021). However, despite these benefits, end-users faced several challenges related to regulatory norms, network issues, secrecy, safety, security, trust, confidentiality, and fraud. This led to the underutilization of digital payment systems in the early stages of their introduction. However, through the government's continuous efforts to correct implementation issues and regulatory authorities' efforts to rectify the above issues, coupled with the benefits enjoyed by end-users, the system is gaining momentum in developing countries.

Based on a detailed literature review, the following five measures of external regulators were identified based on frequency analysis:

- Training to bankers
- Monetary literacy
- Awareness of digitalization
- Perceived usefulness
- Regulation of digital transfer system

Hypothesis:

H1.4 External Regulators have a significant relationship with the Impact of External Regulations in e-payments through the methods of training to bankers, monetary literacy, awareness of digitalization, perceived usefulness, and regulation of digital transfer system.

Similarly, a detailed literature review has been conducted to identify the impact of external regulators on e-payments. The following five outcome measures were identified based on frequency analysis:

The outcome measures are identified as follows.

a. Financial planning. Acceptance of funds transfer by digital payment systems improves financial planning for customers in developing countries. (Measures : Financial planning)Rahayu, R., Ali, S., Aulia, A., & Hidayah, R. (2022).

b. Increasing revenue. The digital payment system benefits the end users through time savings and cost reductions, thus increasing revenue. (Measures: increasing revenue.)Daud, I., Nurjannahe, D., Mohyi, A., Ambarwati, T., Cahyono, Y., Haryoko, A. E., ... & Jihadi, M. (2022).

c. Guaranteeing of trust and security. The three important components of security in transactions are privacy, security and service quality. (Measure: guaranteed trust and security.) Sasongko, D. T., Handayani, P. W., & Satria, R. (2022).

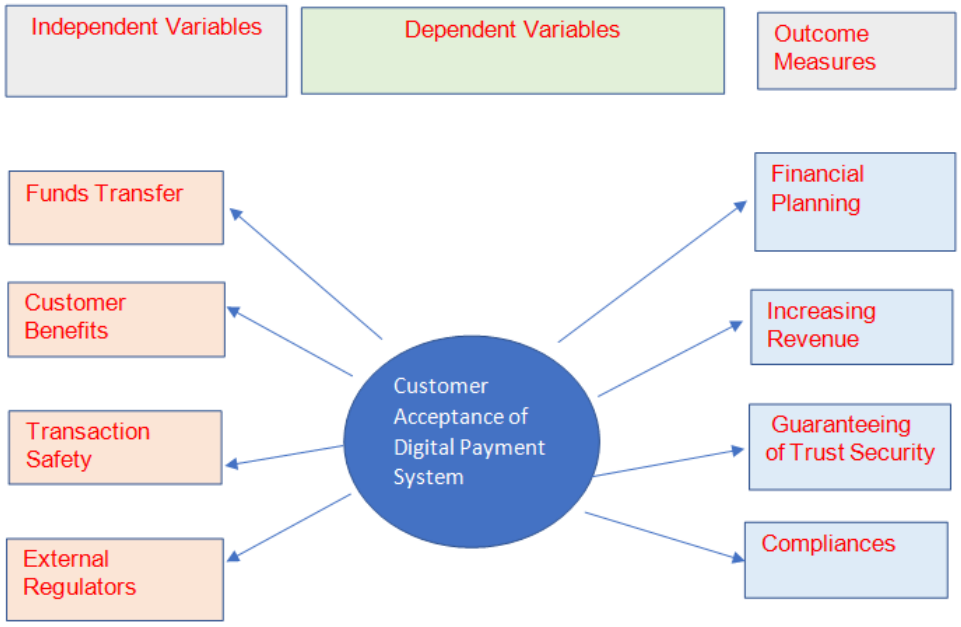
d. Compliances. Real-time monitoring and vigilance will enhance the end users' acceptance of the digital payment system. (Measure: addresses any compliance risks and challenges.)(Nouri, A., Khadem, S., Mutule, A., Papadimitriou, C., Stanev, R., Cabiati, M., ... & Carroll, P. (2022).

e. Conscious knowledge on products. Customer awareness of products, services and deliveries will increase the end users' acceptance of the digital payment system. (Measure: knowledge about the various consumer products.)(Sahi, A. M., Khalid, H., Abbas, A. F., Zedan, K., Khatib, S. F., & Al Amosh, H. (2022, April).

By using the above-identified independent variables and their measures, and the dependent variable and its outcome measures, the following framework has been developed. The research questions, objectives, and hypotheses are framed and shown below.

RESEARCH FRAME WORK

Figure -2.



METHODOLOGICAL DEVELOPMENT OF THE HYPOTHESES

Table 1: Research Questions, objectives and Hypothesis.

Research Questions	Research Objectives	Hypotheses
RQ 1. Does Fund Transfer impact the Impact of External Regulation in ePayment?	RO 1 - To understand fund transfer relationship with Impact of External Regulation in ePayment.	H1.1 – Fund transfer significantly impacts Impact of External Regulation in ePayment
RQ 2. Does Customer Benefits impact the Impact of External Regulation in ePayment?	RO 2 - To understand Customer Benefits relationship with Impact of External Regulation in ePayment.	H1.2 Customer Benefit significantly impacts Impact of External Regulation in ePayment

RQ 3. Does Transaction Safety impact the Impact of External Regulation in ePayment?	RO 3 - To understand Transaction safety relationship with Impact of External Regulation in ePayment	H1.3 Transaction safety significantly impacts Impact of External Regulation in ePayment
RQ 4. Does External Regulator impact the Impact of External Regulation in ePayment?	RO 4 - To understand External Regulator relationship with Impact of External Regulation in ePayment	H1.4 External Regulator significantly impacts Impact of External Regulation in ePayment
Over and above four hypothesis six indirect hypothesis were developed, tested and the detailed analysis and interpretations were shown below.		

Conclusion

The literature review section presented a synthesis of the available research on this topic through secondary sources of data published online. It identified research gaps, positioned the article, and constructed a model based on the gaps found. Five independent variables and one dependent variable emerged from this study:

- Independent variables:
    - Funds transfer
    - Customer benefit
    - Transaction safety
    - External regulator
- Dependent variable:
    - Impact of external regulators in e-payments, as measured by the research outcomes

By considering the above gaps, the research framework, the research questions, research objectives, and hypothesis were framed as above.

The next section will define the research methodology in detail, including the specific research methods used in this thesis, the sources of data, how the survey instrument was constructed and used, details of the pilot and main studies, sample collection, the profile of the respondents, and demographic factors.

4.0 RESEARCH METHODOLOGY

Literature Review Methodology: The scholarly research study plays a vital tool in the literature review methodology. It is the most popular, prevalent, and widespread tool. The quantitative methodology provides junior and academic researchers with further scope and insights on the relevant topic of research to fill the gap for further studies. In our research, we have searched Google Scholar, ProQuest, Ebsco, and Academia for similar research articles from the latest years as a database collection, using key hit words. The earliest research papers identified in the sample literature were dated from 2018 to 2024. We have jotted down the findings in an Excel Form with the following headers: Author reference, citation, and major findings.

Primary data is data that is collected first-hand by the researcher. This was sought in the second stage of the study, when the survey instrument was ready for circulation. The questionnaire was uploaded to Google Forms. There were no interviews conducted by phone or at any physical location. Each of the 444 respondents were contacted personally through email, WhatsApp, or LinkedIn.

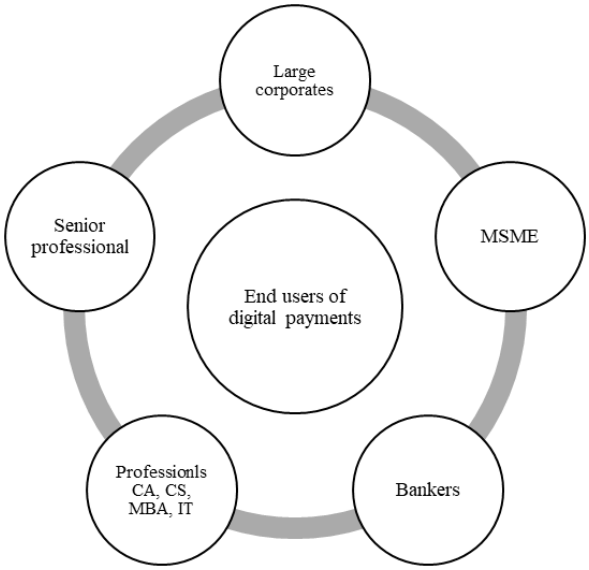
Secondary data is research data that has been formerly collected and can be retrieved by researchers. It is collected from previously done research, and existing research is summarized and collated to enhance the overall effectiveness of the research. The first stage of the study elaborates a thorough literature review, from secondary sources, discovering methodically the spare of articles published on leading international platforms including RBI office site. Around 300 articles have been read to understand the subject in depth, from which we have selected around 100 for the use of this research study, providing text citation and references in this research . The articles were collected and analyzed from

dependable sources like Google Scholar, ProQuest, Ebsco, and Academia, in that order. These articles helped classify the key research gaps through their limitations and their scope for further research. The Articles are mainly from 2018 to 2023 were considered. The literature review is a combination presence of most of these articles.

Ethical Consideration: Categorically voluntary participation, informed consent, confidentiality, anonymity, and contribution are the guidelines for research ethics consideration for this survey. A systematic scanning of each potential participant's profile was carried out to ensure the significance of the respondents. They were then briefed about the survey and the intent of the thesis. Care was taken to ensure that the individuals who filled out this survey were honest and knowledgeable (considering their qualified profiles) about the data that was being provided. All other ethical requirements are considered.

Population: The study catered to a broad population. Almost all stakeholders associated with business schools formed a part of the population.

Figure 3: Population for the survey



As depicted in Figure 3, the population for the study included large corporates, MSME entrepreneurs, professionals (such as Chartered Accountants, Company Secretaries, MBAs, IT professionals, and Bankers), and senior professionals. Corporate end users and entrepreneur stakeholders at the global level participated, regardless of location. While taking samples from the population, the author carefully considered potential contributors.

Design and Construction of the Survey Research Instrument

To obtain firsthand data for testing the conceptual model, a questionnaire was used as the research survey instrument. Research indicates that the questionnaire is a beneficial and methodical method of data collection for soliciting reliable data from the respondents. The questionnaire in this research served to collect data for both the pilot and the main study, with a common basis used in both iterations.

Pilot Study: Sample Design and Data Collection Procedure

The pilot study was the first opportunity, after the review of research literature, to conduct empirical research. It tested the basic theory proposed in the literature synthesis to ascertain the fitness of the base model and to examine if the positioning of the survey was appropriate in the designed format. Subsequently, the conclusions of the pilot study were used to update and validate the main study design.

Main Study: Sample Design, Assumptions, and Data Collection Procedure

From the broad population of the survey, which ensured the inclusion of all stakeholders of the digital payment system from all over the world, a sample size of 444 respondents was selected by simple random sampling. As elaborated and calculated, the sample size of 444 matched the requirement of adequacy for this research. Respondents were reached

through LinkedIn or by their email addresses and profiles listed in the faculty directories published on the university websites. Having accomplished respondents has been a highpoint in this research journey. The questionnaire was circulated on Google Forms, and the author describes how ethical considerations were the underlying principle of data collection. After thorough cleaning and organizing the data, the author analysed it using ADANCO 2.3.1 software for measurement and structural models, which are detailed in the data analysis section.

5.0 DATA ANALYSIS AND OUTCOME

Introduction: The previous chapter discussed the research methodology, which detailed the many techniques employed in this investigation. It detailed the research's ethics, the respondents' demographics and other details, and the survey's methodological underpinnings. It also presented the hypotheses as scientifically constructed from the research challenges and objectives and highlighted the technique and statistical tools for the pilot and major investigations.

This section focuses on the analysis and interpretation of the data. The measurement model and the structural model, which incorporates statistical testing of hypotheses, were tested to arrive at useful conclusions using ADANCO 2.3.1, a software package for variability structural equation modelling. Construct reliability, discriminant validity, convergent validity, indicator multicollinearity, validity using cross-loadings, tests and analyses of hypotheses, inter-construct correlations, and loading estimates and t-values for the determinants of all constructs are presented in tables and figures.

Measurement Model: The measurement model's task is to understand the connection between concepts and their measures. Observables are known as indicators. ADANCO 2.3.1 supports a wide range of measurement model types Dijkstra & Henseler, (2015).

Construct Reliability: It is the consistency with which a research instrument evaluates a construct over items (by measures like consistency reliability and split-half reliability) and over time (e.g. test–retest reliability). The lack of systematic errors defines reliability as the square of the correlation between the real, but typically unknown, concept and the scores on that construct. ADANCO 2.3.1 provides several indicators for each of the three build reliability quotients:

- Dijkstra–Henseler's rho (Dijkstra & Henseler, 2015)
- Composite reliability (Werts et al., 1978)
- Cronbach's alpha (Cronbach, 1951)

Table 3 displays the reliability quotients for all constructs. According to Dijkstra and Henseler (2015), a construct's rho value must be larger than 0.7 to be considered internally consistent and reliable; values of 0.8 and 0.9 are regarded as good and excellent, respectively. Any score above 0.9 is excellent (Jöreskog & Sörbom, 2006).

Table 2: Construct reliability

Construct	Dijkstra-Henseler's rho (ρ_A)	Jöreskog's rho (ρ_c)	Cronbach's alpha(α)
FT	0.6925	0.8125	0.6934
CB	0.7019	0.8183	0.7026
TS	0.6927	0.8130	0.6917
ER	0.7168	0.8253	0.7136
OM	0.7274	0.8278	0.7205

Considering the above norms for all three tests, i.e. Dijkstra–Henseler's rho (ρA), Jöreskog's rho (ρc), and Cronbach's alpha(α), it is confirmed that the reliability levels of this study are generally good or excellent.

As per Table 2, all five constructs have a Dijkstra–Henseler's rho close to or above 0.7, which represents that the reliability of the constructs is good. All constructs have a Dijkstra–Henseler's rho (ρA) score above 0.6925. All five constructs have a Jöreskog's rho (ρc) score above 0.8. The reliability of the constructs as per Jöreskog's rho (ρc) is good. All the Cronbach's alpha(α) values are close to or above 0.69 and above, indicating good reliability. The minimum

acceptable value of Cronbach alpha is 0.6, and it is considered highly reliable above 0.70 (Taber, 2018).

Validity measures how well a measurement tool measures a construct (Hair et al., 2011). A reliable measure is not automatically valid. However, a measure cannot be valid if it is not reliable. The abovementioned tests established the structures' reliability. The validity of the instrument is examined in this section. Validity can be evaluated in various ways. This section will consider three methods of validating the scale: convergent validity, discriminant validity, and cross-loadings.

Convergent Validity: As a parameter, convergent validity ascertains the degree to which two measures of constructs that should theoretically be related are in fact related (Campbell & Fiske, 1959).

Average variance extracted (AVE) figures have been analysed to test the convergent validity of the model. AVE measures the amount of variance explained by an unobserved construct in relation to the variance due to random measurement error. The satisfactory threshold for this measurement is 0.5 (Hair et al., 2011). Therefore, a construct with an AVE value greater than 0.5 can be safely assumed to explain a substantial proportion of the variance in the model.

Table 3: Construct Average Variance Extracted

Construct	Average variance extracted (AVE)
FT	0.5208
CB	0.5309
TS	0.5221
ER	0.5446
OM	0.5478

In Table 3, the AVE values for all model components are provided. The results falling in the range of 0.5208–0.5478 demonstrate the presence of convergent validity in the model. It is also possible to observe convergent validity by determining whether the maximum likelihood loading of each indicator is meaningful to its underlying latent (Anderson & Gerbing, 1988; Peter, 1981). The convergent validity also proved with the help of adequacy of loadings on its respective constructs.

Discriminant Validity: Discriminant validity ascertains the degree to which constructs that should theoretically be unrelated are, in fact, unrelated (Campbell & Fiske, 1959). It means that two conceptually different constructs must also differ statistically. ADANCO 2.3.1 offers the Fornell–Larker criterion (Fornell & Larcker, 1981) as an approach to measure the discriminant validity of reflective measures. It suggests that a construct's AVE should be greater than its squared correlations with all other constructs in the model. Table 6, as generated by ADANCO 2.3.1, shows the AVE on its main diagonal and the squared inter-construct correlations in the lower triangle.

Table 4: Fornell and Larcker's Discriminant Validity

Construct	FT	CB	TS	ER	OM	
FT	0.5208					
CB	0.3953	0.5309				
TS	0.3839	0.3824	0.5221			
ER	0.4022	0.4606	0.4200	0.5446		
OM	0.4042	0.4110	0.3993	0.4860	0.5478	
Squared correlations; AVE in the diagonal.						

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If the maximum absolute value from each column and row is located in the central diagonal, then the discriminant validity of the data is said to have been established. This necessitates that the AVE of the diagonal is higher than the average value of the non-diagonal rows and columns (squared correlations). Thus, this model has discriminant validity.

The discriminant validity also proved by verifying the cross loadings (No cross **loadings were observed).**

Indicator Multicollinearity: As the VIF values for all constructs are within the tolerance limit of 5, hence the test confirms that multicollinearity does not exist in the model.

Structural Equation Model:

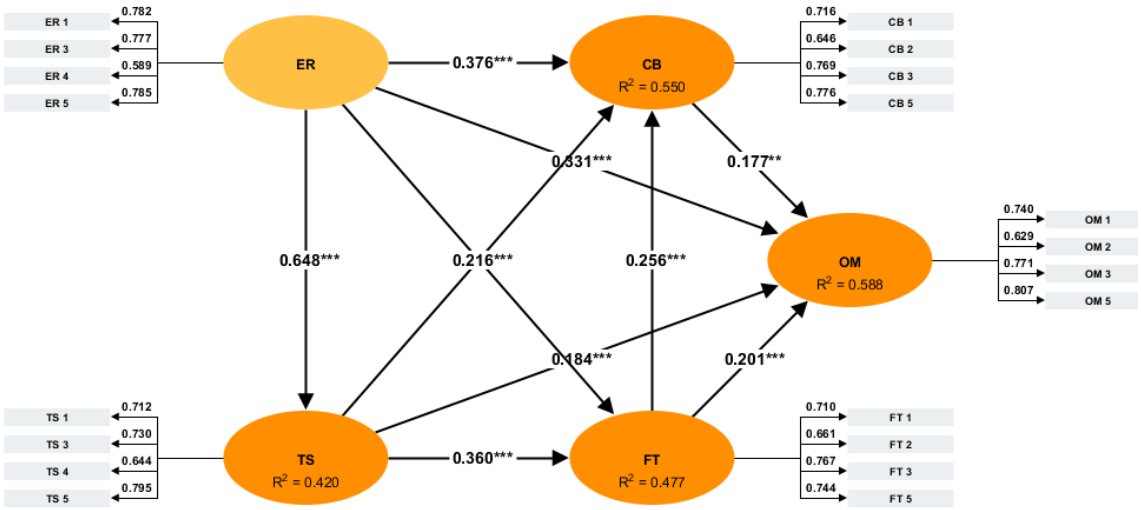
The structural model includes exogenous and endogenous constructs and the connections between them. The values of the external constructions are considered to be provided from sources external to the model. Therefore, no arrows in the structural model point to the external constructs because they are not described by the other constructs in the model.

In contrast, the endogenous constructs can be explained by the model's other components. At least one directional arrow in the structural model must point to each endogenous component. Ovals stand for structures, and arrows stand for connections in the model graph. In most cases, a linear correlation is assumed between the various elements.

In scientific endeavours like empirical research, the extent and significance of path correlations are typically emphasised because all residuals are considered uncorrelated, and the structural model built follows ADANCO 2.3.1, which mandates recursion. Multiple autonomous parts with distinct construct names make up the structural models. Empirical research presented in Figure 4 displays the structural model derived from path coefficients using ADANCO 2.3.1.

Figure 4. shows the structural model using path coefficients brought out by ADANCO 2.3.1 for this empirical research.

Figure 4: Structural Equation Model



Note: FT = funds transfer, CB = customer benefit, TS = Transaction safety, ER = External regulator, OM = Impact of External Regulation in ePayment system

Coefficient of Determination: Figure 4 shows the structural model with path coefficients in action. Big data adoption in the chemical industry is the dependent variable. The coefficient of determination (R2) value of 0.638 indicates that 63.8% of the variability in this latent variable is explained by the factors included in this model. This value is quite significant for a model based on PLS regression (Henseler &Fassott, 2010).

Summary of Hypothesis Testing

The structural equation model generated and analysed 15 cause-and-effect relationships, out of which five direct effects

and ten indirect effects.

Table 5: Direct Effects for testing five direct hypothesis

Effect	Original coefficient	Standard error	t-value	p-value (2-sided)	supported
FT -> OM	0.2013	0.0445	4.5197	0.0000	Yes
CB -> OM	0.1765	0.0556	3.1767	0.0015	Yes
TS -> OM	0.1838	0.0554	3.3191	0.0009	Yes
ER -> OM	0.3306	0.0554	5.9688	0.0000	Yes

Note: FT = funds transfer, CB = customer benefit, TS = transaction safety, ER = External regulator, OM = Impact of External Regulation in ePayment system

Based on the β-value, t-value, and p-value in the above table, four independent variables: funds transfer, customer benefits, and external regulator, show a robust, positive, and strong relationship with the Impact of External Regulation in ePayment systems. At the same time, based on the β-value, t-value, and p-value, it is clear that transaction safety is not directly impacting the Impact of External Regulation in ePayment systems, but TS is impacting the Impact of External Regulation in ePayment systems through mediating factors (details shown in the next section).

Based on the findings presented in this thesis and gaps identified in the literature survey, these four areas require more focus to advance the Impact of External Regulation in ePayment systems. The literature survey indicates that advancements in these four variables are essential, with the support of policymakers and the government, to improve the Impact of External Regulation in ePayment systems.

The other identified variable, transaction safety, indirectly affects the Impact of External Regulation in ePayment systems through customer benefits as well as through funds transfer. Refer to the mediating effect tables and sections pertaining to transaction safety.

Table 6: Indirect/Mediating effects

Indirect/Mediating effects					
S.No	Indirect effects	Coefficient value	t-value	p-value (2-sided)	Status of mediating effect
1	FT ->OM through CB	0.0453	2.668	0.0077	Significant
2	TS -> OM through FT	0.0723	3.7134	0.0000	Significant
3	TS -> OM through CB	0.0380	2.5887	0.0096	Significant
4	ER -> OM through FT	0.0800	3.6447	0.0000	Significant
5	ER -> OMthrough CB	0.0663	2.8847	0.0039	Significant
6	ER -> OM through TS	0.1191	3.093	0.0023	Significant

The outcomes show a mediating effect between independent variables and Impact of External Regulation in ePayment. Even though no significant effect was observed in direct

relation between transaction safety and Impact of External Regulation in ePayment, the results strengthened through mediating effect of customer benefits as well as funds transfer.

Details of mediating effects are as follows:

1. Funds transfer is significantly mediated by customer benefits to impact Impact of External Regulation in ePayment system. (FT ->OM through CB, β=0.0453, t=2.668, p=0.0077).
2. Transaction safety is significantly mediated by funds transfers to impact Impact of External Regulation in ePayment system. (TS -> OM through FT, β=0.0723, t=3.7134, p=0.0000).
3. Transaction safety is significantly mediated by customer benefits to impact Impact of External Regulation in ePayment system. (TS -> OM through CB,β=0.0380, t=2.5887, p=0.0096).
4. External regulator is significantly mediated by funds transfer to impact Impact of External Regulation in ePayment system. (ER -> OM through FT, β=0.0800, t=3.6447, p=0.0000).
5. External regulator is significantly mediated by customer benefits to impact Impact of External Regulation in ePayment system. (ER -> OM through CB, β= 0.0663, t=2.8847,p=0.0039).
6. External regulator is mediated significantlyby transaction safety to impact Impact of External Regulation in ePayment system (ER -> OM Through TS,β=0.1191, t=3.093, p=0.0023).

Conclusion

The Statistics offered in this chapter used the findings provided by ADANCO 2.3.1. The reliability of the constructs; their convergent and discriminant validity, multicollinearity, inter-construct correlations; and the structural equation model displaying path coefficients were verified to regulate whether the hypotheses remainedright. A total of ten hypotheses were tested for four direct effects &six indirect effects and its proved that every identified factors is significantly impacting the Impact of External Regulation in Digital Payment system either directly or indirectly. All aspects of the validation study, including its findings, results, and submissions forimpact External Regulators in Digital Payments, are thoroughly separated. The limitations of the study also listed below.

6.0 CONCLUSIONS ON RESEARCH QUESTIONS AND OBJECTIVES

The research questions that were raised at the beginning of the thesis were answered by testing and assessing 10 direct and indirect relationships in the form of hypotheses. These hypotheses were generated to provide statistical answers to the research problems raised, and they were tested and explained in earlier sections.

Funds Transfer: To recognize the relationship between funds transfer and the Impact of External Regulation in ePayment, several researches focus on the fact that customers transfer funds or pay bills digitally, which impacts the Impact of External Regulation in the ePayment system. The main study bore testimony to this, reaffirming the significant influence of funds transfer on the Impact of External Regulation in the ePayment system.

Customers Benefit: To comprehend the relationship between customer benefits and the Impact of External Regulation in ePayment, a number of transactions can be performed simultaneously, neatly, tidily, accurately, and with increased productivity. This study moved a step ahead and empirically tested and concluded that customer benefits impact the Impact of External Regulation in the ePayment system.

Transaction Safety: To evaluate the relationship between transaction safety and the Impact of External Regulation in ePayment, Alhammadi, and et al (2020) found that a competitive environment has to be maintained by the banks and online transaction facility providers to continue innovation to foster new services and products to reduce costs of transactions for customers and businesses. This study moved a step ahead and empirically tested and concluded that transaction safety impacts the Impact of External Regulation in the ePayment system.

External Regulator: To measure the relationship between the external regulator and the Impact of External Regulation in ePayment, the earlier literature measures the relationship between the external regulator and the Impact of External Regulation in ePayment system as follows: In accordance with the fast-changing technology scenario, the department of information technology (DIT), in its immediate reply to extraordinary challenges due to the pandemic epidemic scenario, adopted a practical approach by leveraging technology (RBI Annual Report 2020-2021). Though it has got such benefits, the end-users had several issues related to regulatory norms, network issues, secrecy, safety, security, trust, confidentiality, frauds. This study moved a step ahead and empirically tested and concluded that the external regulator

impacts the Impact of External Regulation in the ePayment system.

Measures and outcomes of Impact of External Regulation in ePayment system: The literature review helped identify the five outcome measures as benefits of digital payment system, namely, financial planning, increasing revenue, guaranteeing of trust and security, compliances, and conscious knowledge on products. But the analysis clearly shows that all the outcome measures significantly measure Impact of External Regulation in ePayment system except compliances (Cebeci et al., 2019).

7.0 LIMITATION AND SCOPE OF FUTURE RESEARCHES

Like any other research work, this thesis too had its own limitations. First, the scope of the study was not restricted by geography, and different countries and continents are at varied stages of access to digitisation and digital payment system acceptance.

Second, the secondary data for the literature review considered articles only with research gaps, i.e., research limitations and scope for future research. This could mean not incorporating a few relevant and recent articles, despite technology evolving and getting outmoded every day. Furthermore, there may have been a chance of exclusion of some relevant literature that was written in languages other than English. This could perhaps lead to involuntary exclusion of some variables.

Industry expectations were concluded to have an insignificant relationship with customer acceptance of digital payment system. Though literature has traces of the expectations industry has from digitalisation in banking sector, this research emerged with contradicting results. Research can help to bridge the gap and bring about a more complete digital transformation.

Digital integration is never an all-or-none philosophy; it is an evolving target, and thus there are changing levels of integration practices. Researchers from academia and business could emphasise collecting data to create a universal scale that correlates the application of technology integration and the subsequent levels of improved student learning.

7.1 Contribution to Theory

One of the research objectives was to examine whether the findings of this thesis compare with the findings of Rogers' theory of diffusion of innovations.

This thesis empirically tests the long-held assumption that diffusion of innovations adoption rates is normally distributed. This research contributes to the underpinning parent theory – Rogers' theory of diffusion of innovations. As explained in section in 2.10, Rogers' theory of diffusion of innovations has five categories of adopters: innovators (2.5%), early adopters (13.5%), early majority (34%), late majority (34%), and laggards (16%).

This survey by Rogers' can be considered for future research comparing different levels innovation diffusion.

Rogers' theory findings

Rogers' theory	Innovators	Early adopters	Early Majority	Late majority	Laggards
	2.5%	13.5%	34%	34%	16%

This is a distinctive contribution to theory, because the trends of technology adoption have changed since 2003. The digital era is having an impact on all actors: organisations, officials, boards, and policymakers, as well as learners and recruiters. No individual and no institution in banking can evade the disruptive changes that technology has brought about. The stakeholders are left with almost no choice but to embrace and adopt drastic new approaches to various digital practices that would have been considered unthinkable for most institutions, even ten years ago.

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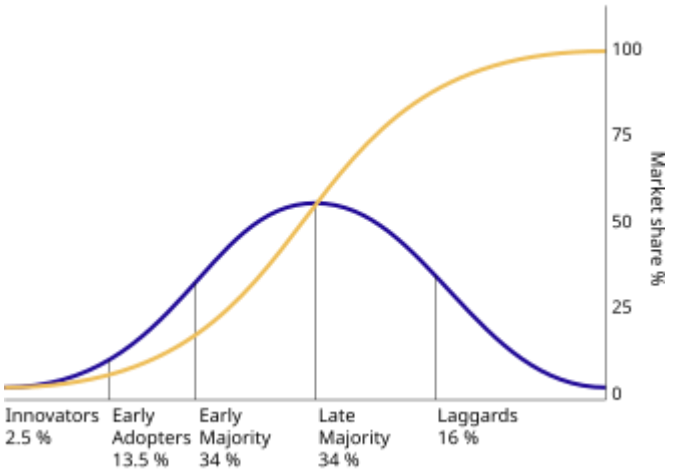
Figure 5.1 :Presentation of Rogers theory



Ryan and Gross first identified adoption as a process in 1943. Rogers' five stages (steps): awareness, interest, evaluation, trial, and adoption are integral to this theory. An individual might reject an innovation at any time during or after the adoption process.

Rogers' theory of diffusion of innovations was explained in section 2.3 of this thesis. Rogers identified five categories of adopters: innovators (2.5%), early adopters (13.5%), early majority (34%), later majority (34%), and laggard (16%). This study introduced an additional category.

7.2 Contribution to Practice

Research Contributions: The research investigated the specific problem of Impact of External Regulation in ePayment system and evaluated the validity of a proposed model. Thus, the research has made significant contributions to the banking sector. The contributions to practice have been made by the research findings and discussions, and from the perspective of research experience.

Contribution to Practice: After data analysis and interpretation, the following strong recommendations are provided to the various stakeholders of digital payment system for successful implementation of digitisation of payments in banking industry:

- Educating the various stakeholders of the banking operation on the different digital transfer systems like Real Time Gross Settlement (RTGS), Immediate Payment Service (IMPS), Google Pay, Paytm, National Electronic Funds Transfer (NEFT), Plastic cards etc., will ease the users to get acquainted and speed up the digital transaction system which leads to business growth.
- Providing adequate training to all the stake holders based on the requirement on various applications of funds transfer methods will speed up the adoption of digital payment system which again ensures competitiveness.
- Awareness to stakeholders on technology can allow people to use technology more safely, as it can pose a risk to mental and psychological health. It helps stakeholders to understand technology better and self-interest to know the technology development is essential for personal growth and development which further enhance the business in which they work.
- Digital payment methods have the advantage of cost effective and time saving and less expensive to the business. By incorporating electronic payment methods in every business, one can realize saving on every invoice. Digital payment platforms have increased speed of transactions with time saving and cost reduction in transactions.
- Entrepreneurs adjust rapidly to their introduction, quickly saving time on fund transfers with competence and comfort while appropriately designed, convenient, and efficient systems. Bank to bank transfer times can vary across financial institutions depending on the type of transfer make.

- The self-controlled transaction are various modes of digital payments, including Unified Payments Interface (UPI), NEFT, Aadhaar Enabled Payment System (AEPS), mobile wallets, and Point of Sale (PoS) terminals. UPI is the most preferred mode, having crossed the milestone of $1 trillion in the value of transactions.
- There are various modes of digital payments, including UPI, NEFT, AEPS, mobile wallets, and PoS terminals.
- UPI is the most preferred mode, having crossed the milestone of $1 trillion in the value of transactions. Those who preferred to use the digital payment system enjoy the safe, secured and timely settlement of payments instantaneously.
- The digital wallets help to eliminate need to carry the physical wallet. They are highly convenient. Also, a better managing is possible as there is management of data from several platforms like bank accounts, credit and debit cards, mobile accounts and billing portals. The different type of data pooled under one roof are all liability side of the end user as well as the asset side of the accounts of the end user.
- Customers who are ethically exposed view that company is different from others and feel secured to deal with again without any hesitations; most of the time these satisfied customers work as a free brand ambassador though word of mouth because customers believe customers more.

Holistic approach to aid users in implementing Impact of External Regulation in ePayment system: Impact of External Regulation in ePayment System is a multifaceted, elaborate and compound process. It needs synchronised efforts from several teams and stakeholders to attract users. Although people think a certain technology will benefit them, they may also think it could cause some challenges for them (Cebeci et al., 2019). Hence, a holistic approach is needed to aid users in implementing a new technology such as Impact of External Regulation in ePayment system.

This holistic approach could include the following: Educating users about the benefits and challenges of Impact of External Regulation in ePayment system.

- Providing training and support to users in implementing Impact of External Regulation in ePayment system.
- Developing user-friendly and accessible Impact of External Regulation in ePayment system solutions.
- Working with stakeholders to create a supportive environment for the adoption of Impact of External Regulation in ePayment system.

By taking a holistic approach, we can help users to overcome the challenges of implementing Impact of External Regulation in ePayment system and reap the benefits of this important technology.

8.0 LIMITATIONS AND SCOPE FOR FUTURE RESEARCH

Like any other research work, this thesis too had its own limitations. First, the scope of the study was not restricted by geography, and different countries and continents are at varied stages of access to digitisation and digital payment system acceptance (Cebeci et al., 2019).

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Industry expectations were concluded to have an insignificant relationship with Impact of External Regulation in ePayment system. Though literature has traces of the expectations industry has from digitalisation in banking sector, this research emerged with contradicting results. Research can help to bridge the gap and bring about a more complete digital transformation.

Future research directions: Digital integration is never an all-or-none philosophy; it is an evolving target, and thus there are changing levels of integration practices. Researchers from academia and business could emphasise collecting data to create a universal scale that correlates the application of technology integration and the subsequent levels of improved student learning.

9.0 CONCLUSION:

This study concludes that it briefly explained the content proceeding on to details of the conclusions. The research had four objectives pertaining to the four independent variables: funds transfer (FT), customer benefits (CB), transaction safety (TS), and external regulator (ER), (Cebeci et al., 2019). The influence of each variable was tested on the adoption of impact of External Regulator in ePayments, which was the dependent variable and the measure of research outcomes. The dependent variable was determined by the four benefits of Impact of External Regulation in ePayment system which were: financial planning, increased revenue, guaranteeing of trust and security, and conscious of having knowledge about the various consumer product.

Despite its limitations, this article provides valuable insights into the Impact of External Regulation in ePayment system. The findings can help stakeholders in the banking sector to make informed decisions about the adoption and implementation of ePayment systems. Further research is needed to explore the relationship between Industry expectations and Impact of External Regulation in ePayment system, as well as to develop a universal scale to measure the level of digital integration.

REFERENCES - (American Psychological Association (APA) (STYLE)

1. Ab Hamid, N. R., & Cheng, A. Y. (2020). A risk perception analysis on the use of electronic payment systems by young adults. order, 6(8.4), 6-7.
2. Alhammadi, Ameena Abdulrahman, and Muhammad Usman Tariq. "The Impact of Quality E-paymentSystem on Customer Satisfaction." Journal of Critical Reviews 7, no. 15 (2020): 5438-5447. (7)
3. Ali, M. A., Hussin, N., & Abed, I. A. (2019). Electronic payment systems: Architecture, elements, challenges and security concepts: An overview. Journal of Computational and Theoretical Nanoscience, 16(11), 4826-4838.
4. Ali, B. J., & Anwar, G. (2021). Factors Influencing the Citizens' Acceptance of Electronic Government. International Journal of Engineering, Business, and Management (IJEBM), 5.
5. AL-Maaitah, T., Osman, A., Suberi, M., AL-Maaitah, D., & AL-Dhmour, F. (2015). AL-Maaitah, T., Osman, A., Suberi, M., AL-Maaitah, D., & AL-Dhmour, F. (2015). Review study on the security of electronic payment systems. International Journal of Economics, Commerce and Management, 3(9), 821-829.
6. Alzoubi, H., Alshurideh, M., Kurdi, B. A., Alhyasat, K., & Ghazal, T. (2022). The effect of e-payment and online shopping on sales growth: Evidence from banking industry. International Journal of Data and Network Science, 6(4), 1369-1380
7. AMSALU, F. (2021). A Study of e-payment System Challenges and Benefits in Commercial Banks of Ethiopia (in case of selected district of addisababa) (Doctoral Dissertation, St. Mary's University).
8. Anvarovich, N. E. (2024). Navigating the Digital Horizon: Unlocking Innovative Frontiers in Remote Banking Services. Journal of Business Innovation and Accounting Research, 1(1), 25-34.
9. Ardiansah, M., Chariri, A., Rahardja, S., &Udin, U. (2020). The effect of electronic payments security on e-commerce consumer perception: An extended model of technology acceptance. Management Science Letters, 10(7), 1473-1480.
10. Barik, R., & Sharma, P. (2019).Analyzing the progress and prospects of financial inclusion in India. Journal of Public Affairs, 19(4), e1948.
11. Bastari, A., Eliyana, A., Syabarrudin, A., Arief, Z., &Emur, A. P. (2020). Digitalization in banking sector: the role of intrinsic motivation. Heliyon, 6(12).
12. Berhe, T., Seifu, E., Ipsen, R., Kurtu, M. Y., & Hansen, E. B. (2017). Processing challenges and opportunities of camel dairy products. International journal of food science, 2017.
13. Bennett, C. J., & Raab, C. D. (2020). Revisiting the governance of privacy: Contemporary policy instruments in global perspective. Regulation & Governance, 14(3), 447-464.

14. Bonnamy, C., &Perarnaud, C. (2024). Introduction. EU Digital Policies and Politics. Politique européenne, 81(3), 8-27.
15. Bhatt, S. (2020). Digitalization of rural india: Digital village. VISION: Journal of Indian Taxation, 7(1), 83-93.
16. Charles, G. I. N. C. Y. (2020). A Study on benefits and challenges of Digital (cashless) India. Person And The Challenges, 11(2).
17. Chaveesuk, Singha & Khalid, Bilal &Chaiyasoonthorn, Wornchanok. (2021). Digital payment system innovations: A marketing perspective on intention and actual use in the retail sector. Innovative Marketing. 17. 109-123. 10.21511/im.17(3).2021.09.
18. Chugh, P. (2021). A Study of Customers' Awareness with Respect to Mobile Banking in Hisar. International Journal of Information Movement, 5(10), 11-17.
19. Chugh, S., Vibhu, G., Kanojia, S., Kumar, V., & Pal, S. K. (2020). TO STUDY THE IMPACT OF ADVANCEMENT IN E-PAYMENT TECHNOLOGY USED IN INDIA. PalArch's Journal of Archaeology of Egypt/Egyptology, 17(6), 1617-1635.
20. Daud, I., Nurjannahe, D., Mohyi, A., Ambarwati, T., Cahyono, Y., Haryoko, A. E., ... & Jihadi, M. (2022). The effect of digital marketing, digital finance and digital payment on finance performance of indonesiansmes. International Journal of Data and Network Science, 6, 37-44.
21. Darma, G. S., &Noviana, I. P. T. (2020). Exploring Digital Marketing Strategies during the New Normal Era in Enhancing the Use of Digital Payment. Jurnal Mantik, 4(3), 2257-2262.
22. Demirgüç-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2022). The Global Findex Database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19. World Bank Publications.
23. Di Porto, F., &Zuppetta, M. (2021). Co-regulating algorithmic disclosure for digital platforms. Policy and society, 40(2), 272-293.
24. Eke, D., & Stahl, B. (2024). Ethics in the Governance of Data and Digital Technology: An Analysis of European Data Regulations and Policies. Digital Society, 3(1), 11.
25. Erkut, B. (2020). From digital government to digital governance: are we there yet?. Sustainability, 12(3), 860.
26. Flew, T., & Martin, F. R. (2022) Digital platform regulation. Global Perspectives on Internet Governance, 283.
27. Elbasir, M., Elareshi, M., Habes, M., & Aissani, R. (2020). The influence of trust, security, and reliability of multimedia payment on the adoption of EPS in Libya. Multicultural Education, 6(5).
28. Fernando, M. H. M., Jayawickrama, W. D. C., & Chathuranga, B. T. K. Factors Influencing Consumer Adoption of E-Payments: With Special Reference to Sri Lankan Electricity Bill Payers. Sustainable Management, 200.
29. Fernando, M. H. M., Jayawickrama, W. D. C., & Chathuranga, B. T. K. (2021) Factors Influencing Consumer Adoption of E-Payments: With Special Reference to Sri Lankan Electricity Bill Payers.
30. Ferrari, M. V. (2022). The platformisation of digital payments: The fabrication of consumer interest in the EU FinTech agenda. Computer Law & Security Review, 45, 105687.
31. Feyen, E., Frost, J., Gambacorta, L., Natarajan, H., & Saal, M. (2021). Fintech and the digital transformation of financial services: implications for market structure and public policy (BIS Papers, No 117).
32. Ghosh, G. (2021). Adoption of digital payment system by consumer: a review of literature. International Journal of Creative Research Thoughts, 9(2), 2320-2882
33. Hasan, A., Alenazy, A. A., Habib, S., & Husain, S. (2024). Examining the drivers and barriers to adoption of e-government services in Saudi Arabia. Journal of Innovative Digital Transformation.
34. Islam, M. A., &Aldaihani, F. M. F. (2022). Justification for adopting qualitative research method, research approaches, sampling strategy, sample size, interview method, saturation, and data analysis. Journal of

International Business and Management, 5(1), 01-11.

35. Jacinta, N., Abuya, J. O. O., & Makokha, A. N. Electronic Payment Practices and Service Delivery: A Case Study of Ng'arisha Savings and Credit Cooperative Societies in Bungoma Town, Kenya.
36. Jarašūnienė, A., Čižiūnienė, K., &Petraška, A. (2022). Sustainability Promotion by Digitalisation to Ensure the Quality of Less-Than-Truck Load Shipping. Sustainability, 14(19), 12878.
37. Kaur, J., & Singh, S. An Overview of E-Payment Systems. International Journal of Research in Engineering and Science (IJRES) ISSN (Online): 2320-9364, ISSN (Print): 2320-9356
38. Kaur, S. J., Ali, L., Hassan, M. K., & Al-Emran, M. (2021). Adoption of digital banking channels in an emerging economy: exploring the role of in-branch efforts. Journal of Financial Services Marketing, 26(2), 107-121.
39. Klapper, L. (2023). How digital payments can benefit entrepreneurs. IZA World of Labor.
40. Khan, A. G., Zahid, A. H., Hussain, M., & Riaz, U. (2019, November). Security of cryptocurrency using hardware wallet and qr code. In 2019 International Conference on Innovative Computing (ICIC) (pp. 1-10). IEEE
41. Khan, M. S., &Savitvh, J. (2022). Legal Perspective of E-Banking Fraud in India.
42. Khoa, T. T., & Kha, N. T. (2019). Reasons for customers' reluctance to use electronic payments–A study in Ho Chi Minh City. HO CHI MINH CITY OPEN UNIVERSITY JOURNAL OF SCIENCE-ECONOMICS AND BUSINESS ADMINISTRATION, 9(2), 25-43.
43. Kilay, A. L., Simamora, B. H., & Putra, D. P. (2022). The influence of e-payment and e-commerce services on supply chain performance: Implications of open innovation and solutions for the digitalization of micro, small, and medium enterprises (MSMEs) in Indonesia. Journal of Open Innovation: Technology, Market, and Complexity, 8(3), 119.
44. Law, S. W. (2024). Financial Inclusion and Virtual Bank in the Era of Digitalization: A Regulatory Case Study in Hong Kong
45. Mahanta, D., & Kalita, G. J. (2021). AWARENESS AND PERCEPTION OF MEDIUM AND SMALL RETAILERS TOWARDS CASHLESS TRANSACTIONS IN GUWAHATI. International Journal of Management, 12(2).
46. Mahesh, A., & Bhat, G. (2022). A Systematic Review and Research Agenda of Digital Payment System with reference to Unified Payment Interface. International Journal of Management, Technology and Social Sciences (IJMTS), 7(2), 679-709.
47. Martínez-Navalón, J. G., Fernández-Fernández, M., & Alberto, F. P. (2023). Does privacy and ease of use influence user trust in digital banking applications in Spain and Portugal?. International Entrepreneurship and Management Journal, 19(2), 781-803.
48. Mohamad, A., Mazinun, M. M. M. M., & Idris, S. (2022). The Influencing Factors on the Acceptance of Digital Payment Among Universiti Malaysia Kelantan Students. Journal of Entrepreneurship and Business (JEB), 10(1), 130-171.
49. Milenkova, V., &Lendzhova, V. (2021). Digital citizenship and digital literacy in the conditions of social crisis. Computers, 10(4), 40.
50. Mohammed, Z., Ibrahim, U. A., & Muritala, T. A. (2022). Effect of payments system innovations on the financial performance of commercial banks in Nigeria. Journal of Service Science and Management, 15(1), 35-53.
51. Mousa, A. H., Mousa, S. H., Aljshamee, M., & Nasir, I. S. (2021). Determinants of customer acceptance of e-banking in Iraq using technology acceptance model. Telkomnika, 19(2), 421-431.

52. Muoghalu, A. I., Okonkwo, J. J., &Ananwude, A. (2018). Effect of electronic banking-related fraud on deposit money banks financial performance in Nigeria. Discovery, 54(276), 496-503.

53. Nouri, A., Khadem, S., Mutule, A., Papadimitriou, C., Stanev, R., Cabiati, M., ... & Carroll, P. (2022). Identification of gaps and barriers in regulations, standards, and network codes to energy citizen participation in the energy transition. Energies, 15(3), 856.

54. Nugraha, N. M., Johanes, S. R., &Hendiarto, R. S. (2021). The effect of institutional ownership, managerial ownership, and company size to dividend policy. International Journal of Trends in Accounting Research, 2(1), 87-96.

55. Pandey, S. K. (2022). A Study on Digital Payments System & Consumer Perception: An Empirical Survey. Journal of Positive School Psychology, 6(3), 10121-10131

56. Patil, P., Tamilmani, K., Rana, N. P., & Raghavan, V. (2020). Understanding consumer adoption of mobile payment in India: Extending Meta-UTAUT model with personal innovativeness, anxiety, trust, and grievance redressal. International Journal of Information Management, 54, 102144.

57. Patil, P. P., Rana, N. P., & Dwivedi, Y. K. (2018, October). Digital payments adoption research: a review of factors influencing consumer's attitude, intention, and usage. In Conference on e-Business, e-Services and e-Society (pp. 45-52). Springer, Cham.

58. Pearson, N., Naylor, P. J., Ashe, M. C., Fernandez, M., Yoong, S. L., & Wolfenden, L. (2020). Guidance for conducting feasibility and pilot studies for implementation trials. Pilot and feasibility studies, 6, 1-12.

59. Prete, A. L. (2022). Digital and financial literacy as determinants of digital payments and personal finance. Economics Letters, 213, 110378

60. Purwandari, B., Suriazdin, S. A., Hidayanto, A. N., Setiawan, S., Phusavat, K., &Maulida, M. (2022). Factors affecting switching intention from cash on delivery to e-payment services in C2C E-commerce transactions: COVID-19, transaction, and technology perspectives. Emerging Science Journal, 6(Special Issue), 136-150.

61. Rangaswamy, A., Moch, N., Felten, C., van Bruggen, G., Wieringa, J. E., & Wirtz, J. (2020). The role of marketing in digital business platforms. Journal of Interactive Marketing, 51, 72-90.

62. Rahayu, R., Ali, S., Aulia, A., & Hidayah, R. (2022). The current digital financial literacy and financial behavior in Indonesian millennial generation. Journal of Accounting and Investment, 23(1), 78-94.

63. Rahi, S., Alghizzawi, M., & Ngah, A. H. (2022). Factors influence user's intention to continue use of e-banking during COVID-19 pandemic: the nexus between self-determination and expectation confirmation model. EuroMed Journal of Business

64. Raisagar, V. (2024). UPI: Revolutionizing the digital payment system in India: A critical review.

65. Rajesh, G., Hajee Abdul, R. H., Anitha, S., &Kamaruniza, A. (2022). A study on adoption of electronic payment system and its impact on customer satisfaction in Chennai City. Annals of Forest Research, 65(1), 1606-1616.

66. Ramli, Y. (2020). Adopting Digital Payment based on the Features and Benefits provided by the Application. European Journal of Business and Management Research, 5(3).

67. Ranjith, P. V., Kulkarni, S., & Varma, A. J. (2021). A Literature Study Of Consumer Perception Towards Digital Payment Mode In India. PSYCHOLOGY AND EDUCATION, 58(1), 3304-3319.

68. Reitz, C. (2023). A Natural Philosopher in Solidarity with the Oppressed: Savita Singh's Interview with Roy Bhaskar: A review discussion on Savita Singh, Roy Bhaskar, and

69. Mahesh, A. (2021). Digital Payment Service in India-A Case Study of Unified Payment Interface. International Journal of Case Studies in Business, IT and Education (IJCSBE), 5(1), 256-265.

70. Mervyn Hartwig. Reality and Its Depths: A Conversation Between Savita Singh and Roy Bhaskar (Singapore: Springer, 2020)—ISBN 9789811542138, 244 pp. Sophia, 62(1), 201-206.

71. Reserve Bank of India, India – Annual Report 2020-2021 Table IX.1.

72. Rönkkö, M., Lee, N., Evermann, J., McIntosh, C., & Antonakis, J. (2023). Rejoinder: fractures in the edifice of PLS. European Journal of Marketing, 57(6), 1626-1640.

73. Sahin, I. (2006). Detailed review of Rogers' diffusion of innovations theory and educational technology-related studies based on Rogers' theory. Turkish Online Journal of Educational Technology-TOJET, 5(2), 14-23.

74. Sahi, A. M., Khalid, H., & Abbas, A. F. (2021). DIGITAL PAYMENT ADOPTION: A REVIEW (2015-2020). Journal of Management Information & Decision Sciences, 24(7).

75. Sahi, A. M., Khalid, H., Abbas, A. F., Zedan, K., Khatib, S. F., & Al Amosh, H. (2022, April). The research trend of security and privacy in digital payment. In informatics (Vol. 9, No. 2, p. 32). MDPI.

76. Sahi, A. M., Khalid, H., Abbas, A. F., & Khatib, S. F. (2021). The Evolving Research of Customer Adoption of Digital Payment: Learning from Content and Statistical Analysis of the Literature. Journal of Open Innovation: Technology, Market, and Complexity, 7(4), 230

77. Saju Shaha, Kazi Md. Yusuf (2020), Digital Ethics, A Pavement to Customer Acceptance: An Exploratory Study on E-commerce Industry of Bangladesh, The Jahangirnagar Journal of Marketing ISSN: 2308-6238 Vol 8, June 2020

78. Saputera, D., Ichsani, S., Wijaya, J. H., &Hendiarto, R. S. (2021). Development of Small and Medium Micro Business: A Geographical Outlook on West Java Province, Indonesia. Geogr. Educ, 11(1), 712-719.

79. Sasongko, D. T., Handayani, P. W., & Satria, R. (2022). Analysis of factors affecting continuance use intention of the electronic money application in Indonesia. Procedia Computer Science, 197, 42-50.

80. Saxena, A., & Tripathi, D. S. N. (2021). Exploring the security risks and safety measures of mobile payments in the fintech environment in India. International Journal of Management, 12(2).

81. Schuberth, F., Rademaker, M. E., & Henseler, J. (2023). Assessing the overall fit of composite models estimated by partial least squares path modeling. European Journal of Marketing, 57(6), 1678-1702.Shah, M. (2012). The importance and benefits of teacher collegiality in schools–A literature review. Procedia-Social and Behavioral Sciences, 46, 1242-1246.

82. Siby, K. M. (2021). A study on consumer perception of digital payment methods in times of covid pandemic. International Journal of Scientific Research in Engineering and Management, 5(3), 1-12Sutrisno, S., Cakranegara, P. A., Asri, F., Yusuf, M., & Sahala, J. (2022). STRATEGY FOR MSME DEVELOPMENT USING FINANCIAL TECHNOLOGY TO INCREASE CAPITAL AND CONSUMERS. Jurnal Darma Agung, 30(2), 677-686

83. Singh, S., & Rana, R. (2017). Study of consumer perception of digital payment mode. Journal of Internet Banking and Commerce, 22(3), 1-14.

84. Snow, J. C., Gomez, M. A., & Compton, M. T. (2023). Human memory for real-world solid objects is not predicted by responses to image displays. Journal of Experimental Psychology: General.

85. Solomon, E. M., & van Klyton, A. (2020). The impact of digital technology usage on economic growth in Africa. Utilities Policy, 67, 101104

86. Spagnolli, A., Masotina, M., Scarcia, A., Zuffi, B., & Gamberini, L. (2022, April). How to get away with cyberattacks: An argumentative approach to cyberattacks' legitimization by common users. In Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems (pp. 1-12).

87. Sutikno, S., Nursaman, N., &Muliyat, M. (2022). The role of digital banking in taking the opportunities and challenges of Sharia banks in the digital era. Journal of Management Science (JMAS), 5(1), 27-30.

88. Tien, N. H., Anh, N., Dung, H., On, P., Anh, V., Dat, N., & Tam, B. (2021). Factors impacting customer satisfaction at Vietcombank in Vietnam. Himal. J. Econ. Bus. Manag, 2, 44-51.

89. Tilley, K. (2023). Digitisation VS Digitalisation.

90. Upadhayaya, A. (2012). Electronic Commerce and E-wallet. International Journal of Recent Research and Review, 1(1), 37-41.

91. Vally, K. S., & Divya, K. H. (2018). A study on digital payments in India with the perspective of consumer adoption. International journal of pure and applied mathematics, 119(15), 1259-1267.

92. Vinitha, K., & Vasantha, S. (2017). Factors Influencing Consumer's Intention to Adopt Digital Payment-Conceptual Model. Indian Journal of Public Health Research & Development, 8(3).

93. Vinitha, K., & Vasantha, S. (2020). Determinants of Customer intention to use Digital payment system. J. Adv. Res. Dyn. Control Syst, 12, 168-174.

94. Vishnoi, Y. C., &Bishla, K. (2021). Critical Study of Unified Payment Interface (UPI): E-Payment Mode of Digital Revolution. Academic Social Research:(P) ISSN: 2456-2645, Impact Factor: 4.928 (UGC APPROVED 47715), 7(4).

95. Wang, H., & Gao, S. (2024). The future of the international financial system: The emerging CBDC network and its impact on regulation. Regulation & Governance, 18(1), 288-306.

96. Wang, D., & Li, G. (2022). The best decision for E-Commerce funds transfer based on cloud computing technique. Mathematical Problems in Engineering, 2022.

97. Yomas, J., & Kiran, C. (2018). Critical analysis of the evolution in the e-payment system, security risk, threats, and vulnerability. Communications on Applied Electronics, 7(23), 21-29.

98. YUCHA, N., SETIAWAN, S., MUTTAQIIN, N., EKASARI, R., & MAULADI, K. F. (2020). Digital payment system analysis of buying decision in Indonesia. The Journal of Asian Finance, Economics and Business (JAFEB), 7(10), 323-328.

99. Zaman, S. I., Khan, S. A., Qabool, S., & Gupta, H. (2022). How digitalization in banking improves service supply chain resilience of e-commerce sector? a technological adoption model approach. Operations Management Research, 1-27.

100. Zwitter, A., &Hazenberg, J. (2020). Decentralized network governance: blockchain technology and the future of regulation. Frontiers in Blockchain, 3, 12.