



Sri Lankan Consumers' Recommendations Of Qr Code – Enabled Payment Solutions To Create A Cashless Society: Do Moderating Variables Collaborate?

P. Chamika Hewawasam^{1*}
Adam Amril Bin Jaharadak²
Ali Khatibi³
S M Ferdous Azam⁴

^{1*}, ², ³, ⁴Postgraduate Centre (PGC), Management and Science University, Malaysia

***Corresponding Author:** - P. Chamika Hewawasam

*Postgraduate Centre (PGC), Management and Science University, Malaysia

Abstract

This study aimed to examine the willingness of Sri Lankan users to adopt mobile payment systems using Quick Response (QR) codes, given the widespread use of mobile devices in Sri Lanka. The research surveyed 457 participants and used the UTAUT2 model to determine the most significant factors influencing users' intention to use QR code payments, their perceived satisfaction with the system, and their willingness to recommend it. The study found that ease of use, perceived usefulness, and attitude towards the system had a positive impact on users' intention to use QR code payments, while perceived risk and innovation had a negative impact. It also found that stress to use and social influence had an effect on users' perceived satisfaction and willingness to recommend the system. Overall, the study provides valuable insights into the acceptance of QR code payment systems in Sri Lanka and suggests that future research could examine the acceptance of such systems among merchants in Sri Lanka.

Key words:-

QR – Quick Response Code payments,
NFC – Near Field Communication Payments,
UTAUT2 – Unified Theory of Acceptance and Use of Technology,
Recommendation to Use,
Intention,
Perceived Satisfaction,
Innovativeness,
Stress to Use,
Social Influence,

Introduction

The overall usage of QR Codes on a global scale has seen a drastic increase when compared on a year-on-year basis, with a 443% increase in scans and a 438% boost in generation for 2022 (QR Tiger, 2022). The generation of QR Codes was particularly significant during the Covid-19 pandemic period, as most transactions were switched to contactless during 2020. The global economy saw a drastic increase during the QR Code mode of payments as this was a clear indication of moving towards contactless and driving the digital usage and streamlining of daily transactions (QR Tiger, 2022). The flexible nature of QR technology has led to many innovations, and this is the key reason for the global increase in usage (QR Tiger, 2022). According to (QR Tiger, 2022) database, the top 10 countries with the highest scanning activity for the first quarter of 2022 were the USA (42.2%), India (16.1%), France (6.4%), UK (3.60%), Canada (3.60%), Saudi Arabia (3.0%), Colombia (3.0%), Malaysia (2.1%), Singapore (1.7%), and Mexico (1.6%). From the stated list of countries, four Asian countries appeared in the top 10, which is a clear indication that the usage of QR Codes is still lagging in Asian countries (QR Tiger, 2022). A

January 2022 survey by Union Pay also revealed that the widespread adoption of QR Codes for quick and convenient payments was once held up as a sign of China's progress over the West in developing a cashless society. QR Codes accounted for over 90% of China's mobile payments in 2021 (Union Pay, 2022).

With the latest developments in QR Payments, there are developments made in Malaysia, Thailand, Philippines and Indonesia to integrate their QR Payment platforms to a single payment platform, where the customers have the feasibility in purchasing goods and services throughout the region, by passing the USD need as an intermediary currency. (Deshveejit, 2022)

In local context the Central Bank of Sri Lanka introduced the mobile payments via Lanka QR Platform, a closed loop payment system, where the Central Bank mandated the implementation to all the Financial Institutions in the country. (Central Bank S. , 2020)

The payment solutions and mobile payment transactions currently take numerous forms. The latest mode of payments is "NFC" Near Field enabled communication payments and also, mobile payment solutions, such as Tap to Mobile etc. Payment schemes such as Ru -Pay from the Indian context and Lanka QR are interoperable open loop and closed loop solutions that customers can use at most of merchant locations. (Central Bank, 2020; Smith, Anderson, & Rainie, 2012)

Quick Response (QR) code payment systems.

QR codes are generated and used as a payment platform globally and in local context as well. As far as the mobile payments are concerned, in Sri Lanka the Lanka QR is used as an interoperable QR for merchant payments. There are 20 + Lanka QR Issuing Financial Issuers and Merchant Acquirers in the country. The Lanka QR payment mode is used for Bill payments, payment for Retail transaction, Web base QR payments for Online Transactions, embedded to the POS machine for POS transactions. The Lanka QR can be used for all modes of Rupee transactions. This Lanka QR can be developed for the acceptance of VISA, MasterCard, Union Pay etc payment acceptance as well as can be configured for other wallet payment modes such as Ali Pay and WeChat Pay etc. (Central Bank S. , 2020)

Even though, Lanka QR Code payment method has been launched it is still not at the full scale required for the use of in an interoperable way for the local consumer and adoption as a payment platform in Sri Lanka. Despite performing a Lanka QR transaction is more beneficial the transaction value is somewhat low, customers still prefer cash over digital payments, which they are more comfortable in using at the local small shops and groceries etc. Low awareness about the digital technology, it's benefits, minimum consumer awareness, and the usefulness can be considered as the main challenges, to the minimum usage of Lanka QR payment platform. (Central Bank of Sri Lanka, 2021)

The Central Bank of Sri Lanka has established a national standard for Quick Response (QR) codes for local currency payments, called "Lanka QR" (Central Bank of Sri Lanka, 2021). This standard provides unique specifications to promote customer convenience, security and ensure interoperability of different payment mechanisms through the payment and settlement systems circular No 06 of 2018.

This study aims to understand factors that are relevant and theoretically supportive in UTAUT2 in measuring QR Code base payment systems usage in the consumers' daily life and perceived satisfaction upon using a digital payment mode in the local Sri Lankan context. Due to the globalisation and to the increase in Internet Usage the consumers / buyers and sellers distance has been narrowed and has made the retail business expand the boundaries. This has made the business owners to sell more goods and services to locations outside their locality. (Liébana & Cabanillasa, 2017; Francisco Liébana-Cabanillas a, 2018). However, there are yet few issues that could be identified as hurdles to the intention to use QR payment services, where even in mobile payments as well, such as lack of knowledge about product usefulness and usage, privacy norms, low awareness, resistance, innovativeness, infrastructural support and interoperability issues. (Oliveira, Thomas, Baptista, & Campos, Mobile payment Understanding the determinants of customer adoption and intention to recommend the technology, 2016). It is stated that

consumers do get worried about information and data been getting hold by unauthorised parties and publicly sharing of such personal information is making the consumers nervous and not willing to share such information while performing transactions digitally. (Hossain, Quaresma, & Rahman, 2019).

The model adopted for the research has been tested for the Indian context on Mobile Wallet services by (Sinha, J., & Cabanillas', 2019) during the year 2019. The variables such as Innovativeness, Stress to use and Social Influence are introduced with the aim of verifying their influence on Perceived Satisfaction and recommendation to use QR Code Payment modes in Sri Lankan context. (Sinha, J., & Cabanillas', 2019). This study will show that the customers are driven more towards digital payments, and the customers are benefiting from QR Code driven payments while using their mobile phones. (Shaw, 2014).

Review of Literature

With the developments of technology, most of the countries are moving towards a cashless culture and society, where payments can be performed via a digital platform. The latest trends of digital payment mode such as the QR Usage have been identified as a highly used platform in China. However, in Malaysia it was noted by (Balakrishnan & Nor, 2021), that the adoption of digital payments were affected by the Risk and the Motivation of usage. Hence, it is noted to say that there is still a potential growth to be expected in driving towards an adoption of cashless society in Malaysia. Further, during the year 2016, India demonetized few of their currency notes overnight and the Reserve Bank of India withdrew certain denominations. The people of India back then totally were dependent on Currency. This made a huge impact and created problematic situations in the country (Raychaudhuri, 2017). However, this paved the way for a new era of digital payments in India. Demonetisation was the key reason for the growth in QR in India. Mobile payment industry boomed during the Covid - 19 pandemic periods. There has been numerous research made during this period. The research conducted in Thailand on digital payment systems (Singha, Bilal, & Wornchanok, 2021) derived that there is a positive relationship on Behavioural Intention by Perceived Risk. The greater the Risk the Behavioural Intention to use the digital payments increased.

Additional research conducted in Indonesia has found that there is a positive relationship between perceived usefulness and intention to use mobile payment services such as Go-Pay during the Covid-19 pandemic period (Handri & Winny, 2021). Similarly, a study in Taiwan on the adoption of mobile payments among young generations found that social influence has a positive significant impact on the intention to adopt the technology (Min-Hueih, Yu-Hsin, & Yun-Cih, 2021).

Despite the fact that there are smart mobile phone users in the rural and semi urban parts of the island, it is noticeable that the adoption of digital payments and Lanka QR payment users can be mostly identified in the urban areas only. Hence, it is clearly notable that, demographic factors such as locality, city, education level etc have an impact on the usage. (Mahabub, Kethan, & Rajasulochana, 2022).

Mobile and Digital payments acceptance and Intention to use in Kuala Lumpur, has a significant link with expected effort trustworthiness and performance. As most of the consumers / mobile application users depends mobile payment systems to be essential. (Ama, Tara, Syriac, & Tan, 2022). It is a norm that any mobile payment user is capable of making fund transfers affecting bill payments and payments affected for goods and services. However, it was observed that in Malaysia the adopted rate of mobile payments has been low. (Cao Yong, Jacqueline Tham, S.M.F.Azam, & Ali Khatibi, 2021).

(Zhongda & Yunxin, 2022), the researchers found that the UTAUT2 model was less predictive in the country where the adoption of mobile payment services is high. (i.e. China). In contrast, the UTAUT2 model was more predictive in countries where the adoption (MPS) is lower. (i.e. the United States and Belgium).

Research has shown that trust, perceived usefulness, perceived ease of use, perceived risk, and perceived security have a significant impact on consumer attitude towards mobile payment usage (Patria, Suharyanto, & Yohanes, 2022). A study conducted on college students in Malaysia also found that perceived risk and social influence were significant factors in mobile payment usage (Yong C. Jacqueline Tham, S.M.Ferdous Azam, & Ali Khatibi, 2021). Among various technologies, mobile apps for payment and procurement were found to be the most widely used. The research identified eight factors influencing technology adoption and found that customers demand for payment apps and convenience and cost savings for procurement apps were the highest. Additionally, it was identified that technology adoption managers can use to improve adoption rate (Aithal, Vikram, Harshit, Debasis, & Dev Narayan, 2022).

A research in Cambodia found that social influence had a significant effect on the behavioural intention to use mobile payment platforms (Nam Hung Do, Jacqueline Tham, S.M. Ferdous Azam, & Abdol Ali Khatibi, 2020). Similarly, research in Malaysia also found that social influence plays a significant role in consumer usage intention of mobile payment platforms (Yong, Tham, Azam, & Khatibi, 2021). However, a study conducted on the adoption of mobile banking among agri-traders in India found that social influence had no significant impact on mobile banking adoption among this community (S.R.Tikku & Singhe, 2023).

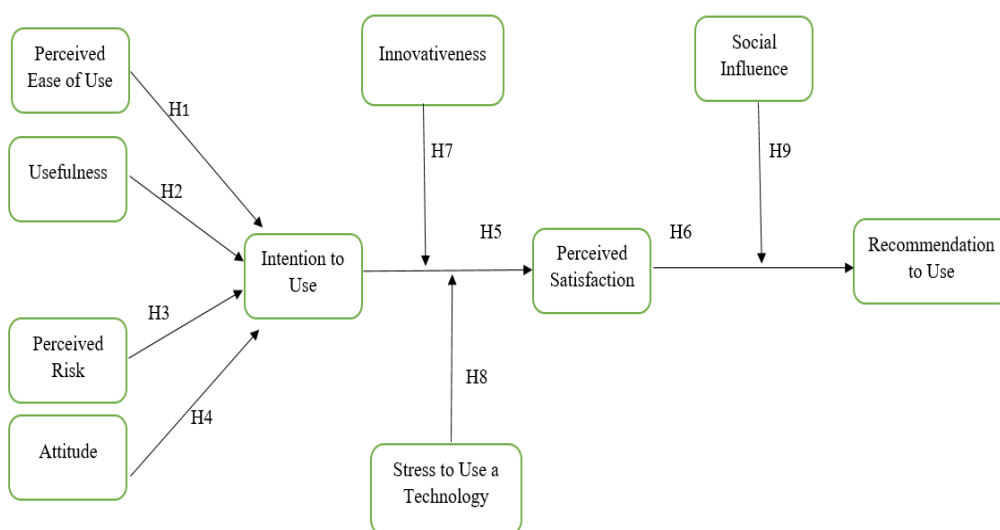
A research conducted in Malaysia found that elderly consumers who are not technologically savvy face significant barriers to using mobile payment services. These barriers include functional factors such as perceived complexity, incompatibility and cost, psychological factors such as lack of trust, inertia and technological anxiety, and risk factors such as privacy risk, security risk, financial risk and operational risk (Tat-Huei, Jun-Hwa, Boon-Liat, & Xin-Jean, 2022). As per the research, these barriers would influence the attitude and non-adoption intention of mobile payments among this demographic.

It has been further observed, that customer satisfaction had a significant effect on usage of online banking facilities of the bank. It was noted that customers who were satisfied with the banks online banking platforms would be using the banks services continuously. (Mutaz, Omar Abdeljaber, Mohd S Ab Yajid, Ali Khatibi, Jacqueline Tham. et al., 2021)

Conceptual Framework

The research would be focused on Usage of QR Code payment modes and NFC enabled payment modes by the local consumers.

Conceptual Framework



Variable	Number of Items
Perceived Ease of Use (PEOU)	7
Perceived Usefulness (PU)	5
Perceived Risk (Risk)	4
Attitude (ATTD)	6
Social Influence (SI)	5
Intention to Use (INTU)	3
Innovativeness (INNOVA)	3
Stress to use technology (STRESS)	3
Perceived Satisfaction with QR Code Base Enabled payment solutions	4
Recommendation to Use	3
	43

Methodology

Population

The population considered for the research to be account holders, people who maintain any form of banking relationships, and who are capable of performing online transaction. As data was collected by an online survey distribution, it is notable that these personal are capable of performing online transactions. The data was collected by the digitally distributed survey questionnaire. Hence it is considered that the participants were digitally savvy and is cable of performing an online transaction.

Sampling and Sampling Procedures

As these are customers having a banking relationship, the researcher will not be able to extract information or data from the banks. Overall Bank, Branch customers with accounts would be 36 Mn, (as per annual reports 2018 of the banks) defining that an individual would have opened over one account per customer. As the research is made to all local bank branches who has introduced the QR Code payment modes and NFC Enabled payment modes, the sampling size would be 384, as per (Sekaran & Bougie, Research Methods for Business A skill Building Approach, 2013)

The sampling mechanism adopted for the research to be – sample design to be Non Probability sampling and in this the mechanism Convenience Sampling.

Recruitment of Participants and Data Collection

The researcher used digital modes and digital surveys to gather data for the research. Initially the researcher engaged with the pilot study with 50 participants. The pilot study was done to study and test the validity of the data collection modes and the self-administered questionnaire. Pilot study is one of the important stages in the research. The researcher derived at the validity of the data and reliability. Subsequently, the researcher conducted the research accordingly.

The research was targeted to the entire Western Province of the Island. The total population of the province to be 5,822,508 as at 2021. (Health Department Western Province Government Population Data). The Western Province is considered the largest business and technology hub in the island. Hence, the sample obtained can be extended to the entire island. The researcher approached 1537 members in the local community, where they maintain any form of banking relationship. Out of which 457 respondents took part in the online questionnaire and forwarded the online replies to the researcher. The researcher was able to derive at the conclusions to the research made, upon analysing the data collected from this survey. The number of participants was derived upon the theoretical justifications from Krejcie and Morgan (1970) and Cohen (1969), with the simplified size decision with the table that ensures a good decision model. This table extends the population of 1 Mn to be considered a sample size of 384, where this research carries a sample size of 457 with a 15% positive variance.

Instrumentation and Operationalisation of Constructs

A structured survey questionnaire with the topic "Determining Factors in the adoption and Recommendation of QR Base enabled payment solutions by the Sri Lankan Consumer , in

creating a Cashless Society: Analysis of the effect of innovativeness, Stress, to use and Social Influence” was digitally distributed.

Component	Selection
Research Approach	Deductive Research Approach
Research Paradigm	Positivists Paradigm (There is a single reality and can be measured and known).
Method	Quantitative Method Survey
Justification of the Method	1. Comparatively less expensive 2. Survey method is useful in describing the characteristic of a large population 3. The anonymity of surveys allows respondents to answer with more accurate and valid answers
Type of Data	Primary Data
Study Population	The Banked Population of the Country
Unit of Analysis	People who maintain banking relationships
Sample Framework	Non probability sampling & Convenience Sampling
Instrument Development	Self – Administrative close ended Questionnaire
Pre – Test and item Modification	Pilot Study
Data Collection	Online Questionnaire despatched to 1537 members
Data Coding	Numeric
Statistical software for data analysis	SPSS Version 21, AMOS Version 22 and AMOS Version 25 (Indirect effect testing)

From the above stated conceptual framework below hypotheses have been formulated.

Hypotheses

Hypotheses	Relationship
H1	Perceived ease of use positively affects user’s intention to use QR code base enabled payment solutions
H2	Perceived usefulness positively influences user’s intention to use QR Code base enabled payment solutions
H3	Perceived risk positively influences user’s intention to use QR Code base enabled payment solutions
H4	Attitude towards QR Code Base enabled payment solutions has positive influence on intention to use QR Code Base enabled payment solutions
H5	The greater the user’s intention to use, the greater the perceived satisfaction with QR Code Base enabled payment solutions
H6	The greater the user’s perceived satisfaction with QR Code Base enabled payment solutions, the greater the user’s recommendation to use QR Code Base enabled payment solutions
H7	Innovativeness moderates the relationship between user’s intention and perceived satisfaction with the use of QR Code Base enabled payment solutions
H8	Stress moderates the relationship between user’s intention and perceived satisfaction with the use of QR Code Base enabled payment solutions
H9	Social influence moderates the relationship between user’s perceived satisfaction to use QR Code Base enabled payment solutions

Descriptive statistics of respondents

Survey was administered to members who have relationships with the banks or any other financial institution in the Western Province of the country. In this section the demographic profile of the members in terms of gender, age, level of education, employment / profession are documented below.

Demographics		Frequency	Percentage
Total Participants		457	
Gender	Male	365	80.50
	Female	89	19.50
Age	20-30 years	133	29.10
	31-40 years	184	40.30
	41-50 years	71	15.50
	Above 50 years	69	15.10
Level of Education	O/L	2	4
	A/L	53	11.60
	Degree	176	38.50
	Masters	216	47.30
	PhD	10	2.20
Profession	Employed	395	86.40
	Self Employed	62	13.60

Cross Tabulation Results

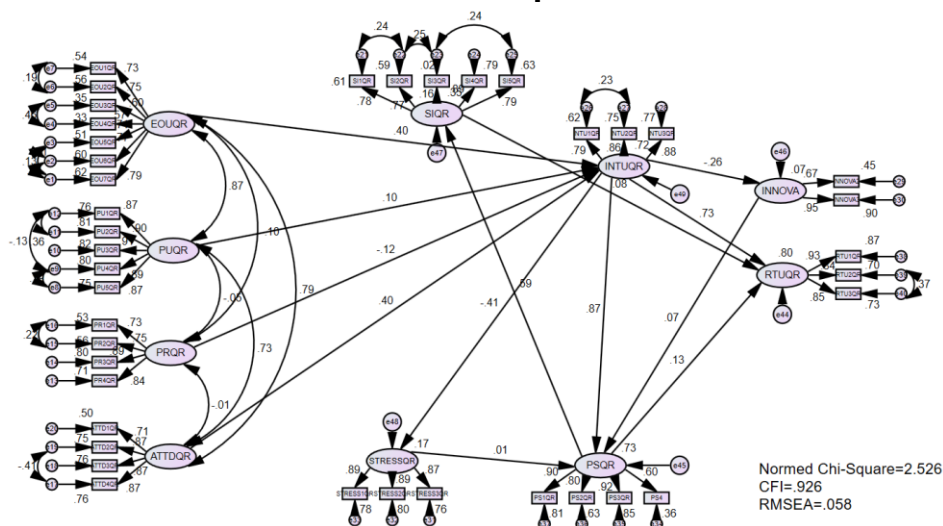
Age	Gender		Education Level					Profession	
	Male	Female	O/L	A/L	Degree	Masters	PhD	Employed	Self Employed
20-30 Y	92	41	0	17	85	31	0	120	13
31-40 Y	149	35	2	25	50	104	3	165	19
41-50 Y	63	8	0	3	24	41	3	62	9
> 50	64	5	0	8	17	40	4	48	21

Reliability Analysis

Constructs	Pilot Study (Cronbach's Alpha)	Initial Items	Final Analysis (Cronbach's Alpha)	Items Used
Perceived Ease of Use	0.814	7	0.885	7
Perceived Usefulness	0.966	5	0.951	5
Perceived Risk	0.903	4	0.885	4
Attitude	0.611	6	0.630	4
Social Influence	0.693	5	0.821	5
Intention to Use	0.945	3	0.899	3
Innovation	0.219	3	0.777	2
Stress to Use	0.861	3	0.914	3
Perceived Satisfaction	0.839	4	0.880	4
Recommendation to Use	0.914	3	0.924	3
Total		43		40

As per the above table, for all the study constructs, Cronbach's alpha coefficients were well above 0.60. In contrast, the overall, the overall alpha coefficient of Cronbach for all of the constructs was 0.924. This research proposes that the internal steadiness of each and every construct was within the acceptable ceilings.

Structural Model with Covariance for the Independent variables:



While considering the model fit indices, P - value is 0.000, where the indices is statistically significant and acceptable as ≥ 0.05 (Joreskog & Surbon, (1996). While considering the CMIN/df which reflects 2.526 on the default model is statistically significant as it is ≤ 5 , (March & Hocevar 1985), therefore which is acceptable. GFI indices reflects as 0.825 which can be considered as per previous researcher conducted on the similar studies. (Hair et al 2010). AGFI in the default model is derived as 0.797 and will not be taken in to consideration. In analysis of the Base Line Comparison, CFI which reflects 0.926 which is ≥ 0.90 , (Hu & Bentler, 1999). While analysing RMSEA of the default model which reflects 0.058, which is in the acceptable range of (.050 - 1.000), where this can be accepted as moderate acceptance. Hence, we are confident that the overall measurement model which is depicted above can be acceptable and acceptable model fit.

Further, while analysing the Regression weights of the overall measurement model P – value 0.000 is statistically significant ≥ 0.05 , and acceptable.

Therefore, we can derive that the overall structural model can be accepted for the research and can be used for further for the analysis.

Summary Result of Model Fit: Structural Model

Goodness of fit indices	Model Value (without co variance)	Model Value (after Co variance)	Threshold values for the fit indices	Remarks
Normed – Chi Square	3.749	2.526	< 5.0	The desired level is reached
CFI	0.866	0.926	>0.90	The desired level is reached
RMSEA	0.078	0.058	(0.05 - 1.000)	The desired level is reached

Therefore, having considered the overall measurement model, this is clearly notable that the model fits as per the collected data and the structural model can be constructed and can take forward for further studies.

Outcome of the Hypothesis – evaluations from Structural Model

	Estimate	S.E.	C.R.	P	Supported
INTUQR <--- EOUQR	.412	.108	3.812	***	Yes
INTUQR <--- PUQR	.095	.070	1.349	.177	No
INTUQR <--- PRQR	-.091	.028	-3.284	.001	No
INTUQR <--- ATTDQR	.334	.054	6.139	***	Yes
PSQR <--- INTUQR	.659	.056	11.813	***	Yes
RTUQR <--- PSQR	1.327	.113	11.753	***	Yes

Hypotheses 01 (H1) - Perceived ease of use positively affects user’s intention to use QR code base enabled payment solutions. The statement is perfectly acceptable as per the above stated derived results from the research analysis. Where ($\beta = 0.412$ & $p < 0.000$), which is significant and supported to the statement. Hence, Perceived Ease of Use has a direct and positive relationship over Intention to Use, the QR Payment modes in the consumers’ daily usage.

Hypotheses 02 (H2) - Perceived Usefulness positively influences user’s Intention to Use QR Code base enabled payment solutions. The statement is not acceptable as per the above stated derived results from the research analysis. Where ($\beta = 0.095$ & $p = 0.177$ where should be $p < 0.05$), hence which will be not significant and not supported to the statement. Perceived Usefulness dose not has a direct and positive relationship over Intention to Use, the QR Payment modes in the consumers’ daily usage.

Hypotheses 03 (H3) – Presumption has been that Perceived Risk positively influences user’s intention to use QR Code base enabled payment solutions. However, after analysing the data the null hypotheses (H0) became true and acceptable. Where the statistical evidence showed that ($\beta = - 0.091$ & $p < 0.001$), which is negative and can be illustrated as Perceived Risk has a negative relationship and impact on the Intention to Use the QR Payment modes in the consumers’ daily usage. In the context of this research Perceived risk positively influences user’s intention to use QR Code base enabled payment solutions has been rejected.

Hypotheses 04 (H4) - Attitude towards QR Code Base enabled payment solutions has a positive influence on intention to use QR Code Base enabled payment solutions. The statement is perfectly acceptable as per the above stated derived results from the research analysis. Where ($\beta = 0.334$ & $p < 0.000$), which is significant and supported to the statement. Attitude has a

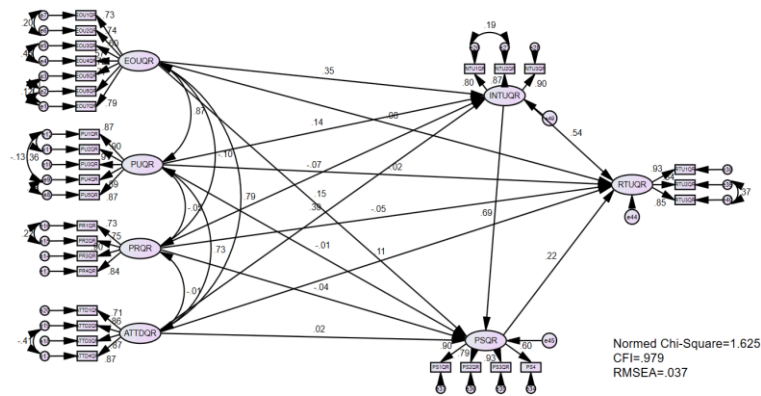
direct and positive relationship over Intention to Use, the QR Payment modes in the consumers' daily usage.

Hypotheses 05 (H5) - The greater the user's intention to use, the greater the perceived satisfaction with QR Code Base enabled payment solutions. The statement is perfectly acceptable as per the above stated derived results from the research analysis. Where ($\beta = 0.659$ & $p < 0.000$), which is significant and supported to the statement. The greater the user's intention to use, the greater the perceived satisfaction with QR Code Base enabled payment solutions in the consumers' daily usage. Therefore, findings of this research shows that user's intention to use and to adopt a technology affects their perceived satisfaction regarding benefits of the QR Code Payment system.

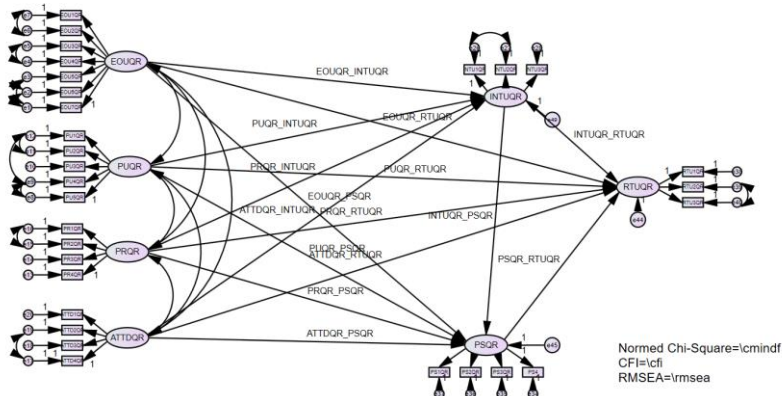
Hypotheses 06 (H6) - The greater the user's Perceived satisfaction with QR Code Base enabled payment solutions, the greater the user's recommendation to use QR Code Base enabled payment solutions. The statement is perfectly acceptable as per the above stated derived results from the research analysis. Where ($\beta = 1.327$ & $p < 0.000$), which is significant and supported to the statement. The greater the user's perceived satisfaction to use, the greater the recommendation to use the QR Code Base enabled payment solutions in the consumers' daily usage. Hence, we can conclude that perceived satisfaction has a direct and positive effect on user's recommendation to use a technology. Consumer's perceived satisfaction gets directly affected by features and flexibility of a new technology, and may increase user's recommendations and post adoption behaviour positively. (Duarte, Silva, & Ferreira, (2018), Hsu, Chen, Chang, & Chao, (2010), Selvakumar, (2010).

Indirect Effects on the Mediation variables

The conceptual framework has been revised without the Moderating variables, Innovativeness, Stress to Use the technology and Social Influence.



Analysis made for multiple mediators.



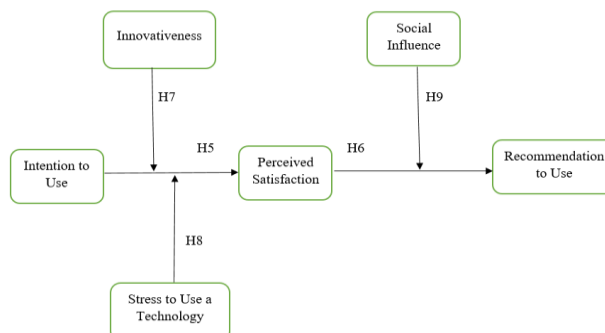
Indirect Path	Unstandardized Estimate	Lower	Upper	P-Value	Standardized Estimate
EOUQR --> INTUQR -> PSQR	0.191	0.085	0.361	0.003	0.245**
EOUQR --> INTUQR -> PSQR --> RTUQR	0.070	0.024	0.173	0.006	0.245**
EOUQR --> INTUQR -> RTUQR	0.249	0.112	0.488	0.003	0.192**
EOUQR --> PSQR --> RTUQR	0.044	-0.003	0.140	0.120	0.034
PUQR --> INTUQR --> PSQR	0.060	-0.012	0.148	0.154	0.094
PUQR --> INTUQR --> PSQR --> RTUQR	0.022	0.000	0.069	0.097	0.094+
PUQR --> INTUQR --> RTUQR	0.079	-0.013	0.208	0.147	0.073
PUQR --> PSQR --> RTUQR	-0.001	-0.037	0.041	0.898	-0.001
PRQR --> INTUQR --> PSQR	-0.030	-0.066	-0.006	0.039	-0.048*
PRQR --> INTUQR --> PSQR --> RTUQR	-0.011	-0.032	-0.002	0.030	-0.048*
PRQR --> INTUQR --> RTUQR	-0.040	-0.085	-0.007	0.040	-0.038*
PRQR --> PSQR --> RTUQR	-0.009	-0.034	0.004	0.281	-0.008
ATTDQR --> INTUQR --> PSQR	0.175	0.106	0.278	0.000	0.267***
ATTDQR --> INTUQR --> PSQR --> RTUQR	0.064	0.030	0.124	0.003	0.267**
ATTDQR --> INTUQR --> RTUQR	0.227	0.130	0.389	0.001	0.209***
ATTDQR --> PSQR --> RTUQR	0.005	-0.019	0.048	0.698	0.004
INTUQR --> PSQR --> RTUQR	0.187	0.084	0.328	0.007	0.152**

Significance of Estimates: *** p < 0.001** p < 0.010* p < 0.050+ p < 0.100 Gaskin, J. & Lim, J. (2018),

Having analyzed the Mediation effects of the two mediators, Intention to Use over Perceived Satisfaction to Recommendation to Use the technology, it is noted that except for the below path diagram, all the other paths does not reflect a mediation affect. Therefore, Intention to Use and Perceived satisfaction does not have any moderating affect over Recommendation to use the technology.

Testing of Moderating effect on Innovativeness to Intention to Use and Perceived Satisfaction. (H7)

Conceptual Framework



As per the research Innovativeness and Stress to Use a Technology moderates the variables Intention to Use and Perceived Satisfaction. Further, Perceived Satisfaction and Recommendation to Use is moderated by Social Influence. (Liébana-Cabanillas, Sánchez-Fernández, & Muñoz-Leiva, 2014). (Oliveira, Thomas, Baptista, & Campos, Mobile payment: Understanding the determinants of customer adoption and intention to recommend the technology, 2016).

While the analysis is performed in SPSS the following mean variables were generated. Intention to Use, (INTU), Perceived Satisfaction (PS) and Innovativeness (INNOVA). Once the below path in SPSS was performed,

INTU	Numeric	8	0		None	None	10	Right	Scale	Input
PS	Numeric	8	0		None	None	10	Right	Scale	Input
INNOVA	Numeric	8	0		None	None	10	Right	Scale	Input
ZINTU	Numeric	11	5	Zscore(INTU)	None	None	13	Right	Scale	Input
ZPS	Numeric	11	5	Zscore(PS)	None	None	13	Right	Scale	Input
ZINNOVA	Numeric	11	5	Zscore(INNOVA)	None	None	13	Right	Scale	Input
INTERACTI...	Numeric	8	2		None	None	13	Right	Scale	Input

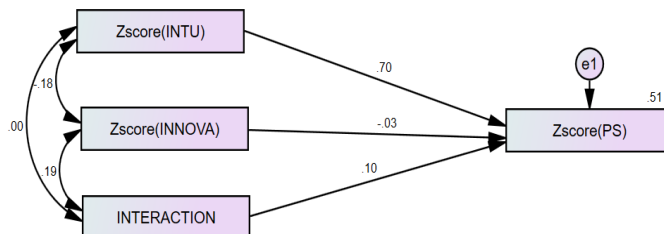
Analyse → Descriptive Statistics → Descriptives, the following variables were created for the analysis of the moderator effect on the variables.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
INTU	457	1	5	3.99	.903
PS	457	1	5	3.82	.822
INNOVA	457	1	5	2.42	1.216
Valid N (listwise)	457				

Values for Interaction Variable were computed. The Interaction Variable is the Product between the Independent Variable and the Moderator Variable.

Provided below the analysis with AMOS



The regression weights on the above analysis:

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P
ZPS <--- ZINTU	.704	.033	21.176	***
ZPS <--- ZINNOVA	-.028	.034	-.841	.400
ZPS <--- INTERACTION	.097	.031	3.121	.002

While analysing the extracted data and having a look at the P column it is observed that the Interaction effect on the Interaction variable on ZPS is 0.002 (P>0.05), therefore this cannot be considered statistically significant. The probability of getting a critical ratio as large as 3.121 in absolute value is 0.002. Hence, the regression weight for interaction in the prediction of ZPS is not significantly different from Zero at the 0.05 level (two-tailed).

Similarly, ZINNOVA has no effect on ZPS respectively 0.400 (P>0.05), therefore not statistically significant. The probability of getting a critical ratio as large as -0.841 in absolute value is 0.400. Hence, the regression weight for ZINNOVA in the prediction of ZPS is not significantly different from Zero at the 0.05 level. (two-tailed)

While analysing the path ZINTU and ZPS is statistically significant ($P < 0.05$). The regression weight for ZINTU in the prediction of ZPS is significantly different from Zero at the 0.000 level. (two-tailed)

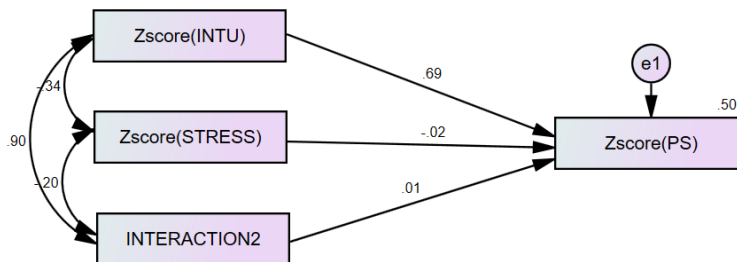
Hence, the interaction effect of Innovativeness on Perceived Satisfaction is not statistically significant. Thereby the conclusion to derive would be that there is no moderating effect from the Innovativeness over Intention to Use of technology to the Perceived satisfaction of the usage of the technology.

Testing of Moderating effect on STRESS to use technology to Intention to Use and Perceived Satisfaction. (H8)

SPSS analysis performed for STRESS.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std.Deviation
INTU	457	1	5	3.99	0.903
PS	457	1	5	3.82	0.822
STRESS	457	1	5	2.3406	1.14386
Valid N (list wise)	457				



The regression weights on the above analysis:

Regression Weights: (Group number 1 - Default model)

		Estimate	S.E.	C.R.	P
ZPS <---	ZINTU	.692	.082	8.420	***
ZPS <---	ZSTRESS	-.020	.036	-.564	.573
ZPS <---	INTERACTION2	.004	.029	.133	.894

While analysing the extracted data and having a look at the P column it is observed that the Interaction effect on the Interaction2 variable on ZPS is 0.894 ($P > 0.05$), therefore this cannot be considered statistically significant. The probability of getting a critical ratio as large as 0.133 in absolute value is 0.894. Hence, the regression weight for interaction in the prediction of ZPS is not significantly different from Zero at the 0.05 level (two-tailed).

Similarly, ZSTRESS has no effect on ZPS respectively 0.573 ($P > 0.05$), therefore not statistically significant. The probability of getting a critical ratio as large as -0.564 in absolute value is - 0.564. Hence, the regression weight for ZSTRESS in the prediction of ZPS is not significantly different from Zero at the 0.05 level. (two-tailed)

While analysing the path ZINTU and ZPS is statistically significant ($P < 0.05$). The regression weight for ZINTU in the prediction of ZPS is significantly different from Zero at the 0.000 level. (two-tailed)

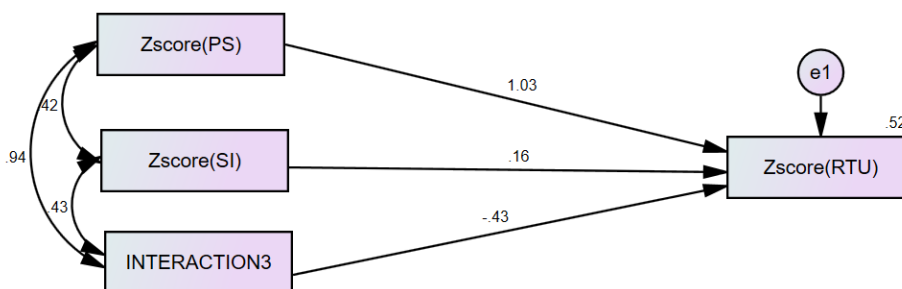
Hence, the interaction effect of Stress to Use a Technology on Perceived Satisfaction is not statistically significant. Thereby the conclusion to derive would be that there is no moderating effect from the Stress to Use technology over Intention to Use of technology to the Perceived satisfaction of the usage of the technology.

Testing of Moderating effect on Social Influence to Perceived Satisfaction and Recommendation to Use (H9)

As previously tested for Innovativeness and Stress, the SPSS analysis was performed for Social Influence as well.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std.Deviation
SI	457	1	5	3.0508	0.92303
RTU	457	1	5	3.9599	0.95365
PS	457	1	5	3.82	0.82200
Valid N (list wise)	457				



The regression weights on the above analysis:

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P
ZRTU <--- ZPS	1.027	.093	11.106	***
ZRTU <--- ZSI	.155	.036	4.297	***
ZRTU <--- INTERACTION3	-.141	.031	-4.579	***

While analysing the extracted data and having a look at the P column it is observed that the Interaction effect on the Interaction3 variable on ZRTU is 0.000 ($P < 0.05$), therefore this will be considered statistically significant. The probability of getting a critical ratio as large as -4.579 in absolute value is 0.000. Hence, the regression weight for interaction in the prediction of ZRTU is significantly different from Zero at the 0.05 level (two-tailed). Therefore, INTERACTION3 is statistically significant.

Similarly, ZSI also has an effect on ZRTU respectively 0.000 ($P < 0.05$), therefore this is statistically significant. The probability of getting a critical ratio as large as 4.297 in absolute value is 0.000. Hence, the regression weight for ZSI in the prediction of ZRTU is significantly different from Zero at the 0.05 level. (two-tailed). Therefore, ZSI is statistically significant. While analysing the path ZPS and ZRTU is statistically significant ($P < 0.05$). The regression weight for ZPS in the prediction of ZRTU is significantly different from Zero at the 0.000 level. (two-tailed)

Hence, the interaction effect of Social Influence on Perceived Satisfaction is statistically significant. Thereby the conclusion to derive would be that there is a moderating effect from the Social Influence over Perceived satisfaction and Recommendation to Use the technology. Thereby, having analysed all three moderators in this research, Social Influence directly affects the model as a moderator. This analysis is derived by the local context. This clearly indicates that consumers, do listen to their family and friends and obtain their opinions and suggestions, prior to use of any technological platform or even any device.

The statistical results and the relationships of all variables were examined. This chapter has identified the various factors significant for the Recommendation to Use QR Code Base enabled payment solutions.

Conclusions and Recommendations

Taking a recap of the objectives of this research, determining the adaptability and recommendation of QR Code Base payment solutions introducing to the local consumers. The study aims to traverse behavioural factors effecting users' / consumers intention and perceived satisfaction of the clients towards using of QR Code based payment platforms in the local market. The study encompasses the constructs, Perceived Ease of Use, Perceived Usefulness, Perceived Risk, Attitude, Social Influence, Innovativeness and Stress to Use, to measure local consumers' perception and adoption towards using the QR Code payment modes for their daily usage - (Koenig-Lewis, Palmer, & Moll, 2010; Wu, Liu, & Huang, 2017; Nidhi, Neena, & Liébana-Cabanillas, 2020).

Having logically performed the research on Intention to Use, the study put forward the relationships affected between Ease of Use, Perceived Usefulness, Perceived Risk and Attitude with the Intention to Use the QR Payment Platform which is introduced to the local market. Taking into consideration the variables, Ease of Use was the most supportive, where to follow by Attitude. Perceived Risk and Perceived Usefulness variables were identified as not significant in determining the consumers' intention to use the QR Code payment platform in Sri Lanka.

Further, the research made on Ease of Use also has a compelling influence in using the QR Code base payment system locally, taking into consideration the researches made in India and China (Nidhi, Neena, & Liébana-Cabanillas, 2020; Liu, Wu, & Buck, 2021), also, clearly states on the significant influence on the Ease of Use in using latest technology. (Liebana - cabanillas, Marinkovic, Luna, & Kalinic, 2018; Dwivedi Y. , et al., 2017; Dwivedi Y. , Rana, Jeyaraj, Clement, & Williams, 2017). The users' intention to use is purely driven by the Ease of Using the technology, hence the research derived that there is a positive impact on the Intention to Use by the construct Ease of Use.

As per the derived results on Perceived Risk and Perceived Satisfaction it is clearly noted that there is a negative impact on the Intention to Use QR Code Payment platforms in the local context. This research found statistical significant relationships connecting intention to use and perceived satisfaction as well as, recommendation to use the Lanka QR Code base platform in conducting payments locally. Further, this can be proven in line with the preceding research made by (Duarte, Silva, & Ferreira, 2018; Madan & Yadar, 2018; Oliveira, Thomas, Baptista, & Campos, 2016; Quoc, Xuan, Sanjay, & Rytis, 2018; Thakur & Srivastava, 2014), all these researches proved that higher the increase in intention to use digital payment modes, there will be an increase in perceived satisfaction as well. Any technology introduced would require the consumers to be satisfied with the usage and in return there will be a high potential of increase in the intention of usage, which is justified by this research.

This research further confirms the consumers' Perceived Satisfaction positively influence a direct effect to the Recommendation to Use the QR Code Base payment platform in the local context. There are 24 Lanka QR Payment platform financial issuers who provide the digital apps to consumers to use for these transactions. These financial and non-financial institutions should keep in mind that the consumers should be satisfied with the latest technologies while using on Lanka QR, where they shall recommend this usage to their family and friends. That will in return

increase the usage on QR Code Base payments. (Tajvidi, Wang, Hajli, & Love, 2017; Joo, Park, & Shin, 2017)

Having taken into consideration the moderating effects of this research, this research determined the moderating effects of innovativeness, Stress to Use the technology and Social Influence on user's behavioural outcome to use a new technology. (Dahlberg, Guo, & Ondrus, 2015; Nidhi, Neena, & Liébana-Cabanillas, 2020; Dahlberg, Huurros, & Ainamo, 2008a; Dahlberg, Mallat, Ondrus, & Zmijewska, 2008b; Mallat, 2007; Wang, Wang, & Lin, 2018; Yang, Liu, Li, & Yu, 2015). Having taken into consideration the current research, Social Influence only had the significant differences and statistically significant, where Social Influence had an impact on the Perceived satisfaction and Recommendation to use the Lanka QR payment platform.

This research clearly identifies the significance of recommendation to use the QR Code payment platforms in consumers' daily life. Recommendation is followed after users to share their views and acceptance about the technology. They will communicate their likeliness of using the current technology in all modes of communications the consumers prefer. This could be word of mouth, in all social media platforms etc. (Oliveira, Thomas, Baptista, & Campos, Mobile payment: Understanding the determinants of customer adoption and intention to recommend the technology, 2016).

Theoretical Contributions to the research

The research done on Lanka QR Code Payment modes and platforms is a unique attempt made by the researcher to contribute to the effectiveness of the usage / perceived satisfaction and recommendation to use the platform in the local context. Mostly, the increase in the social networks and usage of online payment platforms in the country paved the consumers to share ones' opinions and provide feedback for this QR code payment mode. Further, with the current economic crisis situation in the country, consumers to pump fuel for their vehicles, the government of Sri Lanka, introduced a QR Code mode of obtaining fuel at the petrol sheds. A quota system to minimise the usage of fuel. (BusinessStandard:, 2022) All, these usages of QR should inculcate the habit of QR usage in the local context (Abhishek & Hemchand, 2016; Madan & Yadar, 2018; Rana, Dwivedi, Williams, & Weerakkody, 2015). Most of the studies have not taken into consideration the consumers' perceived satisfaction neither the recommendation to use the technology in the local context. However, having taken in to consideration the global research, in this too, the user's perceived satisfaction and the recommendation to use was minimum. (Kapoor, Dwivedi, & Williams, 2015; Madan & Yadar, 2018; Sharma & Sharma, 2019; Nidhi, Neena, & Liébana-Cabanillas, 2020). The results derived from this current research show the positive relationship of User's perceived satisfaction to Recommendation to use the QR Code mode base payment solutions in the Sri Lankan context. The results will undoubtedly help future studies on understanding user's perceived satisfaction and the recommendation to use the technology on QR Code base payment modes.

Further, as this is the only study available on QR Code Base payment modes in the Sri Lankan context, and the introduction of QR Code Base payments system to Sri Lanka also is very new, being 09th October 2018, where the Central Bank of Sri Lanka mandated the introduction to the local Banks and few Non – Financial institutions, (Central Bank of Sri Lanka, 2018). Therefore, this research would have been an early investigation in to the moderating aspect of Innovativeness and Stress to use the technology. The growing significance of Lanka QR Code payment modes in the country will increase the need for research on these aspects. This research will be an undoubtedly a base model for further studies on Lanka QR Code payment modes in the Sri Lankan context.

Practical Contribution to the research

As stated previously, this is the very first study made on Lanka QR Code base payment modes in the Sri Lankan context. Further, having taken into consideration the Recommendation to Use Lanka QR Code Payment modes in the country, is a variable highly important to all the Lanka QR Code payment mode service providers, such as Banks, Non – Financial Organisations, Telecommunication service providers, mobile payment service providers, Marketers and social media platform service providers. As this is a mode where all users can provide feedback and

provide new thoughts for improvements, where this will be useful for further development of the platforms to support the usage. Social networking platforms such as Websites, all social networking platform and public goggle forums do provide an added benefit for the users to interact and share their experiences in Positive and negative ways, where the service providers will need to take this feedback in positive manner. (Miltgen, Popovic, & Oliveira, 2013). These recommendations will determine the success and failures of the QR Code base payment systems in the country. This research provides important insights and new modes such as social networking liking to measure the consumers' behavioural intention to use such latest technologies.

From a practical aspect this research provides guidance for the mobile app developers, bankers on deciding of any latest technology introductions to the consumers, where it is significantly justified that Perceived Usefulness and Perceived Ease of use on QR Code Payment modes will increase the consumers' usage on the application. In this aspect, the manufactures of mobile payment applications must have in mind that they will need to be mindful on the ease of use of these applications developed for the consumers to use. In line with the Recommendation to use, the mobile service platform providers, should commence communications and create awareness among the consumers to motivate the usage of QR Code base payment modes. Further, the banks and non – financial institutions should promote the advantages of using QR Code base payment modes in social media.

Furthermore, attitude also has been a key determinant in creating a constructive impact on intention to use QR Code Base payment modes. The attitude the users creates or the perception they will formulate towards the QR Code payment modes will increase the usage. The degree of attitude can also be upgraded by improving the consumers' own perception about QR Code base payment platforms. (Dwivedi Y. , et al., 2017).

All the elements in the research will undoubtedly improve the intention to use the technology, perceived satisfaction and recommendation to use the technologies. In order for consumers to recommend the technology to others it is justified that perceived satisfaction plays a major contribution. Therefore, all the application developers need to reflect on the benefits of usefulness, ease of use and positive attitude, where the customers' will be content with the technology prior to recommending same to their family and friends. (Oliveira, Thomas, Baptista, & Campos, 2016).

References

- Abhishek, K., Rajesh, K. C., Saroj, K. M., Sanjay, K. K., & Rohit, B. (2022). The Growth Trajectory of UPI - Based Mobile Payments In India: Enablers & Inhibitors. *Indian Journal of Finance and Banking* , 45 - 59.
- Aithal, R. K., Vikram, C., Harshit, M., Debasis, P., & Dev Narayan, S. (2022). Factors influencing technology adoption amongst small retailers: insights from thematic analysis. *International Journal of Retail & distribution management* .
- Ama, H. E., Tara, A. M., Syriac, N., & Tan, S. T. (2022). Factors Influencing Consumer's Behavioural Intention towards the adoption of mobile payment in Kuala Lumpur. *International Journal of Professional Business Review*.
- Balakrishnan, V., & Nor, L. M. (2021). Drivers and Inhibitors for Digital Payment adoption using the Bank, N. D. (2018). Annual Report. Colombo: NDB Bank.
- Bullock. (2017, October 3). Card Not Present . Retrieved from <https://cardnotpresent.com/consumers-open-to-iot-payments-but-must-retain-control-report/>: <https://cardnotpresent.com/consumers-open-to-iot-payments-but-must-retain-control-report/>
- BusinessStandard:. (2022, August 1). Business Standard. Retrieved from Business Standard: https://www.business-standard.com/article/international/sri-lanka-to-implement-qr-code-system-based-fuel-distribution-from-today-122080100077_1.html
- Cansu, T., Burak, C. A., & Abdullah, O. (2022). Understanding user acceptance of QR code mobile payment systems in Turkey: An extended TAM. *Technological Forecasting and Social change* .
- Central Bank of Sri Lanka. (2018). Payment and Settlement Systems Circular No 06 of 2018. Colombo: Central Bank of Sri Lanka.
- Central Bank of Sri Lanka. (2018). Payment and Settlement Systems Circular No 06 of 2018. Colombo: Central Bank of Sri Lanka.
- Central Bank of Sri Lanka. (2021). Payments Bulletin 2021 3Q. Colombo: Central Bank of Sri Lanka.
- Central Bank, o. S. (2021, 12 31). Mobile phone based payment Mechanisams. *Payment Bulletin*, p. 20.
- Central Bank, S. (2020). Launch of the LANKA QR National Initiative. Colombo: Central Bank of Sri Lanka.

- Colombo, D. M. (2017, February 23). Digital Marketer. Retrieved from Digital Marketer: <http://www.digitalmarketer.lk/internet-usage-statistics-in-sri-lanka-2016-updated.html>
- Cucos, L. (2022, January 11). Uedufy. Retrieved from Uedufy: <https://uedufy.com/step-by-step-moderation-analysis-in-amos/>
- Denso Wave. (2022, April 23). Denso Wave;. Retrieved from Denos Wave: <https://www.denso-wave.com/en/technology/voll.html>
- Deshveejit, K. (2022, July 19). Tech wire Asia. Retrieved from Tech wire Asia: <https://techwireasia.com/2022/07/five-southeast-asian-nations-to-link-their-qr-code-payment-systems-heres-what-it-means-for-travelers/>
- Digital. (2022, April 16). Digital 2022;. Retrieved from Digital 2022: <https://datareportal.com/reports/digital-2022-sri-lanka>
- Do, N. H., Tham, J., Azam, S. F., & Khatibi, A. A. (2020). The effects of factors influencing on user behaviour intention to use mobile payment; Evidence from Cambodia. *International Journal of Data and Network Science*, 213 - 224.
- Duarte, P., Silva, S. C., & Ferreira, M. B. (2018). How convenient is it? Delivering online shopping convenience to enhance customer satisfaction and encourage e-WOM. *Journal of Retailing and Consumer Services*, 161-169.
- Dwivedi, Y. K., Rana, N. P., Jeyaraj, A., Clement, M., & Williams, M. D. (2017). Re-examining the Unified Theory of Acceptance and Use of Technology (UTAUT): Towards a Revised Theoretical Model. *Information Systems Frontiers*.
- Dwivedi, Y., Rana, N. P., Janssen, M., Lal, B., Williams, M., & Clement, M. (2017). An emperical validation of a unified model of electronic government adoption (UMEGA). *Government Information Quarterly*, 211 - 230.
- Dwivedi, Y., Rana, N., Jeyaraj, A., Clement, M., & Williams, M. (2017). Re examining the unified theory of acceptance and use of technology (UTAUT), towards a revised theoretical model. *Information Systems Frontiers*.
- Francisco Liébana-Cabanillas a, *. V. (2018). A SEM-neural network approach for predicting antecedents of m-commerce acceptance. *International Journal of Information Management*, 14 - 24.
- Group, M. M. (2019, July 25). Internet World Wide Stats - Usage and Population Statistics. Retrieved from Internet World Wide Stats - Usage and Population Statistics: <https://www.internetworldstats.com/stats.htm>
- Handri, M. N., & Winny, A. (2021). The effect of perceived cost, trust, usefulness and customer value addition on Intention to Use of Go - Pay Mobile payment services in Small Merchants. *Journal of Business and Management Review*, 715- 732.
- Haritha, P. H. (2022). Mobile payment service adoption: understanding customers for an application of emerging financial technology. *Information and computer security*.
- Hasan, K., & Ahmet, K. K. (2022). THE EFFECT OF TRUST ON MOBILE BANKING USAGE: THE MEDIATING ROLES OF PERCEIVED USEFULNESS AND PERCEIVED EASE OF USE. *Econviews*, 231 - 246.
- Hasan, T., & Viet, P. D. (2022). User perceptions of WeChat and WeChat pay in China. *Global Knowledge, Memory and Communication*.
- Hossain, A., Quaresma, R., & Rahman, H. (2019). Investigating factors influencing the physicians' adoption of electronic health record (EHR) in healthcare system of Bangladesh: An empirical study. *International Journal of Information Management*, 76-87.
- Humbani, M., & Wiese, M. (2018). An Intergrated Framework for the adoption and continuance intention to use mobile payment apps. *Emerald*, 646 - 663.
- Internet Society. (2017, 07 01). Retrieved from Internet Society: <http://www.internetsociety.org/map/global-internet-report/?gclid=CNSem-Li59QCFdQRaAodCW4AHg#global-internet-penetration>
- ITU. (2020, May 21). International Telecommunications Union. Retrieved from International Telecommunications Union: <https://www.itu.int/en/Pages/default.aspx>
- Joo, Y. J., Park, S., & Shin, E. (2017). Students expectation, satisfaction and continuance intention to use digital text books. *Computers in Human Behaviour*, 83 - 90.
- Joo, Y., Park, S., & Shin, E. K. (2017). Students expectation, Perceived Satisfaction and continuance intention to use digital text books. *Computers in Human Behaviour*, 83 - 90.
- Kaitawarn, C. (2017). Factor Influencing the acceptance and use of M Payment in Thailand. A case study of AIS m pay rabbit . . Review of Intergrate Business and Economics Research, 222 - 230.
- Lacerte, R. (2019, 08 04). How customers are rethinking engagement in the digital era. Retrieved from <https://bit.ly/2Uq3Bt3>
- Lanka, C. a. (2019, 07 24). Census and Statistics. Retrieved from Census and Statistics: <http://www.statistics.gov.lk/PopHouSat/VitalStatistics/MidYearPopulation/Mid-year%20population%20by%20district.pdf>
- Lanka, C. B. (2017, 04 11). Central Bank of Sri Lanka. Retrieved from Central Bank of Sri Lanka: http://www.cbsl.gov.lk/htm/english/05_fss/popup/licensed_cb.htm
- Lanka, C. B. (2018, October 09). Payment and Settlement Systems Circular No 06 . Payment and Settlement Circular. Colombo, Western Province, Sri Lanka: CBSL.
- Lanka, C. B. (2019, July 22). Central Bank of Sri Lanka. Retrieved from Central Bank of Sri Lanka Corporte Web Site: <https://www.cbsl.gov.lk/sites/default/files/Payments%20Bulletin%202019%20Q1%20Final.pdf>
- Lanka, C. B. (2019, 03 31). Mobile Phone Based Payment Mechanisama. *Payments Bulletin*, p. 20.
- Lanka, C. B. (2021, December). *Payment and Settlement Bulletin*. Payment and Settlement Bulletin.
- Lanka, C. B. (2021, December 31). *The Payment Bulletin*. The Payment Bulleting Q4 2021, p. 2.

- Liebana - Cabanillas, F. L.-R. (2017). Predictive and explanatory modeling regarding adoption of mobile payment systems. *Technological Forecasting and Social Change*, 32 - 40.
- Liebana - cabanillas, F., Marinkovic, V., Luna, I., & Kalinic, Z. (2018). Predicting the determinants of mobile payment acceptance: A hybrid SEM - neural network approach. *Technical Forecasting & Social Change*, 129, 117 - 130.
- Liébana, F., & Cabanillas, L. (2017). Predictive and Explanatory modelig regarding adoption of mobile systems. *Technological Forecasting & Social Change*, 32 - 40.
- Liébana-Cabanillas, F., Veljko, M., Iviane, R. d., & Zoran, K. (2018). Predicting the determinants of mobile payment acceptance. A hybrid SEM - neural network approach. *Technological Forecasting and Social Change*, 117 - 130.
- Liu, R., Wu, J., & Buck, G. F. (2021). The influence of mobile QR Code payment on, payment pleasure. Evidence from China. *Emerald*, 337 - 356.
- Ltd, K. (. (2022, 02 01). Digital 2022 Sri Lanka. Retrieved from Digital 2022 Sri Lanka: <http://www.statistics.gov.lk/PopHouSat/VitalStatistics/MidYearPopulation/Mid-year%20population%20by%20district.pdf>
- Lunaa, I. R., Liébana-Cabanillas, F., Sánchez-Fernández, J., & Muñoz-Leiva, F. (2018). Mobile payment is not all the same: The adoption of mobile payment systems depending on the technology applied. *Technological Forecasting & Social Change*.
- Madan, K., & Yadar, R. (2018). Understanding and Predicting antecedents of mobile shopping adoption. A developing country perspective. *Journal of Marketing and Logistics*, 139 - 162.
- Madan, K., & Yadar, R. (2018). Understanding and predicting antecedents of mobile shopping adoption: A developing country perspective. *Asia Pacific Journal of Marketing and Logistics*, 139 - 162.
- Magotra, I., Sharma, J., & Sharma, S. (2019). Adopting of self - service technologies among banking customers: A revisit. *International Journal of Applied Management and Technology* Volume 18, 67-72.
- Magotra, I., Sharma, J., & Sharma, S. K. (2019). Adoption of self service technologies among banking customers. *International Journal of Applied Management and Technology* , 67-72.
- Mahabub, B., Kethan, M., & Rajasulochana, A. (2022). An Empirical Study on the Factors Influencing Usage of Mobile Payments with Reference to Bangalore City. *Journal of Corporate Finance Management and Banking System* , 23-34.
- Min - Hueih, L., Yu- Hsin, H., & Yun - Cih, C. (2021). Young Generation's Mobile Payment Adoption Behavior; Analysis Based on an Extended UTAUT Model. *Journal of Business and Management Review* , 618 - 637.
- Mutaz, M. A.-D., Abdeljaber, O., Yajid, M. S., Ali, K., Sultan, A. M., & Tham, J. (2021). The role of service quality and online trust in maintaing clients for Malaysian Online Enterprises. *International Journal of eBusiness and eGovernment studies* .
- Nassima, B. (2019). Digital Payment in Algeria: Opportunity to redefine the economic growth model. *Journal of Management and Economic Sciences Prospect*, 295 - 308.
- Nidhi, S., Neena, S., & Liébana-Cabanillas, F. J. (2020). Determining factors in the adoption and recommendation of mobile wallet services in India Analysis of the effect of innovativeness, stress to use andsocial influence. *International Journal of Information Management*, 191 - 205.
- Patria, L., Suharyanto, S., & Yohanes, F. C. (2022). Determining factors of continuance intention in mobile payment:fintech industry perspective. *Asia Pacific Journal of Marketing and logistics*.
- Paulo, D., & Susana, C. e. (2018). How convenient is it? Delivering online shopping convenience to enhance customer satisfaction and encourage e WOM. *Journal of Retailing and Customer services*, 161 - 169.
- Payments, D. (2022, 12 04). <https://www.statista.com/outlook/296/117/digital-payments/china>. Retrieved from <https://www.statista.com/outlook/296/117/digital-payments/china>: <https://www.statista.com/outlook/296/117/digital-payments/china>
- Peter, J., & Comfort, D. (2019). Stories and Storytelling in the UK Banking. *Athens Journal of Business Economics*, 1 - 17.
- Quoc, T. P., Xuan, P. T., Sanjay, M., & Rytis, M. (2018). Relationship between convenience, perceived value and repurchase intention in Online Shopping in Vietnam. *MDPI Sustainability* .
- Ramos de Luna, I. R., Libena - Cabanillas, F., Munoz - Leiva, F., & Sanchez- Fernandez, J. (2019). The adoption of mobile payment systems depending on the technology applied. *Technological forecasting & Social change* , Available online 25th October 2018 (In Press).
- Raychaudhuri, A. (2017). Demonetization in India; Some unsolved economic puzzles. *Trade and Development review*, 74 - 85.
- Sergio, R., Rocio, R., & Jaramillo, J. (2018). Are mobile devices a blessing or a curse? Effects of mobile technology use on salesperson role stress and job satisfaction. *Journal of Business and Industrial marketing*, 651 - 664.
- Sharma, S., & Sharma, M. (2019). Examining the role of trust and quality dimensions in the actual usage of mobile banking services. An empirical investigation. *International Journal of Information Management*, 65 - 75.
- Singh, N., Srivastava, S., & Sinha, N. (2017). Consumer preference and perceived satisfaction of M - wallets: A study on North Indian consumers. *International Journal of Bank Marketing*, 35(6), 944 - 965.
- Singha, C., Bilal, K., & Wornchanok, C. (2021). Digital Payment System Innovations A marketing perspective on Intention and actual use in the retail sector. *Innovative Marketing*, 109 - 123.

- Sinha, N. S., J., F., & Cabanillas, L. (2019). Determining Factors in the Adoption and recommendation of mobile wallet services in India: Analysis of the effect of innovativeness, stress to use and social influence. *International Journal of Information Management*, 191 - 205.
- statistics, s. a. (2020, 06 23). Population . Retrieved from Sencers and Statistics: <http://www.statistics.gov.lk/PopHouSat/VitalStatistics/MidYearPopulation/Mid-year%20population%20by%20district.pdf>
- Stats, I. W. (2017, 03 25). Internet World Stats. Retrieved from Internat World Stats: <http://www.internetworldstats.com/stats.htm#top>
- Stats, I. W. (2017, 03 25). Internet World Stats (Usage and Population Statistics). Retrieved from <http://www.internetworldstats.com/stats.htm#top>: <http://www.internetworldstats.com/stats.htm#top>
- Tag, G., Lee, V., Lin, B., & Ooi, K. B. (2017). Mobile applications in Tourism: The future of the tourism industry. . *Industrial Management Data System*.
- Tajvidi, M., Wang, Y., Hajli, N., & Love, R. (2017). Brand Value Co Creation in social commerce, The role of Interactivity, social support, and relationship quality. *Computers in Human Behaviour*.
- Tat-Huei, C., Jun-Hwa, C., Boon-Liat, C., & Xin-Jean, L. (2022). I Am too old for this! Barriers contributing to the non-adoption of mobile payment. *International Journal of Bank*, 1017 - 1050.
- Tech - ICT. (2017, July 01). Retrieved from Tech - ICT: http://www.teach-ict.com/gcse_new/internet/internet_www/miniweb/pg6.htm
- Tiger, Q. (2022, November 03). QR code usage statistics 2022:. Retrieved from QR code usage statistics 2022:: <https://www.qrcode-tiger.com/qr-code-statistics-2022-q1>
- VISA, I. (2017). Lankan Consumers Keen to adopt Digital Payment solutions. Colombo: News Paper Daily FT.
- Visa, I. (2017, November 29). Lankan consumers keen to adopt Digital Payment solutions: Visa Survey. *Daily Financial Times*.
- Wang, Y., Wang, Y., & Lin, T. (2018). Developing and validating a technology upgrade model. *International Journal of Information Management*, 7 - 26.
- Worldometer. (2020, May 21). world population clock. Retrieved from World Population Clock: <https://www.worldometers.info/world-population/#growthrate>
- Wu, J., Liu, L., & Huang, L. (2017). Consumer acceptance of mobile payment across time, Antecedents and moderating role of diffusion stages. . *Industrial Management Data Systems*, 1761 - 1776.
- Wu, J., Liu, L., & Huang, L. (2017). Consumer acceptance of mobile payment across times, antecedents and moderating role of diffusion stage. *Industrial Management & Data System*, 1761 - 1776.
- Xu, F., & Du, J. (2018). Factors influencing user's perceived satisfaction and loyalty to digital libraries in Chinese Universities. . *Computers in human behaviour*, 64 - 72.
- Yong, C., Tham, J., Azam, S. F., & Khatibi, A. (2021). The acceptance of Mobile payment and sustainable usage intention in Malaysia; An analysis based on Unified Theory of Acceptance and Use of Technology (UTAUT). *European Journal of Economic and Financial Research*.
- Yong, C., Tham, J., Azam, S., & Khatibi, A. (2021). The factors Influencing college students acceptance of mobile payments in Malaysia. *European Journal of Management and Marketing Studies*.
- Yong, C., Tham, J., S.M.F.Azam, & Khatibi, A. (2021). An empirical study on acceptance of mobile payment and its competitive advantage in Malaysia. *European Journal of Social Science Studies*.
- YZhongda, W., & Yunxin, L. (2022). Exploring country differences in the adoption of mobile payment service: the surprising robustness of the UTAUT2 model. *International Journal of Bank Management*.