Factors Effecting the Recommendation of Qr Code Enabled Payment Solutions Among the Sri Lankan Consumers

Chamika Hewawasam P

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

***Corresponding author:** Chamika Hewawasam P, Postgraduate Centre (PGC), Management and Science University, Malaysia

Abstract
The key requirement of this study is to analyse user's acceptance of Quick Response (QR) code mobile driven payment systems, in considering the Sri Lankan populations widespread use of mobile phones and other mobile devices. The current research has been derived by using the UTAUT2 (Unified Theory of Acceptance and Use of Technology) model.

This study develops a conceptual model to determine the most significant factors influencing user's Perceived Satisfaction and recommendation to use QR Code Payments as a payment platform in retail usage and purchasing. The research model included 352 responses from an online survey in Sri Lanka. The study tested the mediating effect of Perceived Satisfaction to recommendation to use QR Code payment modes.

The research derived that Ease of Use, and Attitude to have significant effect on user's Perceived Satisfaction to use QR Code payment modes, which further influenced user's perceived satisfaction and recommendation to use QR Code payment modes as a direct testing. Further, the overall study is directed at the consumers' acceptance of usage on QR Code payment platforms in Sri Lanka, and the academicians can research as future studies in the aspect of Merchants in Sri Lanka.

Keywords: QR – Quick Response Code Payments, NFC – Near Field Communication Payments, UTAUT2 – Unified Theory of Acceptance and Use of Technology Recommendation to Use Perceived Satisf

Introduction
The latest developments of mobile devices are launched with enhanced features that help make daily life of the consumer easier and productive and time efficient. Due to these reasons the trend in usage of mobile phones and digital devices has increased over the few years [1].

As per the International Telecommunication Union, latest figures show that an estimated 4.9 billion people are using the internet in 2021, and approximately 63% of the worlds' population [2]. This is an increase of almost 17% since 2019, with almost 800 million people estimated to have engaged online during this period. As per [3]. Sri Lanka's total population reached 21.54 million in January 2022, and the internet users reached 11.34 million reaching 52.65% of the total population using internet.

In light of this trend in online usage most of the technology companies, financial institutions, non – financial institutions such as telecommunication service providers are focusing their efforts on increasing the number of services available, including mobile payments which are defined as all commercial transactions which take place as mobile transactions [4, 5].

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 [6].

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 too 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. [6, 7]

Quick Response (QR) Code Payment Systems Payment Systems A QR Code is a type of matrix barcode (or two – dimensional

barcode), invented in 1994 by the Japanese automotive company Denso Wave. A barcode is a machine – readable optical label that can contain information about the item to which it is attached. In practice, QR codes contain data for a locator, identifier, or tracker that points to website or application. A QR Code uses four standardized encoding modes (numeric, alphanumeric, to store data efficiently) [8].

The information that is normally linked to a QR code includes web addresses (pages, Locations, Google Maps, I Tunes, You Tube links, etc) basic texts (alerts, SMS, e Mail, messages etc) or numeric information (phone numbers, coordinates etc) [9].

While initially the QR was designed for automotive industry, at present all segments of businesses have commenced using the QR codes in their production lines. The QR is now mostly used for advertising and communication campaigns, such as AI driven Augmented Reality campaigns. Companies use these QR codes included for textile companies, Mobile communication companies, signage in advertising media, product traceability and also on the web sites and many more [10].

These 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 [6].

Even though, Lanka QR Code payment method was launched in interoperable manner, it is still not at the full scale that is necessary for the usage of the local consumer and adoption as a payment platform in Sri Lanka. Despite performing a Lanka QR transaction is more beneficial the value of transactions 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, its benefits, minimum consumer awareness, and the usefulness can be considered as the main challenges, to the minimum usage of Lanka QR payment platform. Quick Response (QR) code-based payment solutions provide an alternative channel for initiating and accepting payments between a customer and a merchant [11].

Central Bank of Sri Lanka issued a QR Code standard, titled as Lanka QR specifications, to promote customer convenience, security and ensure interoperability of different payment mechanisms, and instruments through the payment and settlement systems circular No 06 of 2018, on establishment of a National Quick Response Code standard for local currency payments [11].

Lanka QR On – Us transactions (Intra – Bank transactions) are settled within the institution while Off – Us transactions (Inter – Bank transactions) are settled through CEFTS [11].

Payment and Settlement Systems (Circular No 02 of 2019) on establishment of a National Quick Response code standard for local payments was issued replacing the payment and settlement systems circular of No 06 of 2018.

Quick Response (QR) code-based payment solutions, initiated using mobile devices, provide an alternative channel for initiating and accepting payments, specifically between a customer and the merchant. The usage of QR Codes for payments eliminates the requirement for customers to carry cash or payment cards and for merchants to invest in high costly Point – of – Sale devices to process transactions.

The payment industry will benefit immensely from having a QR Code standard implemented in the payment ecosystem of the country. Accordingly, the Central Bank of Sri Lanka is hereby issuing a QR Code standard, titled Lanka QR specifications, to promote customers' convenience, security and ensure interoperability of different payment mechanisms and instruments by adopting a standard QR Code to initiate payments, financial institutions will be able to provide access to low – cost and secure digital payments to customers and merchants [12].

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 globalization 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 [13, 14].

However, there are yet few issues that could be identified as barriers to the intention to use QR payment services, where even in mobile payments as well, such as lack of information about product usefulness and usage, privacy norms, low awareness, resistance, innovativeness, infrastructural support and interoperability issues [15]. 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 [16].

To mitigate or overcome such barriers in usage of QR Code base driven payment modes and digital payments and to get the usage increased, research studies proposed several key factors that may influence the intention and continued usage of QR Code and digital payment services [17].

The key technology adoption models, TAM (Technology Acceptance Model), and UTAUT2 (Unified Theory of Acceptance and Use of Technology), clearly states that ease of use, usefulness, attitude, perceived trust, subjective norms are some significant factors, which have significant influence on users' intention and further on continued usage of technology [16].

The model adopted for the research has been tested for the Indian context on Mobile Wallet services by during the year 2019 [19]. 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 [19].

This study will show that the customers are becoming more towards digital payments, and the customers are benefiting from QR Code driven payments while using their mobile phones [20].

Review of Literature

The QR Code (Quick Response Code) and NFC (Near Field Contactless) payment solutions both comes under Self Service Technologies (SST) where the customer has the feasibility of performing the transaction via the mobile phone. The introduction of latest technologies such as Self-Service Technologies (SST's) in the banking sector has been emerging as one of the key significant business drivers that accommodates customers in operating their bank accounts with more ease and effectiveness [21].

SST's (Eg: ATM's Internet Banking, Mobile Banking, QR Code Payment Solutions, NFC enabled payment solutions) has allowed banking customers or to state consumers to carry out their banking transactions on 24/7 *365, mode based on their requirements and conveniences [22]. The positive results of QR Code Payment Solutions can be observed by the augmented level of bank's profitability due to the introduction of the SSTs into the banking operations and processors [23].

However, notwithstanding the benefits provided by SST's, its development has been reported to be low as compared to the projected growth levels specifically with reference to developing nations like India, in this context, the lack of wide acceptance of QR Code base payment solutions among the customers have been observed, as one of the primary concerns [24, 25].

As mentioned by in consideration the lack of wide acceptance of QR Code Base Payment mechanisms and NFC Payment modes among the customers, numerous attempts have been initiated to analyse the SST – adoption behaviours of the banking customers and consumers [26, 27, 28, 29, 30]. As, self-service technologies similitude information – technology transformation in various fields, (Eg: Online technologies, Automated technologies) different attempts like the technology acceptance model [31]. Unified theory of acceptance and use of technology innovations diffusion theory [32, 33].

Theory of Reasoned action and theory of planned behaviour have been used by the researchers for exploring QR Code payment solutions and NFC enabled payment solutions adoption phenomenon among the banking customers not only these researchers, the technology readiness index (TRI) framework of, which highlighted four personal traits of customer (such as optimism, innovativeness , discomfort , insecurity) in context of online and other automated technology has also been replicated with reference to the adoption of SST's among the customers etc, [34, 35, 36, 37, 38, 39, 40, 41, 42, 28]. All the aforesaid replications have validated the relevance of the TRI traits in exploring the personal disposition of the customers toward the readiness of adopting QR Code Payment solutions and NFC enabled payment solutions.

On the whole, all the attempts of such kind have identified that the decision of the customers relating to the technology adoption depends on three aspects, that is, technology attributes, presence of supporting conditions, and the personal attributes of the customers [31]. Technology attributes refers to the features of the technology including which includes perceived usefulness of the technology, and Relative advantage, whereas facilitating conditions refer to the presence of such conditions (such as Technical Support, Manual support, and so on) that hold up the application of Self – Service Technologies for serving banking requirements of the customers [30, 43, 31].

Further, personal attributes refer to the customer – specific attributes, such as their technology readiness, and Self – Efficacy, that encourage or discourage consumers from adopting the technology [39, 43]. Previous studies in the local context have brought in the aspect that there is a lack of knowhow on technology in the local context.

In view of the above-mentioned aspects, numerous studies have been made by the researchers in different situations to examine QR Base payment systems adoptions behaviours of the consumers [44]. These researchers conducted studies to explore the adoption of internet banking based on UTAUT models developed by, in addition (Cheng, Lam, & Yeung, 2006), studies the adoption of internet banking with TAM, developed by [31, 30].

Also, literature has revealed to be enriched with studies integrating two or more models of this nature. As an example [45], did explore Internet Banking adoption modes through the integration of Technology Adoption Model with another model, perceived characteristics of innovation, created by but an insight into these studies of this nature has raised certain issues [46, 47].

Emphasized that the studies of this nature indicate that while formation of the framework for the study, researchers have taken a favoured model (based on their liking and perception or referral researches) also states that they have largely ignored the contributions of other alternative models in explaining SST's adoption behaviour of the consumers Further, it has been identified that certain constructs used by the researchers for exploring the QR Code payment modes and NFC adopted payment modes decision of the customers have been developed in contexts other than self-service technologies offered to the banking consumers [31].

As emphasised by perceived usefulness has been developed in Technology Adaption Model with reference to employees / customers using information technology at their workplace. However, perceived usefulness has been developed in context other than SST's the construct has been widely used with reference, to the adoption of QR Code Payment solutions and NFC enabled Payment solutions among the banking consumers [47, 30, 48]

Also, it is revealed that the same construct has shown significant impact on the QR Code payment solutions and NFC enabled payment solutions adoption behaviours of the consumers in different contexts and settings. Similarly self – efficacy has been found to show significant (direct and indirect) impact on the

self-service technologies, adoption decision of the consumers in various contexts, the analysis of these studies of this kind have pointed toward the need to review all the above-mentioned constructs prior to considering them for further research in the field of QR base payment systems and NFC enabled payment mechanisms [49, 50]. In addition, with a view to analyse all such kind of constructs with relation to self-service technologies (SST's)

adoption and implementation among the banking consumers, the present construction, on the framework have been composed.

Conceptual Framework
The Framework for the research is stated below. The research would be focused on Usage of QR Code payment modes enabled payment modes by the local consumers.
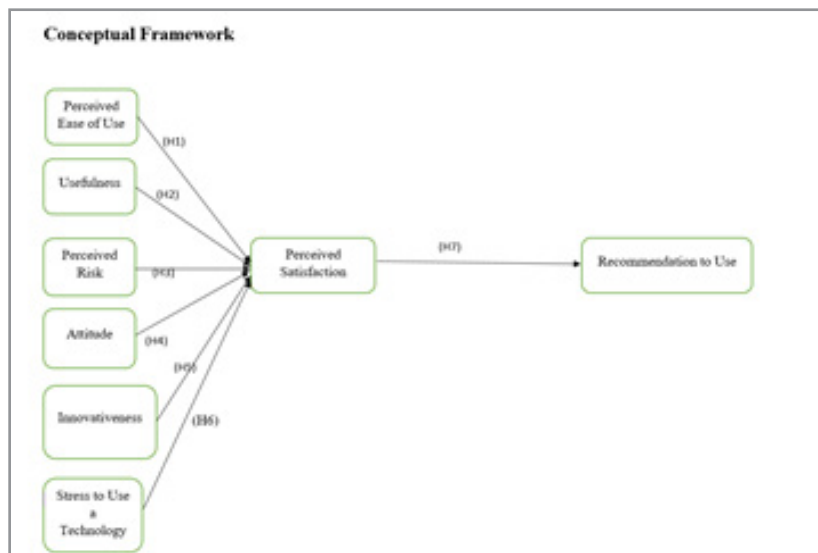
Variables
The Variables considered on the framework to be:
a)   Independent Variables (Exogenous Variable) – Perceived Ease of Use, Usefulness, Perceived Risk, Attitude, Innovativeness, Stress to Use
b)   Dependent Variables (Endogenous Variable) – Recommendation to Use
c)   Mediating Variables (Intervening Variable) – Perceived Satisfaction

Variable	Number of Items
Perceived Ease of Use (PEOU)	7
Perceived Usefulness (PU)	5
Perceived Risk (Risk)	4
Attitude (ATTD)	6
Perceived Satisfaction (PS)	4
Recommendation to Use	3
	29

Methodology
The population considered for the research are 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 participants are capable of performing online transactions.

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 the sampling size of 352 respondents were obtained [51]. The sampling mechanism adopted for the research to be – sample design to be non-probability sampling and in this the mechanism Convenience Sampling.

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 on 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 352 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 and Cohen, 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 352 with a 15% positive variance.

Hypotheses	Relationship
H1	Perceived ease of use positively affects Perceived Satisfaction
H2	Perceived usefulness positively affects Perceived Satisfaction
H3	Perceived risk positively affects Perceived Satisfaction
H4	Attitude positively affects Perceived Satisfaction
H5	Innovativeness positively affects Perceived Satisfaction
H6	Perceived Satisfaction positively affects Recommendation to Use

Results and Findings

Sample Characteristics

There were 352 respondents in the survey. The respondent's 'demographic' profiles are addressed through the following section:

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 is documented below.
Descriptive statistics with of respondents:

Table 01: Descriptive statistics with of respondents

Demographics		Frequency	Percentage
Total Participants	352		
Gender	Male	283	80.40
	Female	69	19.60
Age	20-30 years	103	29.10
	31-40 years	142	40.30
	41-50 years	60	17.60
	Above 50 years	45	12.80
Level of Education	O/L	2	0.40
	A/L	41	11.60
	Degree	134	38.10
Profession	Masters	166	47.20
	PhD	09	2.60
	Employed	308	87.50
	Self Employed	44	12.50

According to the above table of Number of participants by age, the majority of the participants are reflected with in the age group of 31-40 years (40.30%). Further, it is noted that the participants in the range of 20 – 30 years (29.10%) was also to be significant in comparison to the overall participants. Hence, we could come to a conclusion that the overall participants for this survey was quite competent in handling technology driven devices and in high tech savvy.

According to the above table of Number of Participants by Gender, the majority of the participants are reflected by the Male group (80.40%), and this is a clear indication that males are particularly interested and technology savvy, when it comes to the opposite gender. This is a clear indication of how the local Sri Lankan population would react to the latest technology in a male dominated context.

According to the above table of Number of Participants as per the Level of Education, it is noted that majority of the participants have completed their master's degrees' programs (47.20%) and there are participants who have completes degree programs (38.10%) and 2.6% have even completed reading for their PhD. Hence, it is noticeable that the participants are from an educated background.

According to the above table of Number of Participants by Profession, it is noted that 87.50% of the participants are employed. Self-employed participants presented were 12.50%, where we can derive that all the participants engage in any mode of financial relationship with the banks and financial institutions.

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
Perceived Satisfaction	0.839	4	0.880	4
Recommendation to Use	0.914	3	0.924	3
Total		29		27

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.

Normed Chi-Square=1.930
CFI=.955
RMSEA=.051
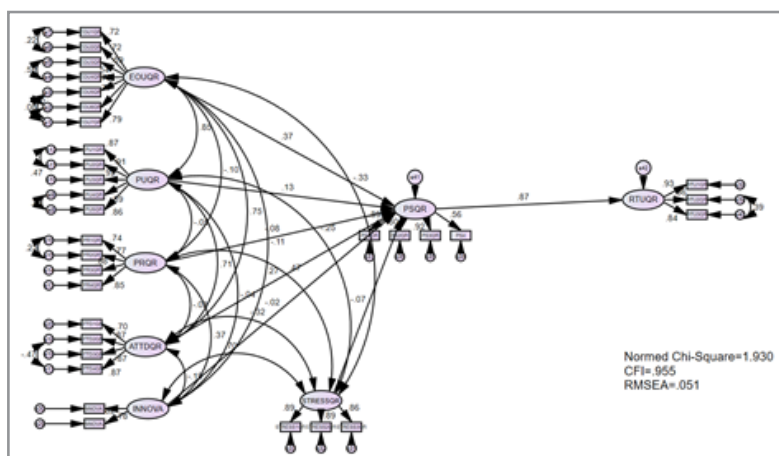
After having analysed the Structural Equation model following model fit has been derived. While considering the model fit indices, P – value is 0.000, where the indices is statistically significant and acceptable as ≥ 0.05 (Joreskog & Surbon. While considering the CMIN/df which reflects 1.930 on the default model is statistically significant as it is ≤ 5, (March & Hocevar 1985), therefore which is acceptable. GFI indices reflects as 0.874 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 0.900 and will be taken into consideration as is ≥ 0.80. In analysis of the Base Line Comparison, CFI which reflects 0.955 which is ≥ 0.90, (Hu & Bentler, 1999). While analysing RMSEA of the default model which reflects 0.051, which is acceptable < 0.05. 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.

			Estimate	S.E.	C.R.	
PSQR	<---	EOUQR	.268	.086	3.102	Supported
PSQR	<---	PUQR	.077	.058	1.311	Not Supported
PSQR	<---	PRQR	-.043	.028	-1.549	Not Supported
PSQR	<---	ATTDQR	.167	.046	3.605	Supported
PSQR	<---	INNOVA	-.008	.036	-.218	Not Supported
PSQR	<---	STRESSQR	-.039	.040	-.972	Not Supported
RTUQR	<---	PSQR	1.545	.142	10.889	Supported

Hypotheses (H1) - Perceived ease of use positively affects Perceived Satisfaction 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 ($\beta = 0.268$ & $p < 0.000$), which is significant and supported to the statement. Having derived the above results, Perceived Ease of Use has a direct and positive relationship over Perceived Satisfaction in using the QR Payment modes in the consumers' daily usage.

Hypotheses (H2) - Perceived Usefulness positively influences Perceived Satisfaction 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 ($\beta = 0.077$ & $p = 0.190$ where should be $p < 0.05$), hence which will be not significant and not supported to the statement. With the results for the (H2) it is clear that Perceived Usefulness does not reflect a direct and positive relationship over Perceived Satisfaction to Use, the QR Payment modes in the consumers' daily usage.

Hypotheses (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 ($\beta = - 0.043$ & $p < 0.121$), which is negative and can be illustrated as Perceived Risk has a negative relationship and impact on the Perceived Satisfaction to Use the QR Payment modes in the consumers' daily usage. In the context of this research Perceived risk positively influences user's Perceived Satisfaction to use QR Code base enabled payment solutions have been rejected.

Hypotheses (H4) - Attitude towards QR Code Base enabled payment solutions has a positive influence on Perceived Satisfaction 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 ($\beta = 0.167$ & $p < 0.000$), which is significant and supported to the statement. With the results derived, Attitude has a direct and positive relationship over Perceived Satisfaction to Use, the QR Payment modes in the consumers' daily usage.

Hypotheses (H5) – Innovation towards QR Code Base enabled payment solutions has a positive influence on Perceived Satisfaction 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 ($\beta = -0.008$ & $p < 0.827$), which is not significant and does not support to the statement. With the results derived, Innovation does not have a direct and positive relationship over Perceived Satisfaction to Use, the QR Payment modes in the consumers' daily usage.

Hypotheses (H6) – Stress towards QR Code Base enabled payment solutions has a positive influence on Perceived Satisfaction to use QR Code Base enabled payment solutions. The statement cannot be acceptable as per the above stated derived results from the research analysis. Where ($\beta = -0.039$ & $p < 0.331$), which is significant and supported to the statement. With the results derived, Stress does not have a direct and positive relationship over Perceived Satisfaction to Use, the QR Payment modes in the consumers' daily usage.

Hypotheses (H7) – Perceived Satisfaction towards QR Code Base enabled payment solutions has a positive influence on 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 ($\beta = 1.545$ & $p < 0.000$), which is significant and supported to the statement. With the results derived, Perceived Satisfaction has a direct and positive relationship over Recommendation to Use, the QR Payment modes in the consumers' daily usage.

Conclusions and Recommendations

This study is empirical research on determining factors in the adoption and recommendation of QR Code enabled payment solutions by the Sri Lankan consumer. Where this research analyses the effect of Perceived Satisfaction over Intention to Use the technology how would have impacted the recommendation of the QR Code payments.

Taking a recap of the objective 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 to measure local consumers' perception and adoption towards using the QR Code payment modes for their daily usage [52, 53, 10].

Having logically performed the research on Recommendation to Use, the study put forward the relationships affected between Ease of Use, Perceived Usefulness, Perceived Risk, Attitude, Innovativeness and Stress to Use with the Perceived Satisfaction 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, Perceived Usefulness, Innovativeness and Stress to Use variables were identified as not significant in determining the consumers' intention to use the QR Code payment platform in Sri Lanka.

The findings clearly identify that users of QR Platforms who performs transactions has a favourable attitude and will have a positive impact on the Recommendation to use these platforms [54, 55, 28, 56]. These studies conducted elaborate more on user's attitude to be a major driving force in usage of latest technology and adoption to QR Code payment modes. Hence, the research derives that attitude has a positive influence on the Recommendation to use the Lanka QR for the consumer.

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 research made in India and China also, clearly states on the significant influence on the Ease of Use in using latest technology [10, 56, 57, 58, 59]. The users' Recommendation to use is purely driven by the Ease of Using the technology.

As per the derived results on Perceived Risk, Perceived Usefulness, Innovativeness and stress to use it is clearly noted that there is a negative impact on the Perceived Satisfaction to Use

QR Code Payment platforms in the local context. With reference to the previous studies made by defines the pleasure in using QR Code payment platforms and the increase in usage in China [56]. Previous studies made in certain countries such as India, China, Lebanon have derived that consumer is concerned about digital payments, as there is somewhat technology knowhow is required [58, 60, 61].

The key objective of this research is to determine the constructs which has the influence on User's Perceived Satisfaction and the recommendation to use the QR Code Base payment platform in Sri Lanka. Having looked on previous studies made on Mobile Wallets and digital payment modes the technology adoption has been the main focal point of the research made on User's Intention. [62, 63, 64].

However, taking into consideration the Sri Lankan context, it is notable to mention that this is the first research made on Lanka QR Code base platform usage by the consumers. This research did derive statistically significant relationships connecting intention to use and perceived satisfaction of Lanka QR Code base payments.

This research confirms the consumers' Perceived Satisfaction influence with 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 [64, 65].

Numerous previous studies related to User's Perceived Satisfaction and Recommendation to Use in various other countries also identified that there is a straight and strengthened correlation with the insight of usage on mobile payment and digital technology [66, 67, 68, 69, 15, 70, 71] has already stated a related find that once a consumer can perform transactions or use a digital platform easily and conveniently, that there is a tendency for the consumers to provide positive notes they would endorse the technology to others.

The respective studies identified particularly once the technology is easy and convenient to use the consumers would opt for digital and mobile payments. Hence, this research clearly denotes that consumers would use the Lanka QR payment methods if the technology supported would be convenient and easy to use by the consumer [72, 73, 74, 75]. stated particularly if the consumers distinguish good and effective any of the technologies they use, the consumer will most undoubtedly recommend the technology to the friends and family. Therefore, the significance relationship between perceived satisfaction and the recommendation to use the technology is clearly justified and as per the results derived this relationship is clearly denoted.

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 [15]. Present consumers have the options of freely communicating via social media on their experiences of technology usage.

All social network platforms consumers' use to share their views and thoughts on the latest technology they have commenced using and to provide any possible opinions on the technology. All social media networks are a latest trend for consumers to share their behavioural intentions to adopt and recommend the latest technology to others [15].

All these social network platforms are highly critical in spreading behavioural intention messages. These messages can be negative or positively impacted to the consumer. Consumers will resist the usage if the recommendations are negative. [76, 77, 78]. The direct impact of Perceived Satisfaction and Recommendation to Use the technologies have been significant. However greater the Social Influence will minimise the consumers perceived satisfaction and further effect the consumers' recommendation to use QR Code Base Payment platforms.

The users will always accept a technology if someone else would recommend of the technologies use. [79, 57]. The theory model UTAUT2 denotes Social Influence as the key factor of adoption of any latest technology by the consumers [73, 34, 80]. Outcomes obtained from past research confirmed that the finds are reflected that family, friends, social groups, peers and colleagues mostly influence the consumers' intention to use any technology [81, 82, 80, 83].

People are mostly influenced by social media, recommendations and word of mouth, in adopting to any latest technology. In such context Social Influence is highly believable to motivate the consumers in adopting and using any latest technology. In line with this research, the respondents that participated for the research agreed to statements in the questionnaire stated, "I do not use QR Code Payment modes because my family thinks I should not use it". The participated respondents to the questionnaire accepted that their decision to accept a new technology is influenced by family and friends. [84, 85].

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 [86]. All, these usages of QR should inculcate the habit of QR usage in the local context. [72, 87, 74].

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 into consideration the global research, in this too, the user's perceived satisfaction and the recommendation to use was minimum. [69, 87, 47, 10].

The results derived from this current research shows 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 [12].

Therefore, this research would have been an early investigation into 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 [88-90].

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 [91-100].

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 [101-120]. 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 [121-130].

These recommendations will determine the success and failures of the QR Code base payment systems in the country [131-140]. This research provides important insights and new modes such as social networking liking to measure the consumers' behavioural intention to use such latest technologies [141-150].

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 [151-160]. 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 [161-170].

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 [171-180].

Furthermore, attitude also has been a key determinant in creating a constructive impact on intention to use QR Code Base payment modes [181-190]. 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 [191-200].

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 [201-207].

References
1. ITU (2022) International Telecommunications Union. Retrieved from International Telecommunications Union: https://www.google.com/search?q=international+telecommunication+union&oq=international+&aqs=chrome.2.0i3j69i57j69i59j0i131i433i512j46i175i199i512j0i131i433i512l2j0i512j0i131i433j46i175i199i512.8159j0j15&sourceid=chrome&ie=UTF-8.
2. Co (2019) Speaking of Health: Assessing Health. Retrieved from
3. World Finance (2019) World Finance 2018. Retrieved from How leading banks are adapting to a constatly changing financial sector.
4. Central bank of Sri Lanka (2019) Mobile Phone based payment mechanisams. Payment Bulletin p. 20.
5. Albert Bandura (1997). Self Efficacy Towards a unifying theory of behavioral change 84: 191-215.
6. Albert Bandura (2004) Swimming against the mainstream. The early years from chilly tributary to transformative mainstream. Behaviour research and thearpy 42: 613-630.
7. Abhishek, Hemchand S (2016) Adoption of sesor - based communication for mobile marketing in India . Journal of Indian Business Research 8: 65-76.
8. AGU, B. O. (Jan.-Mar. 2016). Mobile Banking - Adoption and Challenges in Nigeria. International Journal of Innovative Social Sciences & Humanities Research 4: 17-27.
9. Ajzen I (1991) The theory of planned behavior organizational behaviour and human decsion process 50: 179- 211.
10. Akinci S, Aksoy S, Atilgan E (2004) Adoption of Internet banking among sophisticated consumer segments in an advanced developing country. International Journal of Bank Marketing 22: 212-232.
11. Akturan U, Tezcan N (2012) Mobile Banking Adoption of

the youth Market: Perceptions and Intentions. MArketing Intelligence & Planning 30: 444-459.

12. BM (1997) Internet Society. Retrieved from Internet Society : http://www.internetsociety.org/internet/what-internet/history-internet/brief-history-internet.

13. Venkatesh V, Micheal Morris G, Gordon Davis B, Fred Davis D (2003). User Acceptance of Information 27: 425-478.

14. Alalwan AA, Dwivedi YK, Rana N (2017) Factors Influencing adoption of mobile banking by Jordanian Bank customers. Extenfing UTAUT2 with trust. . International Journal of Information Management 37: 99-110.

15. Alqudah AA (2014) Accepting Moodle by Academic Staff at the University of Jordan: Applying and extending TAM in Technical Support Factors. European Scientific Journal 10: 18.

16. Amoroso D, Watanabe RM (2012) Building a research model for mobile wallet consumer adoption. The case of mobile Suica in Japan. Journal of Theoretical and applied eletronic commerce research 7: 94-110.

17. Andrews E (2013) Ask History. Retrieved from Ask History: http://www.history.com/news/ask-history/who-invented-the-internet.

18. Arif MS, Min YS, Zakaun N, Ishak N (2012) The impact of computer self - efficacy and technology acceptance model on brhavioural intention in internet banking system. Review of Integrative Business and economics 2: 587-601.

19. Bandura (2004) Swimming against the mainstream The early years from chilly tributary to transformative mainstream. Behaviour Research and Thearpy 42: 613-630.

20. Bandura A (1994) Self Efficacy. Encyclopedia of Human Behaviour 4: 71-81.

21. Bandura A (1997) Self Efficacy Toward a unifying theory of behavioral change . W H Freeman and company 8: 191-215.

22. Bank ND (2018) Annual Report. Colombo: NDB Bank.

23. Benbasat I, Barki H (2007) Quovadis TAM. Journal of Association of Information Systems 8: 211-218.

24. Berndt AD, Saunders SG, Petzer DJ (2010) Readiness for banking technologies in developing countries. Southern African Business Review 14: 47-76.

25. Botchwey EA (July 2014). Electronic Banking and the Challenges of the Ghanaian Business Environment. International Journal of Humanities and Social Science 4: 274-284.

26. Bullock (2017) 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/.

27. BusinessStandard (2022) 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.

28. CP (2011) The Long March of the Central Bank - 60 Years of Central Banking in Sri Lanka. 60th Anniversary Commemorative Volume of the Central Bank of Sri Lanka p. 1.

29. Calzada J, Struch A (2011) Telefonía móvil en España: regulación y resultados. Cuadernos Económicos de ICE 39-70.

30. Central Bank of Sri Lanka. (2018). Payment and Settlement Systems Circular No 06 of 2018. Colombo: Central Bank of Sri Lanka.

31. Central Bank of Sri Lanka (2021) Payments Bulletin 2021 3Q. Colombo: Central Bank of Sri Lanka.

32. Central Bank S (2020) Launch of the LANKA QR National Initiative. Colombo: Central Bank of Sri Lanka.

33. Cheng TC, Lam D, Yeung A (2006) Adoption of internet banking: An empirical study in Hong Kong. Decision Support System 42: 1558-1572.

34. Chi–Shing, Yiu KG (2007) Factors affecting the adoption of Internet Banking in Hong Kong - Implications for the banking sector. International Journal of Information Management 27: 336-351.

35. Chong AL, Darmawan N, Ooi K (2010) Aoption of 3G services among Malaysian consumers: An empirical analysis. International Journal of Mobile Communication 8: 129-149.

36. Colombage SS (2011). Electronic banking in Sri Lanka: Prospects and Constraints. Economic Review 35: 8-12.

37. Colombage SS (2010) The Potential of Using Mobile Money Systems for Enhancing Financial Inclusion in Sri Lanka 1: 1-24.

38. Colombo DM (2017) Digital Marketer. Retrieved from Digital Marketer: http://www.digitalmarketer.lk/internet-usage-statistics-in-sri-lanka-2016-updated.html.

39. Cruz P, Neto L, Mun~oz-Gallego P, Laukkanen T (2010). Mobile banking rollout in emerging markets. Evidence from Brazil. The international journal of bank marketing 28: 342-371.

40. Cucos L (2022) Uedufy. Retrieved from Uedufy: https://uedufy.com/step-by-step-moderation-analysis-in-amos/.

41. Curran JM, Meuter ML (2005) Self Service technologies adoption: Comparing three technologies. Journal of Service Marketing 19: 103-113.

42. Dabholkar P, Bagozzi R (2002) An attitudinal model of technology-based self service; moderating effects of consumer traits and situational factors . Journal of the Academy of Marketing Science 184-201.

43. Dahlberg T, Guo J, Ondrus J (2015) A critical review of mobile payment research. Electronic commerce research and applications 14: 265-284.

44. Dahlberg T, Huurros M, Ainamo A (2008a) Lost opportunith Why has dominant design failed to emerge for the mobile payment services market in Finland?. In proceedings of the 41st annual Hawaii International conference on system sciences. IEEE computer society press Washington DC.

45. Dahlberg T, Mallat N, Ondrus J, Zmijewska A (2008b) Past Present and future of mobile payment research A literature review. Electronic commerce research and applications 7: 165-181.

46. Dandeniya S (2014) Expanding Financial Services Frontier and Mobile Banking in Sri Lanka. 26th Aniversary Convention 297-308.

47. Davis FD, Bagozzi RP, Warshaw PR (1989) User acceptance of computer technology A comparison of two theoritical models. Management Science 35: 982-1002.

48. Krzysztof Borodaka D, A Scheibe A (2015) Virtual Currency Schemes The future of Financial Mikotajewicz Wozniak Services. Emerald Group Publishing 17: 365-377.

49. Dennehy D, Sammon D (2015) Trends in mobile payments research A literature review. Journal of Innovation management 3: 49-61.

50. Denso Wave (2022) Denso Wave Retrieved from Denos Wave https://www.denso-wave.com/en/technology/vol1.html.

51. Digital (2022) Digital 2022 Retrieved from Digital 2022

https://datareportal.com/reports/digital-2022-sri-lanka.

52. Dilruksy Ravichandran MH (2016) Factors Influencing Mobile Banking Aoption in Kurunegala District. Journal of Information Sustems & Information Technology (JISIT) 1: 24-32.

53. Duartea P, Silva SC, Ferreira MB (2018) How convenient is it? Delivering online shopping convenience to enhance customer satisfaction and encourage e-WOM. Journal of Retailing and Consumer Services 44: 161-169.

54. Dwivedi YK, Rana NP, Jeyaraj A, Clement M, Williams MD (2017) Re-examining the Unified Theory of Acceptance and Use of Technology (UTAUT) Towards a Revised Theoretical Model. Information Systems Frontiers 21: 719-734.

55. Dwivedi Y, Rana NP, Janssen M, Lal B, Williams M, et al. (2017) An emperical validation of a unified model of electronic government adoption (UMEGA). Government Information Quarterly 34: 211-230.

56. 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 theoritical model. Information Systems Frontiers 21: 719-734

57. Francisco Liébana Cabanillas, Juan Sánchez-Fernández, Francisco Muñoz Leiva (2014a) The Moderating effect of experience in the adoption of mobile payment tools in Virtual Social Networks The m-payment acceptance model in virtual social networks (MPAM - VSN) . International Journal of Information Management 34: 151-166.

58. Fonseca D, Navarro I, Puig J (2011) Códigos QR aplicados a la visualización de elementos arquitectónicos In Congreso de la Sociedad Iberoamericana de Gráfica Digital. XV Congreso de la Sociedad Iberoamericana de Gráfica Digital SIGRADI 548-551.

59. Francisco Liébana Cabanillas, Veljko Marinković, Zoran Kalinić (2018) A SEM neural network approach for predicting antecedents of m commerce acceptance. International Journal of Information Management 37: 14-24.

60. Ruchi Garg, Zillur Rahman, Mohamed Rafik Qureshi (2014) Measuring customer experience in Banks Scale development and validation. Journal of Modelling in Management 9: 87-117.

61. Giovanis A, Binioriys, Polychronopoulos G (2012) An extention of TAM model with IDT and security Privacy Risk in the adoption of internet banking services in Greece. Euro Med Journal of Business 7: 24-53.

62. Wen Gong, Zhan G Li, Rodney L Stump (2006) Global Internet Use and access Cultural Considerations. Asia Pasific Journal of marketing and Logistics 19: 57-74.

63. Halley Goodman (2009) The Formation of the Bank of England A response to changing political and economic climate 1694. Penn Libraries pp 10-30.

64. Goyal V, Pandey DU, Batra S (2012) Mobile Banking in India. Practice , Challenges and Security Issues. International Journal of Advanced Trends in Computer Science and Engineering 1: 56-66.

65. Group MM (2019) Internet World Wide Stats - Usage and Population Statistics Retrieved from Internet World Wide Stats Usage and Population Statistics https://www.internetworldstats.com/stats.htm.

66. Hair JF William C Babin BB, Anderson RE (2014) In J FJr, C William, B B Babin, RE Anderson Multivariate Data Analysis Peason.

67. Jun Jie Hew, Voon-Hsien Lee, June Wei (2015) What catalyses mobile apps usage intention An empirical analysis. Industrial Management and Data Systems 115: 1279- 1291.

68. Akram Hossain, 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 44: 76-87.

69. Hsu CL, Chen MC , Chang KC, Chao CM (2010) Applying loss aversion to investigate service quality in logistics A moderating effect of service convenience. International Journal of operations production management 30: 508-525.

70. Xiangpei Hu, Wenli Li, Qing H (2008) Are Mobile Payment and Banking the Killer Apps for Mobile Commerce? Hawaii International Conference on System Science , Proceedings of the 41st Annual Waikoloa HI 7-10.

71. Humbani M, Wiese M (2018) An Intergrated Framework for the adoption and continuance intention to use mobile payment apps. Emerald 37: 646-663.

72. Hwang R, Shiau S, Ding Far Jan (2007) A new mobile payment scheme for Roaming services . Electronic commerce Research and Applications 6: 184-191.

73. India PT (2016) https://yourstory.com/2016/12/pm-modis-bhim-app-cashless-payments-mobiles/. Retrieved from https://yourstory.com/2016/12/pm-modis-bhim-app-cashless-payments-mobiles/: https://yourstory.com/2016/12/pm-modis-bhim-app-cashless-payments-mobiles/.

74. Internet Society (2017) Retrieved from Internet Society.

75. ITU (2020) International Telecommunications Union. Retrieved from International Telecommunications Union: https://www.itu.int/en/Pages/default.aspx.

76. Jiang C, Zhao W, Sun X, Zhang K, Rui Zheng, Weina Qu (2016) The effects of the self and social identity on the intention to microblog; An extention of the theroy of planned behaviour. Computers in Human behaviour 64: 754-759.

77. Joo Y, Park S, Shin EK (2017) Students expectation Perceived Satisfaction and continuence intention to use digital text books. Computers in Human Behavoiur 69: 83-90.

78. Juaneda A, Mosquera E, Murillo Y (2016) Omni Channel Customer Behaviour key drivers of Technology acceptance and use and their effects on purchase intention. Frontiers in Psychology Volume 07: 1-11.

79. Juneja P (2015) MSG Management Study Guide. Retrieved from Managementandscience.com: https://www.managementstudyguide.com/digital-payments-pros-and-cons.htm.

80. Michael Klein, Colin Mayer (2011) Mobile Banking and Financial Inclusion The regulatory Lessons. Frankfurt School of Management 3-30.

81. 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 4: 222-230.

82. Kanal N (2014) Growth of Mobile Banking in India below expectations . Retrieved from Tech 2: https://www.firstpost.com/tech/news-analysis/growth-of-mobile-banking-in-india-below-expectations-rbi-3644293.html.

83. Kapoor K, Dwived Y, Williams M (2015) Examining the role of three sets of innovation attributes for determining adoption of the interbank mobile payment service .Information systems frontier 17: 1039-1056.

84. Karunatilake HN (1986) The Banking and Financial System of Sri Lanka. Colombo: Sri Devi Printing Works.

85. Kenton W (2019) Investopedia. Retrieved from https://www.investopedia.com/terms/p/payment.asp:https://www.investopedia.com/terms/p/payment.asp.

86. Gil Son Kim, Se-Bum Park, Jungsuk Oh (2008) An examination of factors influencing consumer adoption of short message service (SMS). Psychology and Marketing 25: 769-786.

87. Koenig Lewis N, Palmer A, Moll A (2010) Predicting young consumers' take up of mobile banking services. International Journal of Bank Marketing 28: 410-435.

88. Kumar A, Seri S (2014) Banking on Mobile wallet - achieve significant benefuts through proactive involvements in mobile wallets. Bangalore. Infosys.

89. Meuter LM, Ostrom LA, Roundtree IR, Bitner MJ (2000) Self Service Technology:Understanding customer satisfaction with Technology based service encounters. Journal of Marketing 50-64.

90. Lacerte R (2019) How customers are rethinking engagement in the digital era. Retrieved from https://bit.ly/2Uq3Bt3.

91. Lanka CA (2019) Census and Statistics. Retrieved from Census and Statistics.

92. Lanka CB (2016) Payments Bulletin. Payments Bulletin 20.

93. Lana CB (2017) 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.

94. Lanka CB (2018) Payment and Settlement Systems Circular No 06 . Payment and Settlement Circular. Colombo, Western Province, Sri Lanka: CBSL.

95. Lanka CB (2019) 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.

96. Lanka CB (2019) Mobile Phone Based Payment Mechanisama. Payments Bulletin 20.

97. Lanka CB (2021) Payment and Settlement Bulletin. Payment and Settlement Bulletin.

98. Lanka CB (2021) The Payment Bulletin. The Payment Bulleting Q4, 2.

99. Laukkanen T, Kiviniemi V (2010) The role of information in mobile banking resistance. The international journal of bank marketing 372-388.

100. Lee M (2009) Understanding the behavioural intention to play online games, an extension of the theory of planned behaviour. Online Information Review 33: 849-872.

101. Leiner BM (1997) Internet Society. Retrieved from Internet Society: http://www.internetsociety.org/internet/what-internet/history-internet/brief-history-internet.

102. Leong L, Hew T, Tan G, Ooi K (2013) Predicting the determinants of the NFC - enabled mobile credit card acceptance: A neural networks approach. Expert systems with applications 40: 5604-5620.

103. Li H, Sarathy R, Hu H (2011) The role of affect and cognition on online consumers' decision to disclose personal information to unfamiliar online vendors. Decision Support System 51: 434-445.

104. Liebana–Cabanillas F, L-R (2017) Predictive and explanatory mpdeling regarding adoption of mobile payment systems. Technological Forecasting and Social change 120: 32-40.

105. 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.

106. Liebana–cabanillas F, Ramos de Luna I, Montoro-Rios F (2015) User Behaviour in QR mobile payment system: The QR payment acceptance model. Technology Analysis & Strategic Management 27: 1031-1049.

107. Liébana-Cabanillasa F, L-R (2017) Predictive and Explanatory modelig regarding adoption of mobile systems. Technological Forecasting & Social Change 120: 32-40.

108. Liébana-Cabanillas F (2012) El papel de los medios de pago en los nuevos entornos electrónicos. Doctoral Thesis.Marketing and Market Research. University of Granada.

109. Liébana-Cabanillas F, Sánchez-Fernández J, Muñoz-Leiva F (2014) Antecedents of the adoption of the new mobile payment systems: The moderating effect of age. Computers in Human Behaviour 35: 464-478.

110. Liébana-Cabanillas F, Veljko M, Iviane Rd, Zoran K (2018) Predicting the determinants of mobile payment acceptance. A hybrid SEM - neural network approach. . Technological Forecasting and Social Change 129: 117-130.

111. Lin C, Shih H J S P (2007) Intergrating technology readiness into technology acceptance: The TRAM Model. Psychology & Marketing 24: 641-657.

112. Liu R, Wu J, Buck GF (2021) The influence of mobile QR Code payment on, payment pleasure. Evidence from China. Emerald 39: 337 -356.

113. Ltd K (2022) Digital 2022 Sri Lanka. Retrieved from Digital 2022 Sri Lanka: http://www.statistics.gov.lk/PopHouSat/VitalStatistics/MidYearPopulation/Midyear%20population%20by%20district.pdf.

114. Luna IR, Liébana-Cabanillas F, Sánchez-Fernánd 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.

115. Madan K, Yadar R (2018) Understanding and predicting antecedents of mobile shopping adoption: A developing country perspective. Asia Pacific Journal of Marketing and Logistics 30: 139-162.

116. Madan K, Yadav R (2016) Behavioural intention to adopt mobile wallet: A developing country perspective . Journal of Indian Business Research 8: 227-244.

117. Magotra I, Sharma J, Sharma S (2019) Adopting of self - service technologies among banking customers: A revisit. International Journal of Applied Management and Technology 18: 67-72.

118. Mallat N (2007) Exploring consumer adoption of mobile payments. A qualitative study. Journal og strategic Information systems 16: 413-432.

119. Manikandan M, Chandramohan S (2016) Self Service banking technologies Opportunities and challenges . International journal of Innovative Knowledge concepts 6: 1-4.

120. Martins C, Tiago O, Popovic A (2014) Understanding the internet banking adoption: A Unified theory of acceptance and use of technology and perceived risk application. International Journal of Information Management 34: 1 - 13.

121. Masamila B, Mtenzi J, Said: Tinabo R (2010) A Secured Mobile Payment Model for Developing Markets. Communications in Computer and Information Science 87: 175 -

182.

122. Mehmood S, Najmi A (2017) Understanding the impact of service convenience on customer satisfaction in home delivery. Evidence from Pakistan. Research Gate .

123. Meuter LM, Ostrom AL, I R, Roundtree, Bitner MJ (2000) Self service technology : Understanding customer satisfaction with technology based service encounters. Journal of Marketing 60: 50-64.

124. Michael, Colin Mayer (2011). Mobile Banking and Financial Inclusion: The Regulatory Lessons. Frankfurt School of Finance & Management 3-30.

125. Miltgen C, Popovic A, Oliveira T (2013) Determinents of end - user acceptance of biometrics. Intergrating the big 3 of technology acceptance with privacy context. Decision support systems 56: 103 - 114.

126. Mohammadi H (2014) A Study of Mobile Banking usage in Iran. Emerald Journals 33: 733-759.

127. Moore G, enbasat I (1991) Development of an instrument to measure the perceptions of adopting and information technology innovation. Information Systems Research 2: 192 - 222.

128. Morton F (2006) Consumer Benefit from Use of the Internet. Innovation Policy and the Economy 6: 67-90.

129. Moser F (2015) Mobile Banking a fashionable concept or an Institutionalized channel in future retail banking? Analyzing patterns in the practical and academic mobile literature. International Journal of Marketing 33: 162-177.

130. Murali S, Mallikarjuna V (2014) Consumer adoption of net bnking in Tier -111, Cities of Andhra Pradesh. An empirical Study. International Journal of Scientific Research 3: 269-272.

131. Nasri W, Charfeddine L (2012) An exploration of Facebook. com adoption in Tunisia using technology acceptance model (TAM) and theory of reasoned action (TRA) Interdisciplinary . Journal of contemporary research in business 4: 948-968.

132. Nassima B (2019) Digital Payment in Algeria: Opportunity to redefine the economic growth model. Journal of Management and Economic Sciences Prospect 3: 295-308.

133. Nidhi S, Neena S, Liébana-Cabanillas FJ (2020) Determining factors in the adoption and recommendation of mobile wallet services in Inda Analysis of the effect of innovativeness, stress to use andsocial influence. International Journal of Information Management 50: 191 - 205.

134. Oliveira T, Thomas M, Baptista G, Campos F (2016) Mobile payment Understanding the determinants of customer adoption and intention to recommend the technology. Compuers in Human Behavior 61: 404-414.

135. Parasuraman A (2000) Technology Readiness Intex (TRI): A multi - item scale to measure readiness to embrace new technologies. Journal of Science Research 2: 307-320.

136. Paulo D, Susana CE (2018) How convenient is it? Delivering online shopping convenience to enhance customer satisfaction and encourage e WOM. Journal of Retailing and Customer services 44: 161-169.

137. Payments D (2022).

138. Peter J, Comfort D (2019) Stories and Storytelling in the UK Banking . Athens Journal of Business Economics 1-17.

139. Pikkarainen T, Pikkarainen K, Karjaluoto H, Pahnilala (2004) Consumer accetance of online banking: An extention of technology acceptance model. Internet research 14:

224-235.

140. Pillai R, Seedhar R (2014) Infoysis. Retrieved from Banking in India: Evolution in technology.

141. Podder B (2005) Factor's influencing the adoption and usage of internet banking: A New Zeland Perspective. (Master's Thesis). Auckland University of Technology, Auckland , New Zealand.

142. Premarathne (2011) The Long March of the Central Bank - 60 Years of Central Banking in Sri Lanka. 60th Anniversary Commemorative Volume of the Central Bank of Sri Lanka 1.

143. Purba J, Purba Stie, Pengembangan Bisnis, manajemen (2015). Strategic innovation through technology readiness and acceptance in implementing ICT for corporate sustainability. 12th International annual symposium on Management 1-14.

144. Quoc TP, Xuan PT, Sanjay M, Rytis M (2018) Relationship between convenience, percieved value and repurchase intention in Online Shopping in Vietnam. MDPI Sustainability.

145. Rajasekara S, Philominathan P, Chinnathambi V (2014) Research Methodology.

146. Ram S (1989) Successful innovation using strategies to reduce consumer resistance . Journal of product innovation management 6: 20-34.

147. Ram S, Jagdish NS (1989) Consumer resistance to innovation The Marketing problem and its solutions. Journal of consumer marketing 6: 5-14.

148. Ramos de Luna IR, 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 14.

149. Rana NP, Dwivedi YK, Williams MD, Weerakkody V (2014) Investigating success of an e-government initiative: Validation of an integrated IS success model. Springer Information System Frontiers 17: 127-142.

150. Riquelme HE, Rios R (2010) The moderating effect of gender in the adoption of mobile banking. International Journal of Bank Marketing 28: 328-341.

151. Rogers EM (2003) Diffusion of Innovations , 5th Edition. Free Press New York.

152. Rogers EM (1995) Diffusion of Innovation (4th edition). NY free press.

153. Rogers M, Ajzen I (1975) Belief, Attitude, Intnetion and Behaviou. Bostan MA, Addison Wesley.

154. Ruchi ZR (2014) Measuring Customer experience in Banks: Scale Development and Validation. Journal of Modelling in Management 9: 87-117.

155. Sathye M (1999) Adoption of Internet Banking by Australian Consumers: An empirical investigation. International Journal of Bank Marketing 17: 324-334.

156. Saxena R, Sinha M, Majra H (2016). Banking in India: Role of Self Service Technologies. Thriving in New World Economy 5: 186-189.

157. Schierz PG, Schilke O, Wirtz BW (2009) Understanding Consumer Acceptance of mobile payment services; An empirical analysis. Electronic Commerce Research and Applications 9: 209 - 216.

158. schierz P, schilke O, wirtz B (2010) Understanding consumer acceptance of mobile payment services: An empirical analysis. Electronic commerce Research and applications

9: 209-216.

159. Sekaran U, Bougie R (2010) Research Methods for Business - A Skill Building Approach. In U. Sekaran, & R. Bougie, Research Methods for Business - A Skill Building Approach 69-80.

160. Sekaran U, Bougie R (2013) Research Methods for Business A skill Building Approach. New Delhi: Wiley.

161. Selvakumar JJ (2010) Impact of srvice quality on customer percieved satisfaction in public sector and private sector banks. SMS Varanasi 8: 3-12.

162. 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 33: 651-664.

163. Shambare R (2013) Technology readiness and EFTPoS usage in Zimbabwe, . International Journal of Business Economic Development 1: 13-22.

164. 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 44: 65 - 75.

165. Shaw N (2014) The mediating influence of trust in the adoption of the mobile wallet. Journal of retailing and consumer services 21: 449 - 459.

166. Shengnan Han VH (2002) A Foresight Framework for understanding the Future of Mobile Commerce. Journal of Systems & Information Technology 6: 19-39.

167. Shin D (209) Towards an understanding of the consumer acceptance of mobile wallet. Computer in Human Behaviour 25: 1343-1354.

168. Siddhartha D, Rik P, Sanjaya F (2011) Factors affecting behavioural intnetions towards mobile banking usage: Empirical evidence from India. . Romanian Journal of Marketing 6-28.

169. 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: 944 - 965.

170. Singh R (2013) Bank Exams Today.

171. Nidhi Singh, Neena Sinha, Francisco Liébana-Cabanillas J (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 50: 191 - 205.

172. Site YS (2016) 11 ways in which PM Modi plans to promote a digital cashless Economy.

173. SladeE, Dwivedi Y, Piercy N, Williams MD (2015a) Modeling consumers' adoption intentions of remote mobile payments in the United Kingdom: Extending UTAUT with innovativeness risk and trust. . Psychology & Marketing 32: 860-873.

174. Smith A, Anderson JQ, Rainie L (2012) The Future of Money: Smartphone Swiping in the Mobile Age. Pew Research Centres Internet & American Life Project.

175. Sohail SM (2003) E Banking and Customer Preferences in Malaysia: An Empirical Investigation. Information Science Journal 150: 207-217.

176. Sridhar Seetharam K, Sridhar V (2008) Telecommunication and growth: Causal Model, Quantitative and Qualitative evidance. Economic and political weekly 41: 2611-2619.

177. Srivastava M, Thakur R (2014) Adoption readiness, Personal Innovativeness, Percieved Risk and usage intention across customer groups for mobile payment services in India. Internet Research 369 -392.

178. Statistics CA (2016) Censors and Statistics. Retrieved from Population.

179. Statistics SA (2020) Population . Retrieved from Sencers and Statistics.

180. Stats IW (2017) Internet World Stats. Retrieved from Internat World Stats.

181. Stats IW (2017) Internet World Stats (Usage and Population Statistics).

182. Sujeet KS, Sri Krishna MMSA, Ali T (2016) A multi - analytical model for mobile banking adoption : A developing country perspective. Emerald 133-148.

183. Sundaravej T (2009) Empirical validation of Unified Theory of acceptance and use of technology, model (dissertation), College of business administration, University of Missouri at saint louis.

184. Swulley E (2010) Technology Rejection. The case of the walet phone. Journal of consumer marketing 27: 304 - 312.

185. Tag G, Lee V, Lin B, Ooi KB (2017) Mobile applications in Tourism: The future of the tourism industry. Industrial Management Data System.

186. 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.

187. Tech-ICT (2017) Retrieved from Tech - ICT: http://www.teach-ict.com/gcse_new/internet/internet_www/miniweb/pg6.htm.

188. Thakur R, Srivastava M (2014) Adoption readiness, Personal innovativeness, Perceived Risk and usage intention across customer groups for mobile payment services in India . Internet Research 24: 369-392.

189. Thakur R, Srivastava M (2014) Adoption Readiness, Personal Innovativeness, Percieved Risk and Usage intention across customer groups for mobile payment services in India. Internet Research 369-392.

190. Venkatesh MM, Gordon D (2013).

191. Venkatesh, Michael, Gordon, Davis, Fred. (2003).

192. Venktesh V (2003).

193. Venkatesh V, James Thong YL, Xin Xu. (2012). Consumer acceptance and of Information Technology - Extending the Unified Theory of Acceptance and use of Technology. Emerald Insight 143 - 171.

194. Venkatesh, V, Morris MG, Davis GB, Davis FD (2003) User acceptance of Information Technology Toward a unified view. MIS Quarterly 27: 425-478.

195. VISA I (2017) Lankan Consumers Keen to adopt Digital Payment solutions. Colombo: News Paper Daily FT.

196. Visa I (2017) Lankan consumers keen to adopt Digital Payment solutions: Visa Survey. Daily Financial Times.vishal. (n.d.). mobi.Vishal. (n.d.). Mobile.Vishal. (n.d.). Mobile Bnaking.

197. Walczuch R, Lemmink J, Streukens S (2007) The effect of service employees' technology readiness on technology acceptance. Information and Management 206-215.

198. Walden CC (2002) Mobile Commerce: A Summary of Quests for Value Added Products & Services. Research Gate 463-476.

199. Wang Y, Wang Y, Lin T (2018) Developing and validating a technology upgrade model. Internationl Journal of Information Management 7-26.

200. Williams M, Rana N, Dwivedi Y (2015) The Unified theory of acceptance and use of technology (UTAUT) A literature review. Journal of Enterprise Information Management 28: 443-488.

201. Worldometer (2020) world population clock. Retrieved from World Population Clock: https://www.worldometers.info/world-population/#growthrate.

202. 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 117: 1761-1776.

203. Xu F, Du J (2018) Factors influencing user's percieved satisfaction and loyalty to digital libraries in Chnese Universities. . Computers in human behaviour 83: 64-72.

204. Yang Y, Liu Y, Li H, Yu B (2015) Understanding perceived risks in mobile payment acceptance. Industrial Management and Data Systems 115: 253-269.

205. Young E (2011) Technology in banking: Insight and Foresight. Retrieved from Institute for Development and Research in Banking Technology.

206. Yu C (2012) Factors affecting individuals to adopt mobile banking: Empirical evidence from the UTAUT Model . Journal of Electronic Commerce Research 13: 104-121.

207. Zolkepli IA, Kamarul ZY (2015) Social Media Adoption: The role of media needs and Innovation Characteristics. Computers in Human Behaviour 43: 189-209.