

Impact of Cashless Transaction on Customer Experience and Efficiency: A Case Study of Restaurant at Helsinki Airport

Abstract

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| Impact of Cashless Transaction on Customer Experience and Efficiency: A Case Study of Restaurant at Helsinki Airport | | |
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| Abstract | | |
| <p>In this era of technological advancement, while we are discussing artificial intelligence, we are also moving towards an unprecedented era of payment systems in our daily lives. Along with the European continent, countries in Asia are also not far behind in this progress. This issue is especially noticeable when it is seen that restaurants in high-traffic places like Helsinki Airport are making their debut as cashless. With a particular focus on Helsinki Airport eateries, this thesis investigates how cashless payment technologies affect both customer satisfaction and operational effectiveness in a busy setting.</p> <p>The research was carried out between June 26 and July 9, 2024, during the busiest time of year at Helsinki Airport and lasted for two weeks. Surveys and interviews were among the quantitative and qualitative research techniques used for collecting detailed information from a wide range of airport customers. This methodological technique made it possible to gather comprehensive information about passenger payment preferences and behaviours under the pressure of an airport setting.</p> <p>Research has shown that cashless payment systems increase the speed and efficiency of transactions and at the same time contribute positively to the customer service experience. A significant portion of survey participants prefer cashless transactions, due to their convenience and speed. The paper also identifies important elements that affect the adoption of these systems, such as societal norms, security concerns, and technological familiarity.</p> <p>By emphasizing the operational advantages and customer satisfaction linked to digital payment systems in a busy environment, this thesis advances our knowledge of cashless economies. Additionally, it provides useful suggestions for companies and legislators that want to maximize the use of these technologies. In the quickly moving world of digital commerce, the findings highlight the significance of supporting infrastructure and the necessity of constant adaptation to shifting consumer expectations.</p> | | |
| Cashless Payments, Customer Experience, Digital Payments, Airport Restaurants, Diffusion of Innovation Theory. | | |

Contents

| | | |
|-------|---|----|
| 1 | Introduction..... | 1 |
| 1.1 | Research Background..... | 1 |
| 1.2 | Previous Research Related to this Topic..... | 1 |
| 1.3 | Research Objectives & Questions..... | 2 |
| 1.4 | Significance of thesis work..... | 3 |
| 1.5 | Research Method..... | 3 |
| 1.6 | Research Limitations..... | 4 |
| 1.7 | Ethical Considerations..... | 5 |
| 1.8 | Thesis Structure..... | 5 |
| 2 | Theoretical Background..... | 7 |
| 2.1 | Cashless Payment System..... | 7 |
| 2.2 | From past to present..... | 11 |
| 2.3 | Present and future..... | 13 |
| 3 | Adoption of Innovations..... | 16 |
| 3.1 | Diffusion Of Innovation (DOI) Theory..... | 16 |
| 3.2 | Cashless from the perspective of DOI..... | 18 |
| 4 | Results..... | 20 |
| 4.1 | Data Collection at Helsinki Airport..... | 20 |
| 4.2 | Presentation of Quantitative Data..... | 20 |
| 4.2.1 | From the perspective of Helsinki Airport..... | 21 |
| 4.2.2 | From the perspective of Company X restaurant..... | 26 |
| 4.3 | Presentation of Qualitative Data..... | 29 |
| 5 | Findings..... | 31 |
| 5.1 | Efficiency and Customer Satisfaction..... | 31 |
| 5.2 | Analytical and Competitive Perspectives..... | 31 |
| 5.3 | Implications for Staff and Service Dynamics..... | 32 |
| 6 | Conclusions..... | 33 |
| 7 | Recommendations for Industry Practice..... | 35 |
| 8 | Summary and Discussion..... | 38 |
| | References..... | 40 |
| | Appendices..... | 46 |

Appendix 1. Data Collection Survey Questions

1 Introduction

1.1 Research Background

There is no alternative to smart, advanced, and fast customer service to survive in a competitive market. As a result of which a touch of smartness and speed of service is being observed in the payment of the price of the product or service. This change is especially noticeable in the restaurant or fast-food business, where convenience and speed are critical factors. The recent move towards cashless payment is a significant change that shows how customers' behaviour and technology are advancing. This trend is gaining momentum because more people are choosing digital ways to pay, and technological innovations are making these options more accessible and convenient.

Over the past decades, there has been a substantial shift in the landscape of consumer payment methods, which has been accelerated by the recent worldwide epidemic. The European Central Bank carried out several studies, including SPACE 2022, SPACE 2019, and SUCH 2016, to keep a careful eye on changes in consumer tastes and technical improvements.

The purpose of this thesis study is to explore the impact of shift to cashless payment using an international environment at Helsinki Airport. With its large volume of traffic and varied, worldwide clientele, this environment offers a special framework for examining the context of this change. The customer experience component of this thesis will investigate the special requirements and expectations of travelers at Helsinki Airport, which may include international payment methods, the need for speed owing to time restrictions, and the influence on customer satisfaction. This approach varies from analyzing attendee experiences across many events by providing a more focused perspective on consumer interactions with cashless systems.

1.2 Previous Research Related to this Topic

Research on cashless payment systems is being conducted from various perspectives. In 2017, Aodren, did a thesis research headed, "*New Payment Modes: Simplification of Consumers' Life or Real Gear to Overconsumption?*". The thesis examined how cashless payment mechanisms affect consumer behavior, with a particular emphasis on how they affect decisions to buy and how they could lead to overconsumption. Using online questionnaires and interviews, the study gathered answers from a wide range of individuals, most of whom

were in the 20–30 age range. A considerable number of young adults have adopted electronic payment methods, as evidenced by the fact that most respondents had one or two electronic credit cards.

Another master's thesis on related topic was done in 2023 by Helga Carroll-Himberg from ARCADA University of Applied Sciences. The research examined how spending patterns in the Nordics and Australia—two geographically different but economically and socially similar regions—relate to the decrease in the usage of actual currency. "Does the progress towards a cashless society have an impact on people's spending habits?" was the study topic that served as the foundation for this analysis.

Both qualitative and quantitative research methodologies have been to address this. To evaluate the relationship between the decreased usage of cash and other household economic indicators, it used secondary data from national banks, government organizations, and financial institutions. However, the results showed no discernible correlation between changes in consumer purchasing patterns and the decreased flow of cash. Rather, it was found that short-term interest rates had a greater influence on consumers' purchasing decisions. The study emphasizes the intricacy of economic behavior and raises the possibility that shifting to a cashless society may not have the direct impact on consumer purchasing that one might anticipate.

1.3 Research Objectives & Questions

Company X is a global leader in providing dining services for travellers, operating at airports across the world. With a rich history that spans over several decades, Company X has established itself as a pioneer in transforming the travel dining experience. The company specializes in creating welcoming dining spaces, offering a wide range of options from quick snacks to full-service restaurants, catering to the diverse tastes and preferences of travellers.

Recently a fast-food chain managed by this company, which has three units at Helsinki Airport, started accepting only cashless payments. Of these three units, one is located at the non-Schengen, one at the Schengen and one at the landside or arrival side of the airport. Of these, the Schengen unit is the busiest. All the three units started accepting only cashless payments on a trial basis for the first one month. That is, guests can pay for their order only by card or contactless method. A month later only the Schengen unit kept this cashless system running and the remaining two units started accepting cash again.

The primary objective of the thesis work is to,

- analyse the impact of cashless payment on operational efficiencies and customer experience in the company X restaurants in Helsinki Airport.
- finding out the factors that may drive this specific industry to cashless payment.
- Provide insights and recommendations to the companies who are thinking about shifting to cashless payment.

Thesis questions are:

How do international travellers view the availability of cashless payments options at the Helsinki Airport Restaurant? (Company X (Customer satisfaction to cashless payments.)

How has the transition to cashless payment systems impacted operational efficiencies within the restaurant at Helsinki Airport?

1.4 Significance of thesis work

Many European languages use idioms like "cash is king" or "nur Bares ist Wahres," and surveys found that 60% of citizens desire the option of spending cash (Bindseil & Schneeberger, 2023). Recent trend and customer responses to making payments shows an opposite image about this idiom. In a report by Imogen (2022) that published in ZAWYA, it indicated about the increasing popularity of digital payments, and they will outnumber cash by 2023, accounting for 69 percent of all transactions.

Existing theories about consumer behaviour, payment methods, and service management may be supported or contradicted by this study, which looks at how cashless transactions affect customer satisfaction and operational effectiveness. Policymakers may utilize research findings to better understand the ramifications of transitioning to a cashless society, particularly in industries crucial to tourism and international travel.

1.5 Research Method

Choosing the appropriate research methodology is essential in academic study, particularly when looking at topics like how cashless payment systems affect customer behavior and operational effectiveness. These techniques influence the conclusions that can be made in addition to providing direction for the methodical gathering and analysis of data. The research techniques commonly used in these kinds of investigations are described in this section along with their uses, benefits, and drawbacks. (Patrick, 2006).

Generally, research methods are divided into three categories, quantitative, qualitative and mixed methods. There is little doubt that the three methods are not as distinct as they seem. (Creswell, 2009a).

One technique for determining how much weight people or groups give to social or human issues is qualitative research. As part of the research process, this method usually entails formulating research procedures and questions, collecting data in the natural environment of the participant, analysing data by inductively drawing themes from in-depth observations, and assessing the significance of data. (Creswell, 2009b).

Observing events that impact a specific group, describe as the sample population, is the main goal of quantitative research methodologies. This research methodology uses a variety of techniques to gather different kinds of numerical data. These data are then subject to statistical analysis to compile, contrast, or determine correlations between the data points. Surveys, experiments, and structured observations are often used approaches in this kind of study. (Becon-Shone, 2013).

By combining qualitative and quantitative methodologies, mixed methods research produces an all-encompassing approach to investigation. Adopting philosophical presumptions, applying both qualitative and quantitative procedures, and combining these approaches into a unified study framework are all part of this strategy. The procedure goes beyond simply gathering and evaluating both kinds of data; it carefully blends both approaches to improve the study's overall depth and robustness, going beyond what could be accomplished with just one approach. (Vicki et al. 2008).

In this thesis work both qualitative and quantitative analysis will be made to reach the objectives of thesis work. Qualitative analysis will be made by collecting and analysing customer feedback and comments on cashless payments systems. Interviews will be conducted with management and staff team of selected restaurants at Helsinki Airport. For the quantitative purpose, the difference of transaction data between pre and post implementation of cashless payment system will be analysed. Restaurants at Helsinki Airport will be the key case study, giving practical insights into the real-world implementation of cashless payment systems.

1.6 Research Limitations

Subjectivity in Qualitative Data

Interviews and consumer feedback analysis are based on subjective judgments, which may add bias. The researcher's point of view or the respondent's desire to provide honest feedback may impact how qualitative data is interpreted.

Technological Adaption Rate

Is it possible for businesses and customers to embrace a new payment technology at different rates, and research may not adequately reflect the current state of development or emerging trends in cashless payment technology.

Cultural and Demographic Factors

The International clientele of Helsinki Airport brings a diverse array of cultural and demographic factors that may impact payment preferences and experiences.

1.7 Ethical Considerations

To preserve the integrity of the study and safeguard the rights and privacy of participants, several ethical issues pertaining to cashless transactions at a restaurant in Helsinki Airport are addressed in this thesis. The fact that participation is completely optional and that withdrawals are free of charge at any moment will be made clear to participants. All information gathered will be anonymized to maintain anonymity. In no reports or publications will the comments be associated with personally identifiable information, such as names or work positions.

1.8 Thesis Structure

In this thesis work, the restaurant payment system in airport environment will be researched on adopting cashless payment system. Introduction section discusses the background of the researcher, comparability of this thesis work with other related research, objectives and questions, connotation of this thesis work, research methods, limitations and ethical consideration.

The theoretical framework section first explains what cashless payment systems are and the digitalization of these systems from viewpoint of time, past to present and present to future. In section 3, discussion describes how cashless payment technologies spread within the restaurant industry and among consumers in connection with Innovation diffusion Theory by Rogers (1962).

The data collection for the thesis titled was conducted from July 24, 2024, to August 7, 2024. For this study, the Schengen unit at the airport was selected due to its high traffic

volume, making it the busiest among the three units available during the specified period. This choice was strategic to ensure that the study captured data reflective of high customer interaction levels and the corresponding efficiency of cashless payment systems under peak operational conditions.

Presentation of qualitative and quantitative data are made in section 4 headed results. A short analysis of presented data also available with each section. In section 5 findings based on the survey data are explained. Section 6 which is headed conclusion, provide answer to the thesis questions. That are set out in section 1. Based on the interview, collected data and research few recommendations are made to the section 7 that is headed, recommendations for the industry practice. Section 8, provide a summary and discussion that outlined the objectives and result. Further research suggestion also made in this section.

2 Theoretical Background

2.1 Cashless Payment System

Cash refers to the banknotes or coins in circulation. Cashless payment can be categorized according to the form of money used in payments: card payment, electronic money, and credit transfer. A card payment refers to a payment made by swiping a card, enjoying it with widespread acceptance. A cashless payment system involves purchasing and paying for products and services electronically. (Akhilumeh & Ohiokha, 2012). In this system there is no authority of paper or coin cash. Instead, transactions are carried out utilizing a variety of digital technologies, including credit and debit cards, electronic bank transfers, and mobile payment applications and digital wallets.

The use of cashless payment systems marks a substantial shift in the manner that transactions are carried out throughout the world from conventional cash-based exchanges to more sophisticated digital ones (Nazib & Farah, 2020). Technological developments, alterations in regulations, and changes in consumer behavior toward increased convenience and security are the main forces behind this transition.

This cashless payment system has accelerated mainly due to the invention of bank cards. According to data from Global Findex Database of World Bank Group (2021a), more than 96% of people in Finland own debit cards and 65% for credit cards. Also, other European countries such as Denmark (99%), Netherlands (98%), Norway (98%), Slovenia (98%), Sweden (98%) Estonia (96%) people carry debit cards. Other indicators about, made digital payments in the past year (% age 15+) from Global Findex Database of World Bank Group (2021b), for Finland it is, 98%. The proportion of participants who stated that they had made account payments using mobile money, debit or credit cards, mobile phones, or the internet for bill payment, online shopping, or in-store purchases during the last year. This covers those who said that in the previous year, they used a mobile money account or a financial institution account to pay their bills or send money back.

Globally, more people are turning to non-cash payment methods, which are considered more safe, efficient, and inclusive. From 2017 to 2020, per person average number of cashless transactions worldwide increased from 91 to 135. This shift was especially notable in low and middle-income countries (LMICs), where the rate of cashless transactions doubled. Meanwhile, in high-income countries, the increase was more modest at 17 percent over the same period. Despite these advancements, significant gaps still exist in the availability and usage of digital payment options in LMICs. (Ardic & Deshi 2024.)

Sweden is the country considered as the most cashless society in the world with just 32 ATMs per 100,000 residents (Joanna, 2022a). Further evidence of Sweden's widespread use of digital payment methods comes from the fact that more than 98% of its citizens own a debit or credit card. This change is especially significant since, in 1661, Sweden became the first nation in Europe to issue banknotes. (Queensland Government, 2024.) The movement from being at the forefront of the use of paper money to being at the forefront of its complete elimination highlights a larger trend in financial transactions towards digitalization.

According to Yle News (2016), The Bank of Finland has projected that, based on the ongoing trend of debit and credit card usage, cash transactions in Finland could completely cease by 2029 at the latest. Finland is rapidly advancing toward a cashless future and may soon surpass its European counterparts in this trend. Presently, Finland is second only to Ireland in terms of card usage frequency. It ranks fifth in e-commerce spending relative to its GDP and is third in the adoption of online banking. (Joanna, 2022b.)

The main momentum for cashless payments was gained during the pandemic period. Although our lives were brought to a near standstill by the shutdown, they did not completely stop. We still needed to do our daily shopping. During that time, we primarily relied on cards and contactless payments. Online or net banking, digital wallets, and mobile banking systems also surged in popularity. Simultaneously, a new opportunity for e-commerce emerged, transforming the way consumers interacted with goods and services. This shift not only facilitated necessary transactions during a critical time but also accelerated the widespread acceptance and integration of digital payment solutions in everyday life. There was a noticeable shift toward digital payments prior to the COVID-19 epidemic, one that might eventually lead to a world without cash. According to analysis by PwC and Strategy (2021), global cashless transaction volumes are expected to rise by over 80% from 2020 to 2025, increasing from approximately 1 trillion transactions to nearly 1.9 trillion, and are projected to nearly triple by 2030.

The European area is at the forefront of a structural cashless payment system in this high period of digitalisation. The Single Euro Payments Area (SEPA) and the European Payments Initiative (EPI) have made this path even smoother.

Single Euro Payments Area (SEPA)

By the collaboration of national governments, the Euro system, the European Commission, and other public agencies, the European banking and payments sector initiated SEPA. The Euro system was particularly interested in the SEPA project's success since it not only unified the non-cash euro payment system but also finalized the launch of the euro as a single currency. (European Central Bank).

Customers may quickly, safely, and effectively make cashless euro payments, like national payments, to any location in the European Union and many non-EU nations using the Single Euro Payments Area (SEPA) via credit transfer and direct debit. 2008 saw the introduction of SEPA for credit transfers, which was followed by direct debits in 2009. The euro area completely adopted SEPA by 2014, and non-euro area SEPA nations did the same by 2016. (European Central Bank).

European Payments Initiative

The European Payments Initiative (EPI) aims to eliminate the current fragmentation by replacing national card, web, and mobile payment systems with a single, universal card and digital wallet. It may instantly make use of strong and advanced current infrastructures, such as the TARGET Instant Payment Settlement (TIPS) of Euro system, because it is based on the SEPA instant credit transfer (SCT Inst) protocol. (European Central Bank, 2020.) This effort is designed to develop a comprehensive payment system that both shoppers and businesses throughout Europe can use. It will include a payment card and a digital wallet that can be utilized for in-store purchases, online transactions, person-to-person transfers, and even cash withdrawals. According to EPI chairman of the board, Dr. Joachim Schmalzl, by consistently innovating in payments, a crucial pillar of the European economy, the European Payments Initiative seeks to promote the development of a unified Europe.

Key Findings from SPACE 2022 (European Central Bank, 2022)

According to the 2016 SUCH research, cash has historically dominated the retail and person-to-person (P2P) transaction scenes in Europe. But this picture has changed significantly because of the emergence and use of sophisticated payment technology. This trend was initially noted by SPACE 2019, which noted an increase in card payments and a decrease in cash use at points of sale (POS). This shift is also supported by the SPACE 2022 research, which shows a more noticeable shift towards digital payments driven by both consumer preferences and outside variables like the pandemic.

While card payments rose from 19% to 34% (image 1) within the same time, cash transactions at POS decreased significantly from 79% (image 1) in 2016 to 59% in 2022, according to the 2022 SPACE results. A notable example of the wider acceptance and incorporation of fintech solutions into everyday transactions is the notable increase in the use of mobile payment applications. This change is a reaction to the pandemic's effects, which limited access to physical stores and led to an increase in online and contactless purchases, in addition to reflecting shifting customer preferences.

Chart 2

Share of payment instruments used at the POS in terms of number and value of transactions, 2016-2022, euro area

(percentages)

Number of transactions

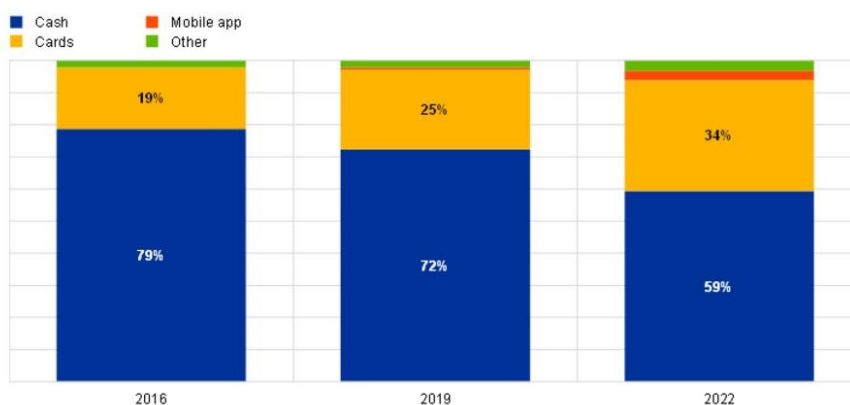


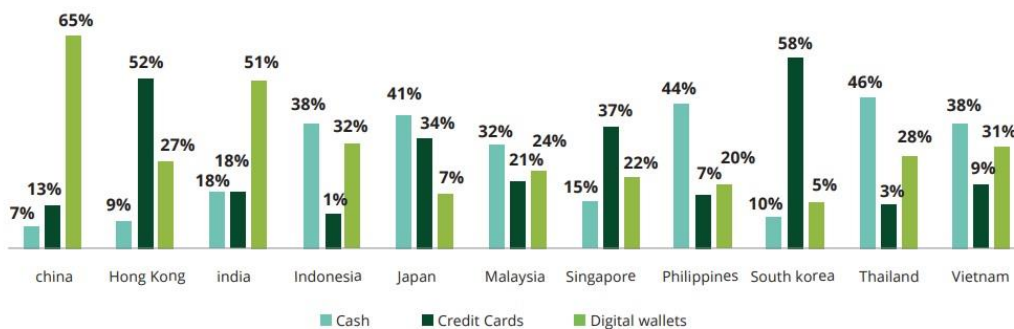
Image: 1 Share of Payment Instrument Used at the POS in Terms of Number and Value of Transactions, 2016-2022, Euro Area (European Central Bank)

The survey also emphasizes how non-cash payments are accepted in a variety of transaction kinds and values, with cash still being favored for smaller, routine purchases and cards dominating bigger value transactions. Most customers recognize the value of keeping cash on hand despite the trend toward digital, supporting its perceived advantages in terms of privacy and spending control.

In recent years, cashless payment systems in Europe, including Finland, have grown, and evolved significantly, reflecting larger changes in consumer behaviour and technology improvements. In 2022, the European Central Bank published Payment Statistics: 2021, which revealed that, total number of non-cash payments in euro area raised by 12.5% to 114.2 billion, while the total value increased by 18.6% to 197.0 trillion. (European Central Bank, 2022).

Cashless Transaction in Asia Pacific

In 2023, Asia accounted for about two-thirds of global digital wallet spending, or \$9.8 trillion, giving it the region with the highest spending levels. Due to their speed, simplicity of use, and enhanced security, digital wallets are growing in popularity among consumers; by 2027, their use is expected to expand at a compound annual growth rate (CAGR) of 13%. (Deloitte, 2024a Page 3)



Source: The 2024 Global Payments Reports by Worldpay

Image: 2 Payment method trends in Asia region

Digital wallets are evolving into "super apps," or comprehensive platforms. These apps offer a range of services, including banking, e-commerce, and social media. In Southeast Asia, where this trend is most apparent, apps like GCash and Alipay are in the lead. Super apps provide a one-stop shop that boosts customer loyalty and engagement. (Deloitte, 2024b Page 13).

When it comes to digital payments, China is leading the world (image 2). In 2023, digital wallets accounted for 82% of e-commerce transactions and over two-thirds of point-of-sale transactions. Favorable legislative frameworks and the widespread usage of QR codes have accelerated China's transition to a cashless society. (Deloitte, 2024b Page 13). Saudi Arabia's Vision 2030 initiative aims to make 70% of the country's transactions non-cash by 2030. (Arab News, 2019)

In an ancient land, Bangladesh is typically referred to as a relatively new nation (Ministry of Foreign Affairs, Bangladesh). Cash has long been the main method of payment in Bangladesh, a nation with a sizable population and a developing economy. To enhance financial inclusion, boost transparency, and lessen dependency on cash, the government and financial institutions have been aggressively pushing digital payment systems in recent years. The launch of mobile financial services (MFS) in 2011, which gave millions of Bangladeshis their first taste of formal financial services, was a major turning point in this digital payment journey. (Haque, 2024).

2.2 From past to present

The fast rise of mobile phone money transfer service customers is a pertinent illustration of how digital technology has enabled a quick extension of financial services' reach. Digital payment delivery and messaging are increasingly crucial parts of effective and creative policies as we see the growing importance of digital services in completing transactions. They

provide a practical substitute for automating deliveries, doing away with checks, automating e-commerce apps, and taking card payments in mobile settings, according to many. After standardized details are settled, the production of electronic invoices also makes digital reconciliation of transactions easier. Digital payment methods and financial services are now available over a wide range of economic development per capita. Support for the different aspects of digitization, such as inclusive growth and a more efficient, secure, and robust financial system, is necessary for ongoing progress, though. Although it has been noted that not everyone has profited from digital advancements thus far, it is acknowledged that everyone may gain in some circumstances. These include addressing the issues of excessive staffing, managing data sharing to safeguard the privacy of all population segments, fostering and promoting collaboration through improved public-private partnership, and strengthening the overall resilience of the system.

The innovation of cards was the frontrunner in cashless payment systems. For decades, most euro payments have taken the form of electronic credit transfers between bank accounts, which follow harmonized norms. This has also been true throughout the eurozone for more than a decade. Payment cards have essentially supplanted cash for daily transactions. (Valimaki & Heikkinen, 2021.)

Credit cards were first launched in Britain in 1966, and debit cards were launched 21 years later in 1987. These are essential methods of payment. After invention of contactless card, Near-Field Communication (NFC) technology, the transition to cashless payment became much faster and more convenient. The first contactless bank cards were introduced in the UK in 2007, making card transactions considerably easier. (Bank of England Museum). In 1995, Seoul's transportation authority introduced one of the first contactless payment systems of world (Julia 2020). In late 2008, major payment networks Visa, American Express and MasterCard introduced contactless credit cards that allow consumers to make payments by simply tapping their card near a point-of-sale terminal. In 2011, Google took another stride allowing contactless payment by introducing Google Wallet and Android Pay. In both system Smartphone users can make payments from their phones without Card present. (Global Payments.)

Alternative payment methods or APM emerged in the 1990s when the Internet grew in popularity. (PayPal, 2023). Alternative payment methods fall outside traditional payment systems, all payment methods other than cash or major credit card networks like Mastercard, Visa, etc. are referred to as Alternative Payment Methods, or APMs. Prepaid cards, digital wallets, mobile payments, and BNPL (Buy Now Pay Later) loans are the most widely used alternative payment options. (European Merchant Bank).

2.3 Present and future

Tom Gunson (2021), discussed about six megatrends that are shaping the future of payments.

- i. Inclusion and Trust
- ii. Digital Currencies
- iii. Digital Wallets
- iv. Battel of Rails
- v. Cross Border Payments
- vi. Financial Crimes

These trends show a global movement toward increasingly technologically sophisticated, inclusive, and integrated payment systems. These changes will reshape the financial interactions between organizations and customers as they develop, highlighting the necessity of strong security protocols and legal frameworks to guarantee secure and effective transactions.

Evolution of the Mobile phone payments

One significant development in the payments and commerce industry is the use of mobile devices as payment tools. This technology has been adopted by banks and sellers alike, providing customers with a seamless and practical payment experience at their fingertips. With a projected compound annual growth rate of 34% (image 3), the mobile payment market, which is now valued at \$94.5 billion in 2024, is forecast to rise rapidly, reaching \$408 (image 3) billion by 2029. (The Payment Association).



Image: 3 Mobile Payments Market (Mordor Intelligence)

When major IT companies enter the payment industry, they significantly elevate the scale of cashless payment systems. These companies often have a large existing customer base, who automatically become users of their payment systems due to their use of the company's devices or services. For example, tech giants like Apple and Google have developed their own payment systems, known as Apple Pay and Google Pay, respectively. Another giant, Meta, has also created its own system known as Meta Pay. The involvement of these large firms not only expands the reach of cashless payments but also enhances user trust and integrates financial transactions more seamlessly into everyday digital activities. By leveraging their technology and widespread user base, these companies significantly influence the evolution and adoption of digital payments, making transactions more accessible and secure for users across the globe.

Blockchain Technology in Payment System

The use of block chain technology in payment systems has brought about a major revolution. The journey of blockchain technology began in 1991 when Stuart Haber and W. Scott Stornetta first conceived the idea of a cryptographically secured chain of blocks. Then, first blockchain as the public ledger for Bitcoin transactions was implemented by Nakamoto in 2009. This marked the launch of the first cryptocurrency, which utilized blockchain to facilitate secure, transparent, and tamper-proof transactions on a decentralized network. (ICAEW, 2024.) This technology is becoming more and more popular in fields like financial services. In 2022, payments made up 44% of blockchain income worldwide. Additionally, it is anticipated that global blockchain income would reach \$1.4 trillion by 2030. (Global Payments, 2023.)

The Instant Payments Regulation (IPR)

On October 26, 2022, the European Commission proposed the Instant Payments Regulation (IPR), which was approved by the European Parliament and Council on March 13, 2024, and published in the Official Journal on March 19. (European Central Bank). Here naturally comes a question, now when we are making payment it is instant. As soon as the payment is made, we get the payment confirmation on the laptop or mobile screen. There is a difference between the current payment system and the upcoming instant payment system. Duke (2023), who works as a Head of Retail Finance at DG Fisma, points out the very basic difference between these. The primary distinction between traditional payments and instant payments lies in timing and availability. Traditional payments typically process within the next day, meaning they require up to 24 hours to complete. In contrast, instant payments are executed almost immediately, within seconds. This means that sent money, it will appear in account within a few seconds, regardless of whether it's night or day, a

weekend, or a holiday. Essentially, the key differences are speed and the constant availability of the service. When the euro was first introduced on January 1, 1999, it was mostly utilized for accounting and electronic payments during its first three years as a "invisible" currency (European Union).

3 Adoption of Innovations

3.1 Diffusion Of Innovation (DOI) Theory

The Diffusion of Innovation (DOI) Theory offers a crucial framework for examining how cashless payment technologies at Helsinki Airport have revolutionized consumer satisfaction and operational effectiveness. This theory provides insights into the mechanics of adoption as well as the wider consequences for consumer behavior and operational efficiency, making it especially pertinent to comprehending the acceptance of cashless transactions at Helsinki Airport.

Based on their willingness to embrace new technologies, adopters are divided into five groups under the DOI Theory, which are, innovators, early adopters, early majority, late majority, and laggards (Jose, 2020). The categories of five adopter are distributed thus: The first 2.5% of the group adopts an innovation, followed by early adopters (13.5%), early majorities (34%), late majorities (34%), and laggards (16%) (image 4) (Corporate Finance Institute (CFI) Team). On the opposite end of the scale, the innovators group is far smaller than the laggard's category.

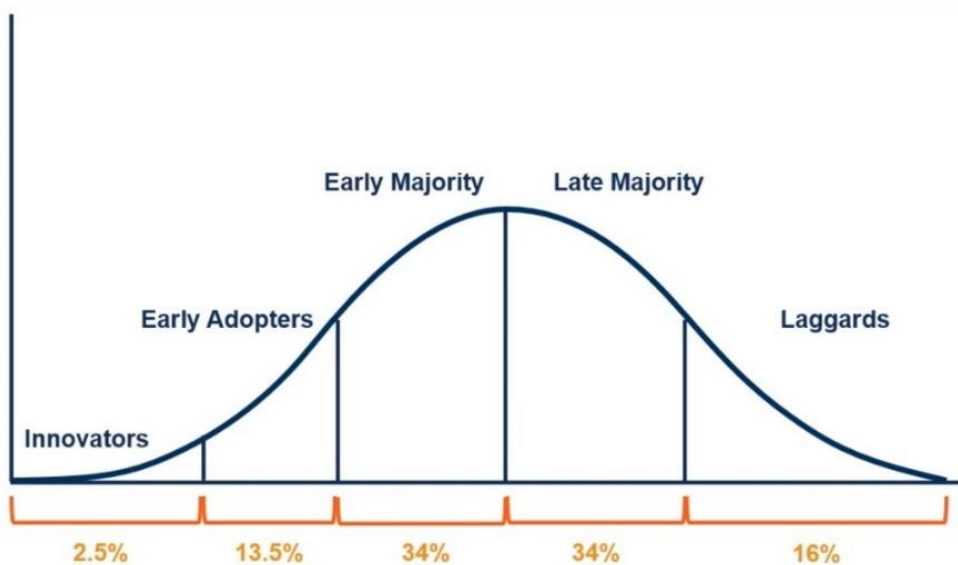


Image 4: Diffusion of innovation theory five adopter categories (CFI Team)

With respect to risk tolerance, social network connection, and receptivity to novel concepts, each group reflects a subset of the population. Laggards are the last to embrace, frequently resisting change until it is unavoidable, whereas innovators are the first, eager to take chances. This segmentation aids in comprehending the diverse reactions of customers to Helsinki Airport's implementation of cashless payment systems.

In 1962, E.M. Rogers introduced the Diffusion of Innovation (DOI) Theory, positioning it as one of the foundational concepts in social science (Boston University). Originating within the field of communication science, the theory explains the process by which a new idea or product gains popularity and gradually spreads within a specific group or societal structure. (Wayne, 2022). It gives a framework for understanding how, why, and how quickly new ideas and technologies spread across cultures. Rogers (1962), identifies five qualities of innovations that impact adoption: relative benefit, compatibility, complexity, trialability, and observability (Miller, 2015).

Communication Channel

Internet and (Internet of Things) IoT's are the main communication channel for cashless payment system. To conduct cashless transactions, a network connection is necessary for both the online and IoT payment channels. Using banking apps that are installed on mobile devices, mobile banking enables cashless transactions. Cards, smartphones, mobile phones and other devices such as tablets, laptops, and personal computers can be used for cashless transactions. Apart from transactions requiring actual currency, almost all cashless operations could be completed via mobile banking or the internet. (Ong and Chong 2022.)

Time

The process by which an individual or entity moves from first learning about an innovation to developing an attitude toward it, deciding to accept or reject it, putting it into practice and using it, and having this decision confirmed over time is known as the diffusion of innovations (Rogers 1962). In addition to adopting mobile payment methods to keep pace with technological trends, restaurants are moving towards cashless systems to boost overall efficiency. This shift not only enhances the experience for customers but also offers advantages for the staff. (Gilliland 2017.)

Social System

Depending on the category of innovation adopters and the innovation decision-making process, the implementation of cashless payment systems is likely to result in the broad acceptance of cashless transactions within a community or society. Since the outcome of this dissemination depends on how quickly a community adopts cashless payment techniques, which differ throughout different stages of the innovation process in diverse societies, the effects of adopting cashless payment methods might vary greatly. (Tee and Ong 2016.)

Diffusion of Innovation Theory in Relation to Present Study

By relating these components to the restaurant business, it is possible to observe how social trends, technological innovation, and human behavior interact to drive the use of cashless payment methods. This process has been expedited by the pandemic, which has raised awareness of and perception of the need for this technology. This has sped up their adoption by the restaurant business on a global scale.

Cashless payment technologies provide a relative advantage over traditional cash transactions by boosting transaction speed, security, and convenience for both customers and companies. Due to its speed, safety, and simplicity, electronic payments are becoming more and more popular nowadays.

3.2 Cashless from the perspective of DOI

Rahman et al (2022a) in an empirical analysis, indicates that, when consumers look for convenient transactions and companies look for new profit opportunities, the diffusion of innovation theory can explain why cashless payments are becoming more and more popular. The authors created a comprehensive model (Image 05) of how companies are adapting cashless payment methods. Technology competency, competitive pressure, company size, top management support, critical mass (organizational factors), information intensity (environmental factors), compatibility (technological factor), and the TOE framework or factors are all highlighted in this theory.

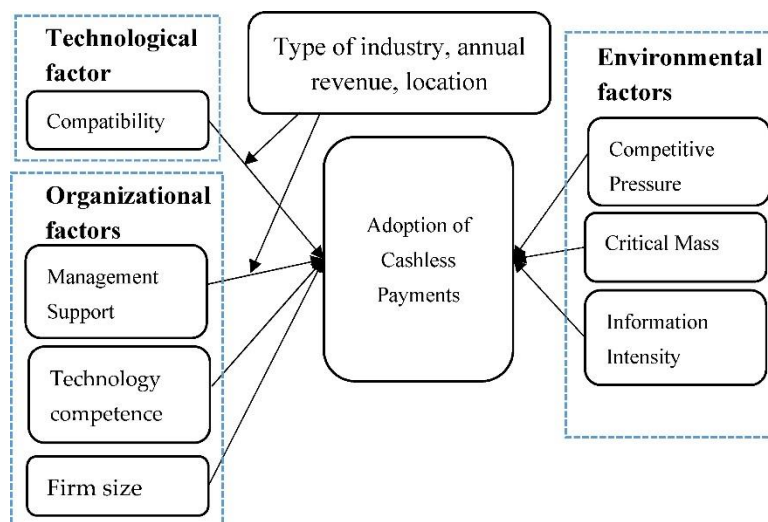


Image: 5 integrated model of businesses' adoption of cashless payment systems (Rahman et al. 2022b)

The two main points of the diffusion innovation theory are the technology adapter and the five qualities that influence adaptation. The adoption of cashless payments depends heavily on innovators and early adopters. These demographics include tech-savvy people and progressive companies that aren't afraid to experiment with new technologies. Their support and satisfying experiences may encourage others to begin adopting cashless transactions.

The DOI theory emphasizes that an innovation must provide definite benefits over existing options to be widely embraced. (Aljarrah et al. 2016a). Convenience, quickness, increased security, and ease of tracking and managing spending are just a few advantages of cashless payments. These advantages encourage a move away from cash by appealing to both enterprises and consumers.

According to DOI theory, technologies that can be tested in small quantities and produce noticeable outcomes spread more quickly. (Aljarrah et al. 2016b) The advantages of employing cashless payment methods—such as faster checkout times and simple access to transaction history—are readily apparent to others and can promote greater adoption.

Communication channels and social structures also have an impact on the adoption of cashless payments. Social norms that are shaped by advertising, the media, and peer behaviour might promote the use of cashless transactions. Additionally, governments and financial institutions accelerate the adoption of digital payments by promoting them through incentives and advertising. (Tanha et al. 2024).

4 Results

4.1 Data Collection at Helsinki Airport

Data collection for the study was carried out through surveys. Helsinki Airport, which experiences its peak traffic from April to September, served as an ideal location for this research due to its high passenger volume during these months. According to data from Finavia, in 2023, Helsinki Airport facilitated the travel of 15,313,355 passengers. This total comprised 13,530,441 international and 1,782,914 domestic passengers, highlighting the airport's significant role in international travel.

The survey was strategically conducted over a two-week period, from June 26, 2024, to July 9, 2024. This timeframe falls within the mid-summer peak season, when the airport experiences exceptionally high traffic, making it a pertinent period for gathering data. The selected case restaurant, known for its preparation and adaptability during these busy times, experiences a substantial surge in customer activity, providing a robust environment for effective data collection.

A total of 125 responses were collected over the two weeks. The highest number of responses by country came from Finland, with 37. The second highest number of responses came from Sweden, with 16. In terms of gender, 80 of the 125 respondents were male and 44 were female. There was one respondent who did not disclose their gender.

To facilitate the ease of data collection during such a busy period, a QR code linked to the survey was created and prominently displayed. This QR code was printed in advance and positioned in areas where customers typically waited for their orders or rested after meals. Additionally, brief interviews were conducted with willing participants. These interactions were not only instrumental in collecting data but also served as opportunities to explain the historical significance and the objectives of the study, enhancing participant understanding and engagement.

This methodological approach not only ensured efficient data collection during a peak operational period but also allowed for the capture of diverse customer experiences, contributing to the richness and applicability of the research findings.

4.2 Presentation of Quantitative Data

The survey questions were set keeping the thesis question in mind, so that the answers to the thesis question could be extracted by analysing the collected data. In this context, the

presentation of quantitative data has been done from two perspectives. First from the perspective of Helsinki Airport and second from the perspective of company X restaurant.

4.2.1 From the perspective of Helsinki Airport

Data Points 1: A high degree (63.3%) (image 6) of satisfaction with the accessibility of these systems at the airport was indicated by most respondents who assessed the availability of cashless payment alternatives as excellent.

Analysis: According to the data gathered, a sizable majority of respondents (63.3%) (image 6) rated Helsinki Airport's cashless payment system's availability as outstanding and reported high levels of satisfaction with its accessibility. This degree of satisfaction shows that the airport's cashless payment infrastructure not only meets but goes beyond the expectations of most visitors. Such a favorable reaction is important because it highlights how well the airport's digital payment systems work for its varied, global customer base.

This overwhelming support for cashless payment methods is indicative of a larger trend in which people are choosing digital over cash transactions, especially in busy settings where convenience and speed are critical. According to the positive evaluation, these solutions provide travelers with smooth transaction experiences and are effectively incorporated into the airport's everyday operations. Additionally, other airports and related service sectors hoping to improve customer experience and operational efficiency through technology may use the high satisfaction percentage as a standard.

Even while most reports are good, it's vital to keep in mind that certain airport users may still have problems or have misgivings about using these technologies. To ensure that upgrades and enhancements to the cashless payment systems continue to satisfy the changing requirements and expectations of all users, future research and ongoing feedback channels should be used to detect and address these issues.

6. On a scale from 1 to 4, how would you rate the availability of cashless payment options at Helsinki Airport? (1 being very poor, 4 being excellent)
125 responses

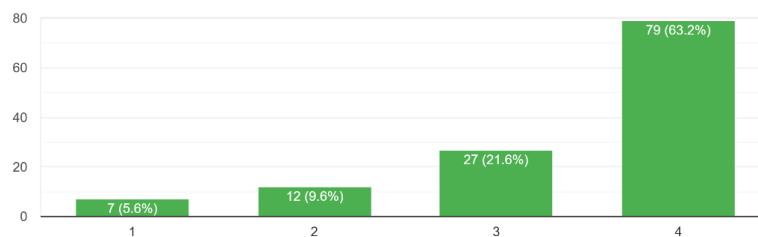


Image: 6 Customer responses on survey question 6

Data Points: A substantial majority (56%) (Image 7) agree or strongly agree that they prefer using cashless payment methods when dining at airport restaurants.

Analysis: According to the statistics, a significant majority of respondents (56%) (Image 7) prefer to pay with cashless ways when dining at airport restaurants, demonstrating a strong preference for the efficiency and convenience that digital transactions provide. This notable preference highlights the rising trend towards cashless economies, especially in places like airports where efficiency and speed are critical.

The significant majority's preference for cashless payments emphasizes how crucial it is to preserve and enhance these systems to guarantee that they satisfy their requirements and expectations. It implies that travelers like cashless transactions' speed, security, and ease of use, which may improve their eating experience by cutting down on wait times and expediting the payment procedure.

Even while cashless choices are clearly preferred, this suggests that a smaller portion of the clientele may still want or need access to conventional payment methods. This variation in payment preferences implies that, even as cashless payment systems are developed and expanded, it is crucial to make sure that all passengers, even those who might not be as accustomed to or comfortable with digital payments, can use them.

Airport restaurants should be encouraged to invest in the newest payment technologies due to the overwhelming preference for cashless methods. This will ensure security, speed up transactions, and possibly add more features that improve customer satisfaction and interaction, like loyalty programs or instant discounts through digital platforms.

8. Please indicate your level of agreement with the following statement: "I prefer using cashless payment methods when dining at airport restaurants." ...agree, 2 - Disagree, 3 - Agree, 4 - Strongly agree)
125 responses

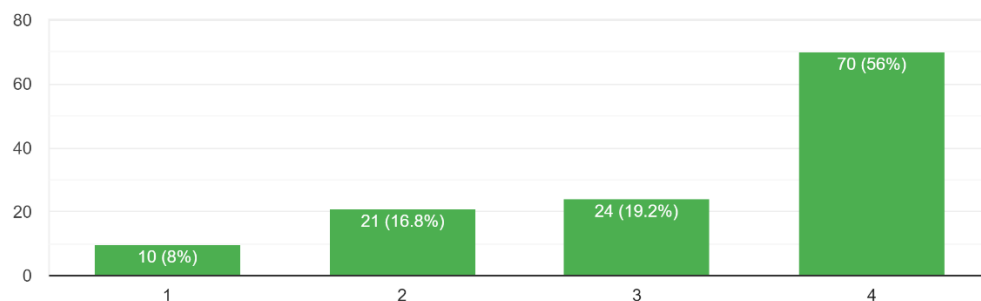


Image: 7 Customer responses on survey question 8

Data Points: High levels of satisfaction were reported with 63.2% (image 8) of respondents indicating they are very satisfied with the cashless payment system.

Analysis: According to the research, a sizable percentage of participants—63.2% (image 8)—state that they are extremely happy with Helsinki Airport's cashless payment system, demonstrating a high degree of acceptance and approval of the offered digital transaction options. This degree of satisfaction is crucial since it not only shows how effective and dependable the payment methods are, but it also affects the general customer experience.

The high satisfaction rating indicates that, in terms of speed, security, and convenience of use, the cashless systems in place either match or surpass the expectations of the majority of consumers. Increased customer loyalty and advocacy are important components in an airport's competitive climate, and great user satisfaction usually corresponds with higher utilization rates.

Though the majority said they are content, 36.8% (image 8) of respondents said they were not "very satisfied," pointing to areas where the cashless payment system should be enhanced. Examining the challenges or restrictions that these consumers may have encountered such as system malfunctions, UI problems, or insufficient payment options would be helpful.

According to the comments, even if the current system works well, ongoing upgrades and enhancements might further improve user experience. This can entail adding more sophisticated technologies, increasing the number of accepted payment methods, or providing more individualized payment experiences.

9. How satisfied are you with the cashless payment system at Helsinki Airport? (1- Very dissatisfied, 2- Dissatisfied, 3- Satisfied, 4- Very satisfied)

125 responses

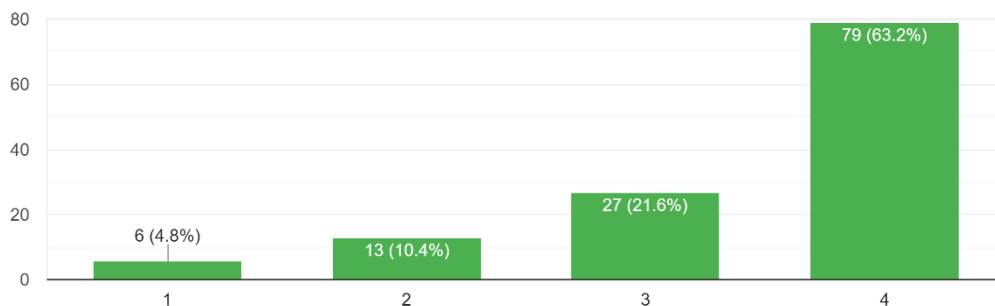


Image: 8 Customer responses on survey question 9

Data Points: When asked to compare the cashless payment experience at Helsinki Airport with other international locations, 68.8% found Helsinki to be better or much better.

Analysis: According to the research, 68.8% of respondents, a sizable majority, believe that the cashless payment experience at Helsinki Airport is superior to or significantly superior to that of other foreign sites. This high degree of satisfaction speaks well of Helsinki Airport's IT infrastructure and entire customer service approach, positioning it as a pioneer in cashless payment integration.

According to the positive comparison, Helsinki Airport has effectively put in place a cashless payment system that not only satisfies but also surpasses international standards, offering smooth and effective customer experience. For passengers that appreciate speed and ease when interacting with airports, this comparative advantage may be a big lure and might affect their selection of transportation hubs.

The overwhelming favorable reaction suggests that modern payment systems were implemented successfully and that passengers in Helsinki may now accept these methods more widely. It demonstrates the airport's dedication to using cutting-edge solutions that raise customer happiness and operational effectiveness.

Still, according to the statistics, a percentage of users roughly 31.2% did not think Helsinki's system was better. People in this category may have certain requirements or expectations that the present systems are unable to provide. The airport may be able to improve its payment options by learning more about the preferences and experiences of this group.

10. Compared to restaurants in your home country or other international airports, how does the cashless payment experience at Helsinki airport measure up?

125 responses

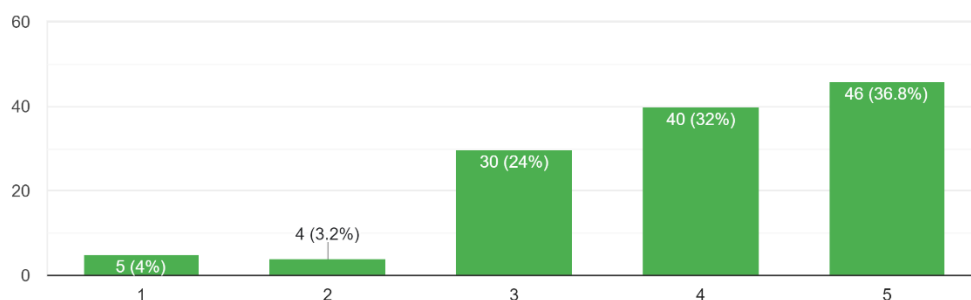


Image: 9 Customer responses on survey question 10

Data Points: The survey collected responses from 125 participants regarding their preferred methods of payment. The options included various modern and traditional payment methods such as card payments, mobile apps, and cash.

Card Payment: 80 responses (64%)

Apple Pay: 38 responses (30.4%)

Cash: 23 responses (18.4%)

Google Pay: 13 responses (10.4%)

Mobile Pay: 16 responses (12.8%)

Samsung Pay: 3 responses (2.4%)

Garmin Pay: 2 responses (1.6%)

E-Pass: 1 response (0.8%)

5. Which of the following is or are the most preferable ways to pay for you? (You can choose more than one.)
125 responses

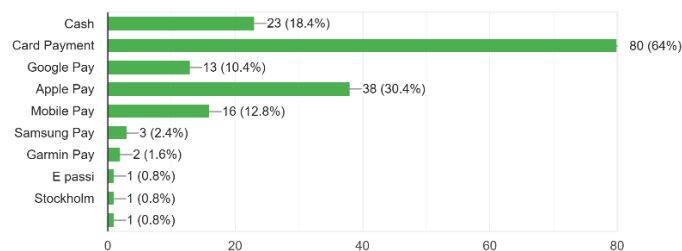


Image: 10 Customer responses on survey question 5

Analysis: The data indicates a clear preference to pay with a card for this approach with 64% (image: of respondents selecting this method. This demonstrates how traditional card-based transactions are still trusted and relevant in the market. Apple Pay emerges as the second most preferred method, with 30.4% (image of the participants favouring it. This reflects the growing acceptance and convenience of using Apple Pay, particularly among users of Apple devices. Cash is still a popular payment option, as indicated by 18.4% (Image: 10) of respondents, despite the move towards digital payment methods. This emphasizes how companies must accept cash transactions to serve all clientele. With moderate preference rates of 10.4% and 12.8%, respectively, Google Pay and Mobile Pay are becoming increasingly popular, albeit more slowly than more well-known payment systems like Apple Pay.

4.2.2 From the perspective of Company X restaurant

Data Points: A significant majority of respondents (62.4%) (image 11) reported no difficulties using cashless payments, while 16% encountered issues frequently at company X restaurant.

Analysis: According to the research, a sizable majority of respondents (62.4%) (Image 11) said they had no trouble utilizing cashless payment methods at company X restaurant, indicating a strong and intuitive infrastructure. This high percentage of trouble-free contacts highlights how well the company X restaurant's cashless technologies work to give most consumers a smooth transaction experience. The favorable comments speak highly about the dedication of company X restaurant towards updating visitor experiences and its investment in digital payment systems.

However, the statistics also show that 16% of users had frequent problems with these systems. This is a sizable minority, and their experiences indicate that there are aspects of the cashless payment process that need more focus and enhancement. Regular issues might make people less likely to utilize these services in the future and have a bad effect on their entire airport experience.

Technical difficulties, user interface concerns, or incompatibilities with international financial systems are among the obstacles that 16% may encounter. These issues are especially pertinent in an airport context that caters to a customer that is internationally varied. To improve user happiness and preserve the airport's standing as a cutting-edge, effective hub, it should be a top priority to identify and address these issues.

To ensure continuous improvement, the airport would benefit from implementing a more comprehensive feedback mechanism to pinpoint the specific issues encountered. By doing this, the airport may concentrate on certain solutions, like enhancing software updates, adding new international payment methods, or providing better customer support to address payment-related issues.

7. Have you encountered any difficulties using cashless payment methods at this restaurant? Please select the option that best describes your experience.
125 responses

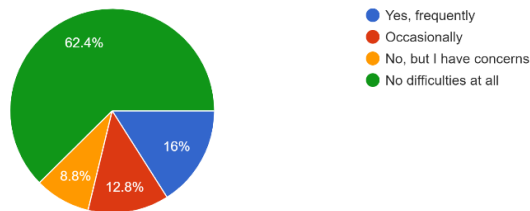


Image: 11 Customer responses on survey question 7

Data Points: Most respondents perceive that cashless payments improve the speed of service (85.6% agreed or strongly agreed).

Analysis: According to the research, most respondents (85.6%) agree or strongly agree that cashless payments speed up service, indicating a strong belief that digital transactions increase efficiency and simplify operations. In places like airport eateries, where patrons frequently have time restrictions, this notion is crucial.

In competitive settings like airports, consumer happiness and retention depend on great user experience, which is shown in the high degree of agreement with the effectiveness of cashless payments. In addition to enhancing the patron experience, faster service boosts the restaurant's throughput, which might result in higher profits as more patrons are served in the same period.

There is potential for improvement, though, since roughly 15% of respondents said they did not observe an increase in service speed with cashless payments. To guarantee that the cashless payment process runs as smoothly as possible, this may entail greater payment system integration, employee training to manage digital transactions more skillfully, or upgrades to the technological infrastructure.

It is clear from the high approval percentage that companies in high-traffic locations may benefit strategically from promoting and growing the usage of cashless payment systems. Additionally, it's a sign that more customers are growing used to and anticipating speedy digital payment methods as part of their customer care.

12. In your experience, does the use of cashless payments seem to improve the speed of service at this restaurant? Please indicate your level of agreement with the following statement:

125 responses

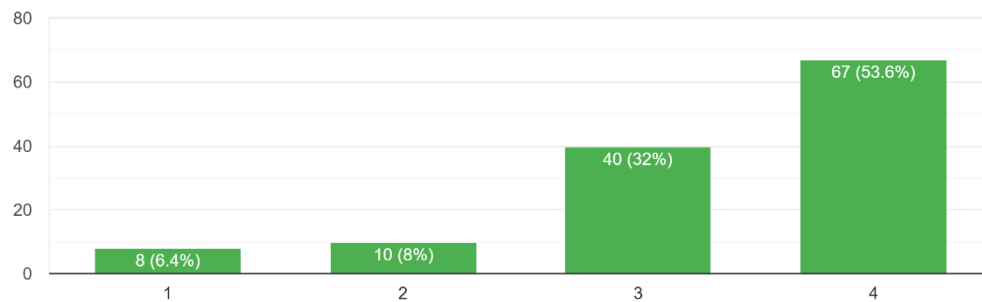


Image: 12 Customer responses on survey question 12

Data Points: Over 86.4% of respondents agreed or strongly agreed that cashless payments provide more time for staff to assist with other service aspects.

Analysis: According to the research, more than 86.4% of respondents agreed or strongly agreed that cashless payments provide employees with more time to help with other areas of customer care. The operational advantages of cashless payment systems are highlighted by this noteworthy recommendation, especially about raising employee productivity and raising overall service standards.

According to this view, cashless payment systems expedite the transaction process by cutting down on the amount of time employees must spend handling the currency, keeping track of change, and reconciling transactions at the end of the day. Staff members can shift their focus from these administrative duties to more customer-focused pursuits like helping clients, responding to their questions, and keeping the area tidy and orderly. This change maximizes the utilization of human resources while also improving consumer experience, potentially leading to higher job satisfaction among employees.

Furthermore, the fact that so many respondents acknowledge and enjoy this feature of cashless payments suggests that it is a significant and appreciated development. It emphasizes how critical effective payment methods are to foster a happy atmosphere for both patrons and employees, which is especially important in high-stress settings like airports.

13. Please indicate your level of agreement with the following statement: "Cashless payments provide more time for staff to assist with other serv... disagree, 2- Disagree, 3- Agree, 4- Strongly Agree)
125 responses

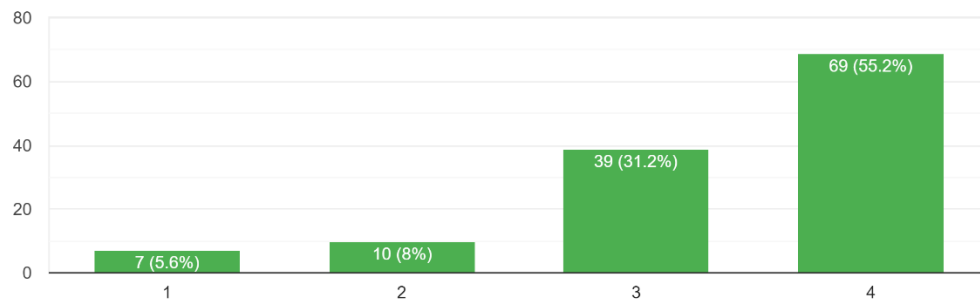


Image: 13 Customer responses on survey question 13

4.3 Presentation of Qualitative Data

Comparative Experience

Positive comparisons with other cashless experiences were made, and Helsinki Airport was praised by many for being more user-friendly and efficient than other international venues. This implies that the use of cashless technology by the airport is seen as an example of best practices.

Concern About System Reliability

A few respondents emphasized that they occasionally were unable to use cashless methods due to system faults or outages. To reduce discomfort, these remarks point to the necessity of thorough system maintenance and fast resolution procedures.

High Transaction Fees

Concerns over excessive bank fees for international card payments were expressed by foreign clients. This suggests a possible area for negotiation with payment providers to reduce charges and fees or give alternative alternatives. It also represents a pain point for visitors who could feel punished for cashless purchases.

Restriction of Payment Option

Some respondents thought that the focus on cashless transactions limited their options, particularly in situations when digital devices malfunctioned. This illustrates the goal of keeping a variety of payment choices available to guarantee accessibility and ease for every client, irrespective of their favored mode of payment.

Enhanced Efficiency

Positive comments were expressed on the cashless payment system's quickness and convenience, which respondents said was especially helpful in the hectic airport setting. Such comments serve to highlight the benefits of cashless payment methods for improving client satisfaction during rush hour travel.

5 Findings

5.1 Efficiency and Customer Satisfaction

The information gathered and examined from the study carried out at Helsinki Airport about the use of cashless payment systems in dining establishments offers a thorough understanding of how these technologies affect both the quality of customer experience and the effectiveness of operations. The main conclusions drawn from the quantitative and qualitative data are summarized in this part to provide a clear picture of the general attitude and practical implications of cashless transactions.

High Satisfaction with Accessibility

A noteworthy 63.3% of participants assessed the availability of cashless payment methods as outstanding. The restaurant's infrastructure appears to be well-suited to facilitate cashless transactions, which is a crucial aspect in the busy international setting of Helsinki Airport, based on the high level of satisfaction. The results of other research, which highlight the importance of good payment methods in minimizing bottlenecks in crowded environments, are corroborated by the efficacy of cashless systems in this situation.

Recurring Transaction Issue

Although the response was mostly positive, over 16% of respondents reported frequent problems when using cashless payments. This result suggests that there is space for development, especially when it comes to improving customer service channels and updating system software or hardware. These upgrades might lessen the effects of these interruptions, which are known to negatively impact consumer satisfaction.

Preference for Cashless Payments

The preference for cashless methods was evident, with 75.2% favouring them over traditional cash transactions, citing reasons like convenience and speed. This reflects broader trends observed globally as consumers increasingly seek efficient and quick service options, especially in transit-oriented locales

5.2 Analytical and Competitive Perspectives

Improved Operational Efficiency

According to most respondents (85.6%), cashless payments sped up the delivery of services. This view is important because it emphasizes how digital transactions may improve operational efficiency and possibly increase turnover at busy times. This is consistent with

theories of operational management that give process improvement first priority in order to maximize revenue and satisfy customers.

Global Benchmarking

When asked to rate Helsinki Airport's experience in comparison to other foreign sites, 68.8% said it was better or much better. According to this, Helsinki Airport's use of cashless payment methods sets a standard for industry best practices and gives it a competitive advantage by improving the traveler's experience.

5.3 Implications for Staff and Service Dynamics

Impact on Staff Engagement

More than 86.4% of participants thought that staff members could help with other areas of the service when cashless payments were made. This result is noteworthy since it emphasizes the dual advantages of digital payments: they speed up transactions while freeing up employees to concentrate more on providing customer support. Staff efforts may be better directed on improving service quality, which can improve client experiences overall and increase customer satisfaction and loyalty.

6 Conclusions

Question 1:

How do international travellers view the availability of cashless payments options at the Helsinki Airport Restaurant?

Based on the data gathered, it can be concluded that foreign visitors are generally satisfied with the Helsinki Airport restaurant's cashless payment alternatives. More specifically, 63.3% of those who participated in the study thought these solutions were excellently available. This favorable opinion is significant because it shows how well the restaurant's infrastructure supports cashless transactions, which is especially critical at a global hub like Helsinki Airport.

Feedback from visitors from other countries emphasizes how easy and accessible cashless payment options are, which is consistent with the worldwide movement towards digitalizing transaction procedures. Helsinki Airport is a pioneer in this field, which is further supported by comparison research, which shows that 68.8% of respondents thought that Helsinki's cashless payment experience was superior to that of other foreign sites. This shows that the implementation in Helsinki not only satisfies but beyond the needs of foreign visitors, offering them a flawless transaction experience that improves their general convenience when traveling.

Thesis Question 2:

How has the transition to cashless payment systems impacted operational efficiencies within the restaurant at Helsinki Airport?

The survey data indicates that the restaurant's operational efficiencies have been greatly influenced by the switch to cashless payment solutions. Notably, most respondents—85.6%—agreed or strongly agreed that the pace of service had increased with cashless payments. In busy settings like airports, where time efficiency is highly prized by both consumers and operations management, this improvement in transaction speed is essential.

Furthermore, according to the survey, 86.4% of participants think that cashless transactions provide employees with more time to help with other areas of service. This increases the effectiveness of the delivery service process and raises the bar for customer service by enabling employees to interact with clients more and respond to their eating habits in a timely and efficient manner.

From an operational standpoint, less physical cash has probably resulted in cheaper expenses and less complicated operations, such the requirement for banking and cash counting. All these indicators point to the restaurant's operations being more efficiently run, improved customer service, and better positioned to handle the pressures of a busy international airport since they adopted cashless payment methods.

7 Recommendations for Industry Practice

The transition to cashless payment methods has revolutionized several service-oriented sectors in the current digital era, particularly in busy places like airports. An excellent study on the integration and effects of such systems may be found at Helsinki Airport, a busy hub that handles a sizable number of local and international travelers. The results of a thorough investigation carried out at this airport provide important new information on the operational advantages and difficulties of cashless transactions, with wider ramifications for the world-wide payment system.

Enhance User Experience through Technological Improvements

Continuous System Upgrades

To guarantee optimal performance and dependability, upgrade the hardware and software of the payment system on a regular basis. Resolve any often brought up concerns as soon as possible to preserve confidence and satisfaction.

User-Friendly Interfaces

Provide and manage user-friendly, intuitive interfaces for all electronic payment systems. Provide multilingual help on digital platforms to consider the demands of visitors from other countries.

Expand Training Program for Staff

Thorough Training:

Continually instruct all staff members in the newest cashless technologies and customer service techniques. Both improving client relations and managing digital transactions operationally should be the main topics of this training.

Feedback-Informed Training:

To solve frequent issues and boost productivity, include staff input about cashless payment systems in training initiatives.

Leverage Data to Improve Services

Data Analytics:

Track the effectiveness of cashless payment systems and spot trends that can point to areas in need of development by using data analytics.

Customer input:

To continuously enhance and improve the payment experience, put in place reliable systems for gathering and examining consumer input, particularly that pertaining to cashless transactions.

Promote Financial Inclusion

Multiple Payment Options:

Maintain your support for a variety of payment methods, including conventional ones, guarantee that no client is turned away because of their chosen method.

Features of Accessibility:

To promote diversity, make sure cashless payment methods are usable by those with impairments.

Enhance Security Measures

Advanced Security Protocols:

To safeguard user information and stop fraud, implement the newest security technology. It should be routine procedure to conduct regular security audits and compliance checks.

Transparency with Users:

Customers should be informed in a clear and concise manner about the usage and security of their data. Users are reassured about the security of their transactions and confidence is increased via transparency.

Collaboration and Partnerships

Industry Cooperation:

To maximize efficiency gains, restaurants should standardize and enhance cashless payment systems worldwide, cooperate with other airports, airlines, and service providers.

Innovative Partnerships:

To be on the cutting edge of payment technology and make sure that the newest and most effective solutions are being used, collaborate with tech companies.

One important development that has the potential to completely transform service delivery in several sectors is the shift to cashless payment methods. The experience of Helsinki Airport offers important insights into the advantages and difficulties of these systems. Other high-traffic locations can boost operational effectiveness, improve customer experience, and provide economic advantages by implementing strategic suggestions based on these

observations. Opportunities to improve these payment systems will increase in tandem with the ongoing development of digital technology, indicating that in the future, digital transactions will be the rule rather than the exception.

8 Summary and Discussion

In today's digital age, our everyday lives are becoming more enjoyable and convenient thanks to continuous innovation. Economic transactions have been simplified since ancient times and in succession we got gold coins to silver and copper coins and later to paper currency. As innovation never stops, soon we may have payment systems that we cannot even imagine now.

This research is to examine the impact of cashless transactions on customer experience and operational efficiency in the airport environment. The primary objective was to determine whether the introduction of cashless payments enhances the service delivery and customer satisfaction in a high-traffic environment. According to survey responses, card payment methods are the most preferred, indicating a move towards a cashless society. Faster service times and maybe higher turnover rates resulted from restaurants' operations being streamlined and the complexity of handling cash being decreased.

In this thesis research, various data from the theoretical section show how cashless transactions are increasing in the economy and business transactions. In view of the fast and improved service to customers, companies are taking various service-oriented steps, which may initially face some questions, but after a while it is progressing quite successfully. One of the main objectives of establishing themselves as a completely cashless unit is to improve the operational efficiency of the business, that is, to focus more of the employees on customer service. According to the responses to question 12 of the research survey, 67 out of 125 people think cashless payments seem to improve the speed of service at this restaurant. Another thing that can be seen from a financial perspective is the ratio of payments by card and cash in the daily total sales of the business.

A major concern when it comes to cashless payments is security. According to a Visa survey, survey participants believe that fraud affects every tenth card payment (Visa Navigate, 2023). It goes without saying that tech companies are working on this security. There were no questions on security in the survey in this thesis work, which could be researched further.

During data collection, customers were given a fair idea of this thesis and its importance, so that the survey responses reflected their true opinions. Throughout the entire research procedure, ethical considerations were closely followed. The research ensured impartiality by selecting a random and diverse group of participants that accurately reflected the demographics of the airport.

Further research is needed on this topic regarding boarder demographic analysis. Expanding the research to include more varied demographics could offer deeper insights. Research

on cashless transaction adoption of other airport or high traffic environment can provide contextual insights. The long-term impact of being cashless also need to be assessed on consumer behaviour and business operations.

The thesis confirms that the transition to cashless payment systems at Helsinki Airport has positively impacted both consumer experience and operational efficiency. Continuous development of payment method structure is needed so that it remains responsive to all customer or user needs.

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Appendices

Data Collection Survey Questions

Impact of Cashless Transaction on Customer Experience and Efficiency: A Case Study of Restaurant at Helsinki Airport

Welcome to our survey

Thank you for participating in our study on the impact of cashless payment systems at Helsinki Airport. Your feedback is invaluable and will contribute to understanding how digital payment methods affect customer experiences and operational efficiency within high-traffic environments.

Purpose of this survey

This survey aims to gather insights from travelers like you about your preferences and experiences with cashless payment options at the Helsinki Airport. Your responses will help us evaluate how these technologies influence service speed, convenience, and overall satisfaction.

What to expect

The following questions will ask about your interactions with cashless payment systems during your visits to the Burger King at Helsinki Airport. Whether you are a frequent flyer or a casual traveler, your perspectives are crucial in shaping a comprehensive view of current payment trends and their impacts.

Confidentiality

Please be assured that all responses will remain confidential and will only be used for academic purposes. The survey should take approximately 3-4 minutes to complete.

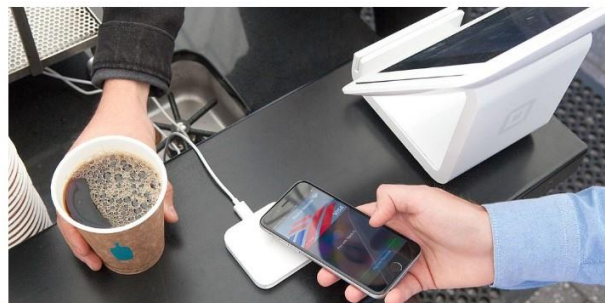
We appreciate your time and effort in helping us with this research. Please proceed when you are ready.

mahibcool@gmail.com [Switch account](#)

Not shared

* Indicates required question

Cashless Payment



1. What is your country of origin? *

Your answer _____

2. Your gender *

- Male
- Female
- Prefer not to say

3. How often do you travel internationally? *

- Multiple times a month
- Once a month
- Several time a year
- Once a year
- Less than once a year

4. Which age group are you in? *

- 18 - 24
- 25 - 34
- 35 - 44
- 45 - 54
- 55 - 64
- 65+

5. Which of the following is or are the most preferable ways to pay for you? (You can choose more than one.)

- Cash
- Card Payment
- Google Pay
- Apple Pay
- Mobile Pay
- Samsung Pay
- Garmin Pay
- Other: _____

6. On a scale from 1 to 4, how would you rate the availability of cashless payment options at Helsinki Airport? (1 being very poor, 4 being excellent) *

| | | | | | |
|------|-----------------------|-----------------------|-----------------------|-----------------------|-----------|
| | 1 | 2 | 3 | 4 | |
| Poor | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Excellent |

7. Have you encountered any difficulties using cashless payment methods at this restaurant? Please select the option that best describes your experience. *

- Yes, frequently
- Occasionally
- No, but I have concerns
- No difficulties at all

8. Please indicate your level of agreement with the following statement: "I prefer using cashless payment methods when dining at airport restaurants." (1 - Strongly disagree, 2 - Disagree, 3 - Agree, 4 - Strongly agree) *

| | | | | | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| | 1 | 2 | 3 | 4 | |
| Strongly disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly agree |

9. How satisfied are you with the cashless payment system at Helsinki Airport? (1- Very dissatisfied, 2- Dissatisfied, 3- Satisfied, 4- Very satisfied) *

| | | | | | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| | 1 | 2 | 3 | 4 | |
| Very Dissatisfied | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Very Satisfied |

10. Compared to restaurants in your home country or other international airports, how does the cashless payment experience at Helsinki airport measure up? *

| | | | | | | |
|------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------|
| | 1 | 2 | 3 | 4 | 5 | |
| Much worse | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Much better |

11. From your observations how would you rate the speed of transactions in this restaurant of Helsinki airport using cashless payment? (1- Very slow, 2- Slow, 3- Fast, 4- Very Fast) *

| | | | | | |
|-----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------|
| | 1 | 2 | 3 | 4 | |
| Very Slow | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Very Fast |

12. In your experience, does the use of cashless payments seem to improve the speed of service at this restaurant? Please indicate your level of agreement with the following statement: *

| | | | | | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| | 1 | 2 | 3 | 4 | |
| Strongly Disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly Agree |

13. Please indicate your level of agreement with the following statement: *
"Cashless payments provide more time for staff to assist with other service aspects at this restaurant." (1- Strongly disagree, 2- Disagree, 3- Agree, 4- Strongly Agree)

| | | | | | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------|
| | 1 | 2 | 3 | 4 | |
| Strongly disagree | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Strongly agree |

14. Any additional information or opinion regarding cashless payments that you would like to include?

Your answer

Submit

Page 1 of 1

Clear form