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ASSESSING THE FACTORS AFFECTING THE ADOPTION OF CASHLESS PAYMENTS BY SMALL-SCALE TRADERS: A CASE STUDY ON SRI LANKA

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ABSTRACT

This study investigates cashless payment adoption among small-scale traders in Sri Lanka, emphasizing those with capital investments below Rs. 4 million and workforces of 50 or fewer. Employing a positivist paradigm and a deductive approach based on the extended Technology Acceptance Model (TAM), the research challenges prevailing assumptions. Findings, derived from multiple regression analysis on an 80-trader sample in the Kurunegala district, reveal that associated costs and past exposure insignificantly impact acceptance. In contrast, trust and customer demand emerge as pivotal factors, offering nuanced insights into Sri Lanka's societal shift towards cashless systems. While the study provides practical guidance for policymakers, limitations, such as modest sample size and geographic specificity, warrant cautious interpretation. Future research should diversify samples, adopt mixed methods, and explore emerging technologies for a comprehensive understanding. The study contributes substantively to practical and theoretical realms, challenging conventional assumptions and emphasizing regional variations in small-scale traders' attitudes toward cashless methods.

Keywords: Cashless payments, Cost, Customer demand, Small-scale traders, Trust

1. Introduction

Over time, payment methods have transitioned from barter to cash and now encompass diverse cashless options such as card payments and digital transactions. In 2018, the Asia-Pacific region led global cashless transactions with $195.4 billion, driven by the proliferation of digital payments and fintech, boosting over 6,268 startups in the region. While large-scale enterprises capitalize on cashless advantages, small-scale traders exhibit cautious optimism, creating a global adoption gap favoring larger businesses (Liébana-Cabanillas, 2018). This study focuses on small-scale traders in Sri Lanka, investigating those with a capital investment below Rs. 4 million and a workforce of 50 employees or below. The study focuses on empirically examining factors such as cost, trust, past exposure, and customer demand, elucidating their impact on small-scale traders' willingness to embrace cashless payments.

Notably, most of the existing studies have primarily been conducted overseas. Due to the scarcity of research on factors influencing cashless payment acceptance among traders in Sri Lanka, this study aims to fill this gap. We investigate the impact of cost, trust, past exposure, and customer demand on traders' decisions to adopt cashless payments in the Sri Lankan context.

Understanding the key stakeholders affected by changes in the payment system is crucial for discussing the future direction of cashless payments. While numerous empirical studies focus on customers' opinions, it is essential to recognize the pivotal role of traders in the cashless payment cycle. Despite existing studies primarily addressing the standpoint of large-scale traders, this research specifically aims to identify the perspective of small-scale traders, filling a notable gap in the current literature.

This study's justification is further strengthened by the observation that previous research has predominantly focused on the influence of cost and trust. In contrast, our study extends beyond these common factors to examine the role of past exposure and the impact of customer demand on the influence on traders' acceptance of cashless payment methods.

The prevailing issue lies in the geographical limitation of existing studies on traders' willingness to adopt cashless payments, predominantly focusing on African, European, and certain Asian regions. This raises doubts about the applicability of their conclusions to Sri Lanka, given its unique socio-cultural and economic context, further complicated by recent shifts in post-pandemic and politically unstable conditions (Koop, 2022). Additionally, there is a noticeable gap in research, with most studies emphasizing customer perspectives on cashless payments, neglecting the factors influencing traders. The assumption that large-scale traders favor cashless methods while small-scale traders oppose them lacks substantial empirical backing. To address these gaps, this study specifically explores the impact of factors such as cost, trust, past exposure, and customer demand on small-scale traders' willingness to accept cashless payments.

The study aims to identify whether the norm and take on cashless payments by the traders of Sri Lanka are in line with the global context and to understand how cost, trust, past exposure, and customer demand would influence the willingness of traders to accept cashless payments. For that, we have set the objectives of the study as: (i) To analyze data to understand how cost, trust, past exposure, and customer demand impact traders' willingness to accept cashless payments, and (ii) To compare the study's results with prior empirical research to identify similarities and differences in the general findings.

This research significantly informs Sri Lanka's governmental transition to a cashless society, providing nuanced insights for strategic refinement. It serves as a practical resource for policymakers, offering guidance to optimize the benefits of cashless systems. Small-scale traders benefit by discerning and capitalizing on opportunities to adopt cashless payments. Additionally, it contributes substantively to academic discourse,

providing valuable insights for scholars studying external factors influencing cashless payment acceptance in similar domains.

In this study, we adopt the positivist paradigm, seeking an objective understanding of reality. We use a deductive research approach for hypothesis testing based on existing theories, allowing us to explain relationships between variables and generalize. The research design chosen is conclusive research, focused on providing solutions, and relies on well-defined research objectives. It involves statistical analysis to derive reliable population findings, aligning perfectly with our research objectives and deductive approach. Framing the study around the TAM (Technology Acceptance Model), we have chosen the SPSS tool to carry out a multiple regression analysis to understand how the independent factors influenced the dependent variable. The results after analyzing 80 samples, it was inferred that the traders' acceptance of cashless payments was not significantly influenced by prior experience or associated costs but by the trust and customer demand demonstrated.

2. Literature Review

The willingness to accept cashless payments refers to the people's partiality to embrace the new technological methods of cashless payments over traditional payment methods for their home and work activities (Acheampong, Zhiwen, Antwi, Otoo, & Bediako, 2017). It was also mentioned that willingness is referred to as one's way of action in the coming future, and it also mentioned that accordingly, the traders' future actions are subjected to accepting cashless payments due to its efficient transaction processing speed, reduced worker expenses and accurate management of cash (Karim, Haque, Ulfy, Hossain, & Anis, 2020).

In a study carried out on merchant participation in credit card payment schemes, low-value transaction firms were found to be cost-conscious, as their marginal cost outweighed benefits (Loke, 2007). A similar conclusion arose in a study carried out in the Netherlands, stating that cashless payment costs rise over time, discouraging adoption unless businesses can achieve economies of scale (Jonker, 2011).

However, the study done in Singapore challenged this notion, indicating that increased consumer benefits lead to positive outcomes, attracting merchants to cashless payments (Wright, 2010). In India, the high cost of cash distribution also encourages cashless transactions (Mukhopadhyay, 2016). Given the prevalence of overseas studies, conducting research in Sri Lanka is essential to assess the applicability of these findings to the local context.

When it came to the prior exposure/ experience of the traders with cashless payments, it was mentioned in a study among Kenyan merchants highlighted that prior experience with mobile payments strongly influences traders' openness to adopting cashless payments. In Sweden, a significant shift from cash to card payments has taken place, driven by the acceptance of card transactions by both customers and merchants, especially with the proliferation of point-of-sale (POS) terminals in the past decade. These

trends underline the importance of prior experience (Patricio, Hak, Soest, & Daan, 2018).

Additionally, IT expertise in integrating cashless payments in SMEs has been identified to have a positive impact, echoing the importance of skills and knowledge. Across various geographical areas, including Ghana, Kenya, Sweden, and Indonesia, a consistent pattern emerges prior exposure to cashless payments consistently links with traders' openness to adopting these methods (Astuti & Nasution, 2014).

Trust plays a complex role in traders' acceptance of cashless payments, as evidenced by studies in different countries. In Norway, where trust in existing mobile payment systems was already high, it had little impact on traders' acceptance of Near-Field Communication (NFC) mobile payments (Sajid, 2016). However, in Saudi Arabia and Malaysia, trust had an insignificant influence on large-scale merchants' willingness to adopt mobile payment schemes (Altwairesh, 2021). These findings suggest that trust's relevance varies across regions and is influenced by factors beyond technology infrastructure. In contrast, a study in Spain found that trust, particularly in the security of financial transactions, had a positive correlation with merchants' intent to consume mobile payment systems (Liébana-Cabanillas, 2018).

Customer demand for cashless payments has grown significantly due to perceived ease of use, reduced risk of losing cash, and trust factors. According to (Loke, 2007), large-scale merchants are more willing to accept cashless payments when customer demand for this option is high, as it can boost sales. (Arvidsson N. H., 2017) echoed this sentiment, emphasizing the importance of fulfilling customer needs and enhancing convenience over sales.

3. Methodology

3. 1. Theoretical framework and research design

The theoretical framework which the study was drawn upon was an extended version of the Technology Acceptance Model (TAM) initially designed by Fred Davis in 1985. While the original TAM focused on perceived usefulness and perceived ease of use, our adapted model considers additional factors that can influence human behavior in adopting new technology. This modified TAM allows us to analyze the roles of trust, cost, prior experience, and customer demand in shaping traders' willingness to embrace cashless payments (Thompson, 2017).

The research methodology employed in this study aligns with the positivist paradigm, aiming to comprehend reality logically and objectively while minimizing reliance on subjective human experiences. The deductive method is preferred, as it resonates with positivism, involving the formulation of hypotheses based on accepted theories, the examination of facts, and the revision of theories considering new information. To achieve this, the study utilizes multiple regression analysis and integrates the Technology Acceptance Model (TAM) to explore the acceptance of technology.

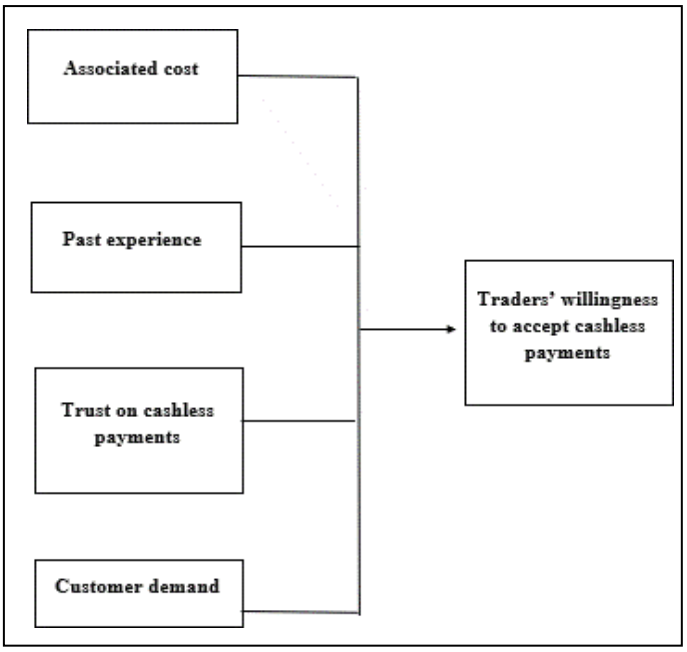

Figure 1. Conceptual Framework.

The research design is conclusive, emphasizing the provision of remedies and the derivation of definitive conclusions. The use of statistical methods for data analysis, specifically employing multiple regression analysis and TAM, is a key aspect of this deductive approach. To ensure reliability in the obtained results, the study utilizes the Statistical Package for the Social Sciences (SPSS), complemented with specified research objectives. The overarching goal is to swiftly generalize quantitatively measurable conclusions by applying a deductive technique within a conclusive research design.

3.2. Data sources

Due to time and budget limitations, the convenience sampling method under non-random sampling was used to collect 80 responses from traders in the Kurunegala district whose capital investment was below Rs. 4 million and had a workforce of 50 employees or below. The choice of this method was driven by practical constraints, limiting the sample size to 80 responses.

In a deductive research study, data collection is pivotal to address the research questions and assumptions (Dudovskiy, 2022). For this study, quantitative data were collected through a questionnaire survey, designed to gather demographic information and data on the relationship between dependent and independent variables. The questionnaire consisted of closed-ended questions as it provides benefits such as comparability, ease of collection, and efficient data processing (Codó, 2008).

3.3. Data analysis

As mentioned above, the study analyses quantitative data gathered from 80 merchants to derive coherent conclusions. The objective of quantitative analysis is to obtain support for our previously formulated hypotheses (Bryman, 2002).

Our chosen analytical model is the multiple regression model, which allows us to assess the significance of relationships between variables. Subsequently, we dissected the test statistics generated from the regression model using ANOVA and t-tests to pinpoint the predictors that wield significant influence over the dependent variable. All these analytical processes were executed using the statistical software SPSS.

The demographic breakdown of traders by age and their highest education level. Among traders aged 21-35, 4% had ordinary-level qualifications, while 19% had degrees or higher. In the 36-50 age group, 14% completed advanced-level education, but 3% stopped before the ordinary level. Traders over 50 had 21% with advanced-level qualifications and 8% below ordinary level.

Over 50% of the traders within the sample have a capital investment of Rs 1 million to 2 million while both the categories of the capital investment of Rs 2 million to 3 million and Rs 3 million to 4 million have around 18% trader investments. Next up is the investment group below Rs 1 million which has about 13% of the sampled traders falling into it.

From the samples collected, over 35% of the traders were from the clothing sector, that is the grocery business sector which consists of up to 20% of the sample while the stationary sector representatives are only around 8% form the sample while the bakery, hardware, jewelry, pharmacy are all represented in around 15% to the sample.

4. Results and Discussion

In this study, the willingness of traders to accept cashless payments is the dependent variable, while cost, experience, trust, and customer demand serve as independent variables. According to the central limit theorem, which applies when the sample size is reasonably large (usually over 30), we can assume that the sample is approximately normally distributed since a sample of 80 traders is analyzed in this study.

When dealing with normally distributed data, the appropriate statistical analysis technique to assess the relationship between the dependent and independent variables is multiple regression analysis. This method enables the simultaneous examination of the combined impact of all independent variables on the dependent variable. It also accounts for variations in the dependent variable due to factors not explicitly considered as independent variables. Furthermore, to delve deeper, we conducted an ANOVA test and t-tests to identify which independent variables significantly influence traders' willingness to accept cashless payments.

In the table below, we observe an R-squared value of 0.139, denoting the proportion of variance in traders' willingness to adopt cashless payments that can be attributed to the independent variables: cost, trust, experience, and customer demand. However, given the relatively high number of independent variables in our model, the reliability of the R-squared value diminishes. To account for this, we turn our attention to the adjusted R-squared value, which adjusts for degrees of freedom. In our analysis, the adjusted R-squared stands at 0.93, indicating that approximately 9.3% of the variability in traders' readiness to embrace cashless payments can be elucidated by the considered factors.

Additionally, the standard error of the estimate, with a value of 0.51438, signifies the portion of the variance in the dependent variable that remains unexplained by the variables included in our regression model.

Table 1: Regression model summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.373(a)	.139	.093	.51438	.139	3.029	4	75	.023

a Predictors: (Constant), Customer_demand, Cost, Past_experience, Trust
b Dependent Variable: Willingness_to_accept

An ANOVA test was conducted to assess the collective impact of the independent variables (cost, trust, customer demand, and past exposure) on traders' willingness to accept cashless payments. The obtained F-statistic was 3.029, which was compared to the critical value from the F table, which stood at 2.46. Since the F-statistic (3.029) surpasses the critical value (2.46), it indicates that at least one of the independent variables significantly influences traders' willingness to accept cashless payments.

Table 2: ANOVA table.

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	3.206	4	.802	3.029	.023(a)
Residual	19.844	75	.265		
Total	23.050	79			

a Predictors: (Constant), Customer_demand, Cost, Past_experience, Trust
b Dependent Variable: Willingness_to_accept

To pinpoint which specific predictor holds this influence, a t-test was performed. Using a default confidence level of 95% and degrees of freedom of 80, the critical value derived was 1.99. When the t-statistic exceeds this critical value, it signifies a significant impact of the respective independent variable on traders' willingness to accept cashless payments. The subsequent section elaborates on which predictors wield such significance.

Table 3: T-test.

	t	Sig.	Confidence Interval	
			Lower Bound	Upper Bound
(Constant)	1.726	.088	-.151	2.115
Past_experience	-.913	.364	-.199	.074
Cost	1.791	.077	-.011	.199
Trust	2.201	.031	.020	.398
Customer_demand	2.548	.013	.051	.418

a Predictors: (Constant), Customer_demand, Cost, Past_experience, Trust
b Dependent Variable: Willingness_to_accept

The first hypothesis examined whether associated costs significantly impact traders' willingness to accept cashless payments. The t-statistic for the cost predictor was 1.791, which falls below the critical value of 1.99. This suggests that based on the sample data, there is no significant relationship between associated costs and traders' willingness to embrace cashless payments. This finding contradicts inferences made in prior studies like those from Jonker (2011) and Luke (2007), which suggested a significant cost-related relationship with the dependent variable. This result, revealing no significant connection between associated costs and traders' willingness to adopt cashless payments in our sample, contributes to our study's objective. It provides valuable insights, comparing our findings with prior studies and identifying the relationship between variables.

$H1_0$: There is no significant relationship between the associated cost and the willingness oftraders to accept cashless payment.

Figure 3. Cost hypothesis.

The next hypothesis examined the significance of traders' past exposure on their willingness to accept cashless payments. The t-statistic (-0.913) compared to the critical value (1.99) leads to the same conclusion as the cost variable. The null hypothesis is accepted, indicating no significant relationship between traders' past exposure to cashless payments and their willingness to accept them in stores. This contradicts findings in a previous study done by Arvidsson (2017) suggested that a positive and significant relationship was active between past exposure and willingness to adopt cashless payments.

$H2_0$: There is no significant relationship between the traders' past exposure and thewillingness of traders to accept cashless payment.

Figure 2. Past exposure hypothesis.

When assessing the significance of trust in traders' willingness to accept cashless payments, the same methodology was applied. The t-statistic of 2.201, derived from the regression model, exceeded the critical t-value from the table, leading to the rejection of the null hypothesis. This indicates a significant relationship between trust and traders' willingness to embrace cashless payments.

However, it's worth noting that most prior studies, including the research done by Sajid (2016) and Altwairesh (2021), have reported trust as an insignificant factor in the decision-making process.

$H3_a$: There is a significant relationship between the trust and the willingness of traders to accept cashless payments.

Figure 4. Trust hypothesis.

The analysis revealed a significant relationship between customer demand and traders' willingness to accept cashless payments, as the t-statistic (2.548) from the regression model exceeded the critical value, leading to the rejection of the null hypothesis. This finding contrasts with a prior study conducted by To (2021), which suggested customer demand was an insignificant factor in traders' decisions. However, Loke (2007) and Osei-

Assibey (2021) support the idea that customer demand indeed plays a significant role in traders' willingness to embrace cashless payments through the findings of their studies.

$H4_a$: There is a significant relationship between customer demand and the willingness of traders to accept cashless payment.

Figure 5. Customer demand hypothesis.

5. Conclusion

This study offers critical insights into cashless payment adoption among small-scale traders in Sri Lanka, emphasizing regional nuances. Unlike other regions, associated costs do not significantly influence small-scale traders' willingness to adopt cashless payments. Increased consumer benefits correlate positively with merchant adoption, supported by comparisons with Singapore and India. Trust emerges as pivotal in Sri Lanka, disputing varied outcomes in other countries. Addressing the overlooked perspective of small-scale traders, the study challenges assumptions about their attitudes toward cashless methods. The central role of customer demand in shaping willingness aligns with Singaporean studies but differs in other contexts. Grounded in the Technology Acceptance Model, our deductive methodology ensures rigor, yielding principles and generalizations for policymakers and contributing significantly to Sri Lanka's cashless transition.

The study's primary limitation pertains to the modest sample size, comprising 80 traders from the Kurunegala district in Sri Lanka. While insightful for understanding the attitudes of small-scale traders in this specific locale, the broader applicability of these findings to the entire country might be constrained given the diverse geographical and cultural landscape of Sri Lanka. Moreover, the study focuses on a specific demographic, limiting generalization to larger or more urbanized areas. Future research endeavors with a more extensive and diverse sample could enhance the robustness and broader relevance of the identified principles and generalizations.

This study holds practical significance for Sri Lankan policymakers in optimizing cashless system adoption, offering insights for small-scale traders to make informed decisions based on trust, customer demand, and associated costs. Theoretically, the study challenges conventional assumptions on cost impact, emphasizing regional variations among small-scale traders. It underscores the importance of cultural nuances in technology adoption, providing valuable insights for effective strategies in Sri Lanka's societal shift toward cashless systems.

While offering valuable insights into cashless payment adoption among small-scale traders in the Kurunegala district, this study has limitations. The findings' generalizability is confined by the modest sample size of 80 which limits broader applicability. The study's time frame may not capture rapid technological changes post-pandemic. Sole reliance on quantitative data oversimplifies nuanced factors influencing adoption. Future research should diversify geographically, expand sample sizes, adopt longitudinal approaches, and incorporate mixed methods to provide a more comprehensive understanding.

Comparative analyses across regions and exploration of emerging technologies and trust dynamics would enhance the literature on cashless adoption among small-scale traders.

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