



The Usage of Physical Cash and its Implication on Small Restaurant Businesses in Helsinki

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Abstract

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<p>This thesis explores how small restaurant businesses in Helsinki are responding to the shift toward a cashless society. Recent trends in Finland indicate a clear decline in the use of cash, although physical currency remains in use among certain groups, such as older adults and international tourists. As digital payment methods continue to grow in popularity—accelerated by technological development and the COVID-19 pandemic—understanding the impact on small businesses has become increasingly relevant.</p> <p>The aim of this research is to investigate how a cashless future may influence small restaurant operations, based on the perspectives of business owners. Specifically, it explores the benefits and challenges of using cash, the operational and customer-related reasons for its continued use, and the potential risks businesses may face if physical cash were no longer accepted. These research objectives are examined through the lens of the Technology–Organisation–Environment (TOE) framework.</p> <p>The research applies a qualitative approach and is based on semi-structured interviews with five small restaurant owners in Helsinki, conducted between June and November 2024. Thematic analysis was used to identify recurring patterns and context-specific insights related to payment practices.</p> <p>The findings show that while digital payments are generally preferred for their speed, hygiene, and convenience, cash continues to serve important roles—particularly for tourists, older customers, and as a backup during technical issues. Owners also raised concerns about the costs of digital systems, security risks with physical cash, and the need to make decisions based on limited resources.</p> <p>This study contributes to a limited body of research on digital payment adoption in small hospitality businesses. It offers practical insights for policymakers, service providers, and business owners by highlighting the importance of flexibility, inclusiveness, and operational resilience in the face of ongoing digital transformation. Further research could include customer perspectives or comparisons across other cities or sectors.</p>
Key words cashless society, SMEs, restaurant sector, business owners, payment systems, TOE framework, Helsinki, qualitative research, digital payments, micro-enterprises

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1 Introduction

This is a bachelor's thesis for the Degree Programme in International Business in the major specialisation of Finance and Accounting at Haaga-Helia University of Applied Sciences. As part of this qualitative research, the author will conduct interviews with five small restaurant businesses in Helsinki to explore their use of cash in daily operations. The shift away from cash in Finland has been notable, particularly accelerated by the Covid-19 pandemic, and the trend seems to be persisting (Daily Finland 2023). According to Daily Finland report, cash withdrawals by personal customers have declined significantly, with a 36 % decrease in euro amounts between the summers of 2019 and 2023 (Daily Finland 2023). Withdrawals at bank branches have experienced the most substantial decline at 56 %, followed by a 31 % decrease in ATM withdrawals, the most common method, and a 20 % decline at store checkouts (Daily Finland 2023). Payment behaviour is vital to understand in order to predict the possibility of its negative and positive effects on the business owner. Therefore, this research will study the effects of cash usage on businesses in Helsinki from the owner point of view and their impact, and whether they are aware of digital payment costs, if any, compared to physical cash payment.

Through a conversational approach guided by semi-structured interview questions, the author aims to gather a dataset for analysis. This data will be critically examined alongside findings from various resources and studies. The material in this research will be approached in conversation with the Technology, Organization, and Environment (TOE) framework (Tornatzky & Fleischer 1990).

1.1 Background

During the past decade, we have witnessed the ongoing development in payment methods especially between 2020-2023, affected by the rapid technological innovation as well as the impact of COVID-19 restrictions that drove businesses to avoid any unnecessary contact with customers in order to control the spread of the virus (Hellqvist, Liikanen, Sintonen, Takala 2021, 6). According to the Bank of Finland "credit transfer and card payment are the preferred electronic payment instruments in Finland" (Suomen Pankki 2017). However, the usage of cash remains essential for many people in their everyday purchases. There are various factors that contribute to the use of cash, and these factors vary from one individual to another. Convenience is a key driver, especially for smaller payments as cash offers simplicity, and reliability in everyday purchases and as a backup payment option in case of disruptions in electronic payment systems. Additionally, many individuals appreciate the sense of control that cash provides, allowing them to monitor their spending and manage their finances more effectively when they can physically see their money (Tavex Bullion 2024).

Moreover, the use of cash is frequently associated with elderly people or individuals who may experience challenges using digital devices either due to physical or cognitive reasons. While age is a significant factor, it is not the only one; other groups also prefer cash for various reasons. These may include individuals without access to advanced payment technologies or those who highly value personal privacy and wish to avoid the data tracking commonly associated with card-based transactions. (Heikkinen 2018).

Much research has focused on the usage of the cash payment method among customers, such as Noona Puusniekka's thesis titled "Transition from Cash Payments to Digital Money from the Youth Perspective" (2020), where they focus on the perspectives of youth within the Nordic context when it comes to the transition from cash payments to digital money, and explore tools and methods used for financial management among the focus group, as well as Helga Carroll-Himberg's thesis titled "Cashless Societies – The impact on spending habits in Australia and the Nordic Countries" (2023), where they analyse the relationship between the decrease in physical money usage and changes in spending behaviour in the Nordics and Australia. However, there has been limited research focusing on this theme among small restaurant businesses in Helsinki and the impact of a cashless future within such businesses. As technological advancements continue to reshape the payment landscape, understanding the persistence of physical currency is both timely and crucial. To elucidate this subject, this thesis will explore the factors that influence the use of cash, and the implications of physical cash within small restaurant business in Helsinki. Specifically, it will investigate the advantages and disadvantages associated with its exchange, as well as shed light on the motivations driving its ongoing utilisation, and the reasons why it is still used or abandoned among businesses. The decision to research the use of cash in SMEs, particularly in Finland's restaurant industry, comes from an interest in understanding the practical realities faced by business owners. As Finland increasingly moves toward becoming a cashless society, it is essential to understand how this shift impacts small businesses that have traditionally relied on cash transactions. From a business owner's perspective, managing cash involves not just customer convenience but also operational challenges like cash flow, security, and accounting compliance. Exploring their views provides valuable insights into how they balance evolving customer preferences with the practicalities of running their business. Moreover, this research aims to highlight potential inefficiencies and opportunities to support SMEs in adapting to digital payment methods. Having experience as a former entrepreneur in the restaurant business in Finland, further enhances this perspective, motivates to connect firsthand knowledge with broader industry trends, offering a grounded and meaningful contribution to this topic.

1.2 Research Questions

This thesis aims to explore the usage of physical cash in small restaurant businesses in Helsinki and its implication of a cashless future. Therefore, the author's main research question to be answered is:

How will a cashless future influence small restaurant business in Helsinki?

In order to answer the main question, the author asks the following sub-questions to further investigate the subject:

Q1. What are the benefits and drawbacks of the exchange of physical cash between small restaurant businesses and their customers?

Q2. Why do small restaurant businesses in Helsinki have the need to use physical cash with their customers?

1.3 Demarcation

To answer these questions, this research focuses on small restaurant businesses that are specifically located in Helsinki. The information is collected through interviewing different small restaurant business owners in Helsinki, including but not limited to small restaurants, cafes, bars, and delis. Furthermore, these interviews also include small restaurants that prohibit the use of cash in their businesses in order to collect a wide range of interviews. For the purpose of yielding such insights, companies are found and selected through the method of purposive sampling, i.e. the process of finding and selecting a representative sample that fits the aim of this research. The interviews are conducted in-person with participants' consent, and recordings are made for transcription purposes. The transcribed data is analysed to identify recurring themes, enabling a comparative analysis of outcomes across various companies and perspectives.

1.4 Benefits

This research explores how a cashless future could impact small and medium sized enterprises (SMEs) in Helsinki's restaurant industry. With digital payments becoming increasingly popular, the study investigates the challenges and opportunities that arise as businesses adapt to this shift. Since most studies have been done from the customer behaviour point of view, this research can add another layer of insights to equip restaurant owners and managers with insights to make informed decisions about adopting cashless systems (or not) and improving customer satisfaction through modern, secure payment methods.

The research also seeks to inform policymakers by offering data-driven recommendations to support financial inclusion and a smoother transition to digital payments. Furthermore, this research can also benefit payment service providers, gaining a better understanding of how to customise solutions to meet the specific needs of restaurants.

1.5 Key concepts

B2C: B2C, or business-to-consumer, refers to a retail model where products or services are sold directly from a business to the end user for their personal use (Barney 2023).

Digital Payment: Also known as electronic payments, digital payments are "financial transactions that do not involve the physical transfer of currency"(GoCardless 2023).

SME's: Small and midsize enterprises with less than 250 employees and their turnover does not exceed 50 million euros. (Business Finland s.a.).

Micro-enterprise : micro enterprise is an enterprise with less than 10 employees and a turnover not exceeding 2 million euros. (Kotavaara & Björk 6 May 2003).

Cashless Society: Described as "economic phenomenon in which financial transactions are carried out electronically" (Penchev 27 May 2021).

2 Technology, Organization, and Environment (TOE) Theory

The TOE framework (see Figure 1) provides a structured approach to examine the factors influencing business adoption of new technologies (Tornatzky & Fleischer 1990, 237). It has been widely used in firm-level studies of technological innovation adoption due to its flexibility and comprehensiveness (Oliveira & Martins 2011, 110). Within this research, the TOE framework will serve as a lens through which to study the implications of physical cash within small restaurant businesses in Helsinki (in the context of moving towards a cashless society). In analysing the technology aspect, this framework will help explore the characteristics of cash as a payment method, including its convenience, security, and costs compared to cashless alternatives. The model categorises adoption drivers into three primary dimensions—technology, organization, and environment—each of which affects how businesses integrate and utilise innovative systems. The framework's strength lies in its capacity to analyse technological innovations through these three lenses—offering a holistic understanding of adoption drivers and barriers (Oliveira & Martins 2011, 112).

2.1 Technology Factors

The technological dimension of the TOE framework considers the tools, systems, and infrastructures available to businesses, including those already in use and others accessible in the market (i.e. one's businesses could adapt). Existing technologies play an important role in defining the speed and extent of adoption (Collins et al. 1988, 524). The inclusion of both internal and external technologies is essential, as it reflects the firm's readiness to innovate and its awareness of market offerings (Oliveira & Martins 2011, 111).

Key sub-factors within the technological dimension of the TOE framework include relative advantage, technology characteristics, compatibility, complexity, and availability. Relative advantage refers to the benefits recognised in relation to adopting a technology, such as improving customer service or reducing costs (Nazir, Rizwan & Zhu 2025, 182). Technology characteristics include attributes such as functionality, reliability, scalability, and performance, all of which influence the technology's suitability within a specific business context (Lippert & Govindarajulu 2006, 151). Compatibility describes to what extent the technology aligns with existing business practices and values, thereby affecting its perceived usefulness and the ease with which it can be integrated into current operations (Prakash 2025, 78; Nazir, Rizwan & Zhu 2025, 183). Complexity, on the other hand, concerns the level of difficulty involved in adopting and using a new system—where high complexity may discourage businesses if the effort required outweighs the anticipated benefits (Nazir, Rizwan & Zhu 2025, 183). Lastly, availability refers to how accessible relevant

technologies are in the market or through vendors, and includes considerations related to cost, vendor support, and the broader infrastructure needed for implementation (Zhu et al. 2003, 184).

For businesses, particularly SMEs, the compatibility of new technologies with their existing systems remains a key determinant of adoption. If cashless payment systems integrate seamlessly with current infrastructure and business processes, adoption is more likely (Nazir, Rizwan & Zhu 2025, 183). Similarly, the relative advantage of a technology—such as improved efficiency or customer experience—can motivate adoption, provided the benefits are clear and measurable (Nazir, Rizwan & Zhu 2025, 195). The characteristics of the technology, including reliability and scalability, are also essential in determining whether it suits operational needs and long-term goals (Lippert & Govindarajulu 2006, 151). However, complexity continues to act as a barrier, especially for smaller firms that may lack technical expertise or resources to manage implementation challenges (Nazir, Rizwan & Zhu 2025, 183-197). Lastly, availability plays a critical role: technologies that are accessible in the market, supported by vendors, and affordable are far more likely to be adopted by resource-constrained organisations (Lippert & Govindarajulu 2006, 148-151; Nazir, Rizwan & Zhu 2025, 184-199).

2.2 Organisational Factors

The organisational dimension focuses on internal characteristics, such as company size, structure, resources, and readiness for change. In other words, organisational factors focus on internal readiness and structure, which can significantly influence adoption. The TOE framework emphasises how such attributes affect technology integration (Oliveira & Martins 2011, 112; Prakash 2025, 77). Nazir, Rizwan, and Zhu (2025, 184) highlight how factors such as top management support, financial constraints, and company structure play a central role in shaping technology adoption decisions among SMEs. Also, for small restaurant businesses, factors such as limited financial resources, informal organisational structures, and reliance on owner-led decision-making may shape the extent to which new technologies—such as digital payment systems—are considered or adopted. These aspects help frame how internal conditions can either support or constrain movement toward cashless operations.

Key sub-factors within the organisational dimension of the TOE framework include organisational readiness, top management support, and organisational size and structure. Organisational readiness refers to the overall preparedness of a business to adopt new technologies, encompassing financial, technical, and human resource capacities (Li 2020, 108). This readiness determines whether a business can support the integration and ongoing use of innovative systems. Top management support relates to the extent to which senior leaders are committed to and actively promote the adoption of new technology. According to Nguyen, Le, and Vu (2022, 6), this

includes recognising the technological potential of an innovation, allocating the necessary resources, and fostering a supportive organisational environment that aligns with existing systems and culture. In addition, top management influences both the decision to adopt and the effectiveness of the adoption process. Strong leadership support has been shown to positively impact technology adoption in contexts such as mobile payments, customer relationship management (CRM), and big data systems (Nguyen, Le & Vu 2022, 6). This is particularly significant in small organisations, where leadership decisions tend to have immediate and direct effects on day-to-day operations and innovation readiness. Organisational size and structure jointly influence how agile and capable a business is in adopting new technologies. Size typically refers to measurable factors such as employee count or revenue, which affect the availability of resources and administrative capacity (Nazir, Rizwan & Zhu 2025, 184). Structure refers to the way responsibilities and decision-making are organised, ranging from hierarchical models to more decentralised and informal setups (Nazir, Rizwan & Zhu 2025, 184). In small and independent restaurant businesses, structures are often informal, with owners or managers fulfilling multiple roles. This can enhance adaptability and allow for quicker responses to new opportunities. However, smaller businesses may also face challenges such as limited staffing, reduced financial flexibility, and a lack of specialised expertise, all of which can hinder the sustained adoption of new technologies (Nazir, Rizwan & Zhu 2025, 184–193). Understanding the interaction between size and structure is essential for analysing the internal conditions that support or constrain technology adoption in small business contexts.

Each of these sub-factors contributes to shaping an organisation's ability to adopt cashless payment systems. Organisational readiness, which includes financial, technical, and human resources, determines whether the business has the necessary foundation to implement new technology (Li 2020, 108). Top management support plays an important role in setting priorities, providing resources, and creating a positive environment for change—particularly important in small or family-run restaurants, where leadership decisions have a direct impact (Nguyen, Le & Vu 2022, 6). Finally, organisational size and structure affect both the flexibility and potential limitations of a business; while smaller, less formal structures may allow for agile decision-making, they often have limited resources or technical skills needed for sustained technological adoption (Nazir, Rizwan & Zhu 2025, 184-193). Together, these internal characteristics shape how small restaurant businesses assess and respond to the transition toward a cashless future.

2.3 Environmental Factors

The environmental dimension of the TOE framework examines external pressures and conditions that influence an organisation's decision to adopt and implement new technologies. Unlike the

technological and organisational dimensions, which focus on internal elements, environmental factors refer to the broader external setting in which the organisation operates (Tornatzky & Fleischer 1990; Oliveira & Martins 2011, 112). These external forces may either drive, enable, or limit technology adoption depending on the business context. Nazir, Rizwan, and Zhu (2025, 184-185) emphasise that external pressures, including competition, regulations, and customer expectations, play a vital role in shaping the adoption behaviour of businesses. For small restaurant businesses, environmental factors such as rising customer demand for cashless payment options, regulatory developments promoting digital transactions, and competitive dynamics in the food service industry are increasingly relevant. Understanding these external influences is critical for explaining the pace and extent of digital payment adoption in small businesses.

Key sub-factors within the environmental dimension of the TOE framework include competitive pressure, regulatory support, consumer pressure, and the availability of external support and technology services. Competitive pressure refers to the extent to which competition within the market drives businesses to adopt new technologies to keep or enhance their market position. In highly competitive environments, firms may feel compelled to innovate to avoid losing customers or falling behind rivals (Zhu & Kraemer 2005, 70). In the case of small restaurants, if competitors, for instance, offer cashless payments, others may feel pressured to follow or to reassess their own payment offerings in order to remain aligned with industry norms or customer expectations. Regulatory support concerns the influence of government policies, legal frameworks, and regulations on technology adoption. Supportive regulations or incentives can encourage adoption, while restrictive or unclear policies can create barriers (Zhu & Kraemer 2005, 70). For example, initiatives promoting digital payments or discouraging cash usage can influence small businesses to adopt cashless systems, while regulations supporting the continued availability of cash payments may encourage them to maintain the use of cash. Consumer pressure refers to the expectations and demands from customers and suppliers regarding the adoption of certain technologies. Organisations may adopt new tools to meet customer needs or to align with suppliers' operational requirements (Religia, Ramawati, Firdausi & Nainggolan 2025; Chiu, Chen & Chen 2017, 30). In the context of small restaurant businesses, for instance, growing customer expectations around card or mobile payments may shape how owners evaluate and respond to evolving payment preferences. External support or availability of technology services refers to the availability of external infrastructure, service providers, and consultancy support that helps organisations adopt and maintain new technologies (Ifinedo 2011). The availability of external technology services and support can influence how small restaurant businesses assess and manage their payment systems overall. Access to reliable vendors, service providers, and technical assistance may shape perceptions of what is feasible, sustainable, or worth investing in.

Environmental factors such as government support, competitive dynamics, customer expectations, and the availability of external technology services can influence how small restaurant businesses evaluate their payment systems. Regulatory incentives—such as those encouraging digital transactions—or frameworks that protect access to cash can both influence how businesses assess their payment systems (Zhu & Kraemer 2005, 70). Similarly, competitive pressure may lead small restaurants to reconsider their practices in light of what nearby businesses are offering (Zhu & Kraemer 2005, 70). Finally, the quality and availability of external vendors, including their reliability, security features, and technical support, play an important role in how small businesses perceive the risks and benefits associated with different payment technologies (Ifinedo 2011). These environmental factors collectively provide the external context in which payment-related decisions are made, whether that involves maintaining traditional systems, adopting new ones, or using a combination of both.

2.4 Relevance to Cashless Adoption in SME Restaurants

The TOE framework can be adapted to analyse how SME restaurants in Helsinki evaluate and respond to developments in payment technologies. As a framework, it helps explore the interplay between internal characteristics—such as organisational readiness, leadership support, and structural flexibility—and external pressures, including regulatory influences, customer expectations, and competitive dynamics. This aligns with Oliveira and Martins (2011), who argue that the TOE model's inclusion of environmental variables makes it more adaptable and realistic than models that only consider internal factors. In this context, the framework supports an exploration of how small restaurants assess the suitability, challenges, and implications of various payment options—whether cash-based, digital, or hybrid. Rather than assuming a uniform direction of change, the TOE framework enables a balanced investigation into the factors that shape business decisions regarding payment systems within a dynamic regulatory and market landscape.

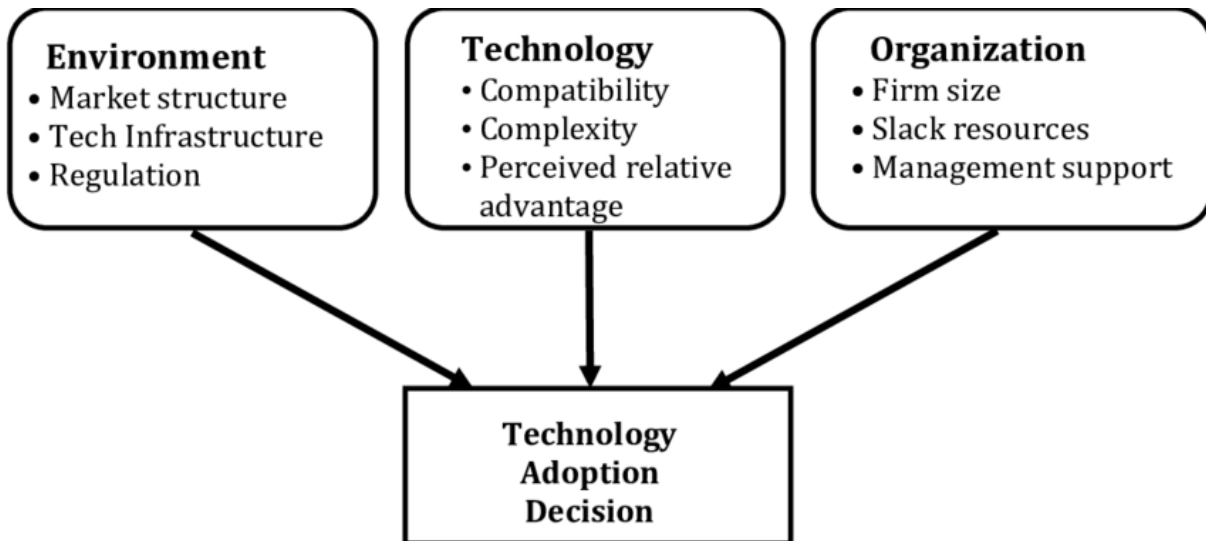


Figure 1. A diagram of the Technology-Organization-Environment (TOE) framework (Shee-Mun 2023, 196)

3 Payment Trends and Regulations in Finland

This chapter provides an overview of payment trends in Finland with a focus on the country's rapid shift toward digital transactions. It outlines how evolving consumer preferences, regulatory developments, and technological advancements are collectively driving this transformation. Section 3.1 will examine Payment Costs and their Implications for small restaurant businesses, emphasizing the financial considerations of accepting cash and card payments. Section 3.2 will then focus on Payment Method Legislation. Together, these sections establish a foundation for the subsequent analysis of how small restaurants adapt to changing payment landscapes—highlighting both the challenges they face and the opportunities that cashless systems present.

According to a report on Statista on payments at points of sale (POS) in Finland, debit cards continue to dominate the payment landscape, accounting for over 60 % of POS transactions—a trend expected to persist through 2030 (Worldpay 2025). Complementing this, data on the market share of various payment methods from 2017 to 2024, with forecasts for 2030, highlights the growing role of digital and mobile wallets. These methods are projected to nearly double their share—from around 14 % in 2024 to over 20 % by 2030—driven by rising consumer confidence in contactless and smartphone-based payment technologies. In contrast, the share of cash transactions is expected to decline from approximately 7 % in 2024 to just 4 % by 2030, underscoring Finland's continued move toward a predominantly cashless society (Worldpay 2025).

Table 2

Market share of cash, credit cards, and other payment methods at point of sale (POS) in Finland from 2017 to 2024, with a forecast for 2030. (Worldpay 2025)

Most used in-store (POS) payment methods in Finland 2017-2024, with 2030 forecast							
Market share of cash, credit cards, and other payment methods at point of sale (POS) in Finland from 2017 to 2024, with a forecast for 2030	2019	2020	2021	2022	2023	2024	2030
Debit and prepaid cards	-	-	-	-	-	59%	43%
E-wallet, Digital/mobile wallet	4%	6%	7%	8%	12%	14%	22%
Credit card (incl. "charge card" since 2021)*	15%	15%	16%	18%	19%	12%	9%
Cash	22%	15%	10%	10%	7%	7%	4%
A2A	-	-	-	-	-	7%	21%
POS financing*	-	3%	-	2%	2%	2%	2%
Debit card (merged with prepaid cards in 2024)	59%	60%	63%	62%	60%	-	-
Prepaid card (merged with debit cards in 2024)	-	-	-	-	1%	-	-
Retailer/bank financing (split off from "POS financing" in 2021)*	-	-	3%	-	-	-	-
Buy Now, Pay Later (split off from "POS financing" in 2021)*	-	-	1%	-	-	-	-

This transition has rapidly increased following the COVID-19 pandemic, which emphasised hygiene and safety, prompting both businesses and consumers to adopt contactless payment solutions. Mobile payment platforms such as MobilePay and Siirto have gained substantial traction, particularly among younger demographics and urban populations (Virtanen 2024). By enabling peer-to-peer (P2P) transfers and retail transactions, these services have contributed to making mobile wallets more attractive to users. In fact, according to Mäkelä and Ristimäki (2023), over 70% of Finns use mobile payment solutions for fast and secure transactions (Mäkelä & Ristimäki 2023). While debit cards remain the most common method for in-person purchases, mobile payments are becoming increasingly popular for smaller, everyday transactions, which in turn reflects a wider European trend towards digital convenience over traditional payment methods.

In addition to card and mobile payments, online banking transfers continue to be a key part of Finland's payment landscape. According to a survey by Paytrail, approximately 60 % of Finnish consumers used online banking for online purchases, making it the most common payment method in that context (Paytrail 2025). This trend is also reflected in findings indicating that 97 % of consumers prefer to pay their bills online, mainly through e-invoices or mobile payment apps (European Payments Council 2023).

3.1 Payment Method Costs

Despite the central role of payments in the economy, limited data exists on the actual costs of processing payment transactions. A groundbreaking study conducted in Finland—the first of its kind—analysed both private and social costs of retail payments (i.e., expenses incurred by banks, merchants, and society). The research focused on three main payment methods: cash, card payments, and credit transfers, using data from commercial banks and merchants in 2018. The methodology adhered to Eurosystem standards.

In their research on private and social costs of retail payments, Sintonen and Takala (2022) note that Finland provides a cost-efficient payment system, with social costs at 0.3 % of GDP in 2018 (2022, 21), making Finland one of the most economically efficient countries in Europe when it comes to payments. In addition, the unit costs of cash and card payments in Finland are, respectively, the lowest in comparison to other reference countries, such as the Netherlands, Poland, Germany, Denmark, Italy, and Norway (Sintonen & Takala 2022, 20). The authors do, however, caution that comparisons of estimated costs across countries needs to be interpreted with care, as there are factors to consider, such as varied levels of digitalisation, structures of the market and scope of analysis (Sintonen & Takala 2022, 21).

Retail payment costs represent a significant component of the national economy, with card payments amounting to approximately 39 % of the total social costs of retail payments, and cash payments, 23 %. While card payments have a larger share of the total retail payment costs, card payments costs at 15 cents per transaction were considerably lower than cash, at 22 cents a transaction (Sintonen & Takala 2022, 4; Junius et al. 2022, 30). Based on these calculations, cash payments may seem less expensive, overall, from a societal perspective. According to Sintonen and Takala (2022), cash payment transactional costs for merchants, especially small businesses, are generally considerably higher than card payments. Costs, associated with cash handling for merchants, include cash counting, cash storage and cash transportation to banks or transit cash companies. This means businesses that rely on cash will incur an additional expense of hiring people to count and store cash and they will typically require an increased security presence to transport it to banks or secure cash-in-transit companies. Businesses in cash may also incur transactional inefficiencies and security risks associated with managing cash that will incur further costs (Sintonen & Takala 2022, 14-15).

In addition to this, small and medium-sized enterprises (SMEs) have other costs to consider in relation to electronic payments, such as merchant positive service charges (MSCs), which are one of the known costs that SMEs will incur associated with these electronic payments. The MSC is typically comprised of a fixed charge per transaction and a percentage charge based on the value of each transaction. For example, FLATPAY, a payment services provider for Finland, charges 0.99% as a fixed fee per transaction for all payment cards (FLATPAY 2024). These costs can accumulate quickly as SMEs process higher transaction volumes.

Additionally, there are also interchange fees (i.e. processing fees from the merchant's bank to the cardholder's bank for card payments) that add to the overall cost burden. In the European Union, interchange fees for consumer credit cards are capped at 0.30% of the value of each transaction while debit cards at 0.20% (Finland-Domestic Interchange Fees 2024, 1). This cap is good for predictability for the merchant, but the total costs may still have an impact on the profitability of SMEs.

Lastly, payment processing fees can also represent a financial challenge. In addition to MSC and interchange fees, SMEs are usually left to deal with any other fees associated with the payment services provider. For instance, PayPal charges 1.90% and a fixed fee per domestic payment transaction in Finland (PayPal 2025). Adyen and other PSPs have their own Tiered pricing schedule for payment processing, which are made up of fixed fees and variable fees depending on payment method (Adyen 2024).

Finnish regulations prohibit businesses from passing these costs directly to consumers when payments are processed through widely used systems like Visa and MasterCard, requiring SMEs to absorb these expenses internally ([Payment Services Act, Section 46.2](#)) ([See the decision of the Court of Justice of the European Union in Case C-304/16](#)). This highlights the need for businesses to optimise payment methods to minimise costs without sacrificing customer convenience. (Kilpailu- ja kuluttajavirasto 2023)

On the other hand, card payments, despite their higher societal costs (due to fees from payment processors), generally offer businesses more efficient processes and lower operational overhead (Sintonen & Takala 2022, 15). The shift towards cashless payments can streamline business operations by reducing manual work, minimising security risks, and improving cash flow management. This makes card payments economically advantageous for many small businesses, despite the higher societal costs they may entail (Sintonen & Takala 2022, 14-15; Junius et al. 2022, 28).

3.2 Payment Method Legislation

Finland's legislation on payment methods and financial practices focuses on consumer protection, security, and transparency. It aims to simplify digital and card payment processes, ensure fairness in business transactions, and help protect consumers from over-indebtedness. This sub-chapter explores the key aspects of Finnish payment legislation, including the presentation of payment methods, consumer protection, regulation of payment service providers, and payment terms and practices.

A core aspect of Finland's legislation on payment methods concerns how payment options are presented to consumers. This is to a great extent governed by the European Union's Consumer Credit Directive (2008/48/EC), which is incorporated into Finnish law through various regulations. Under Finnish consumer protection law, when multiple payment options are presented, businesses must follow clear guidelines to ensure transparency and avoid promoting high-risk or credit-based payment methods (Kilpailu- ja kuluttajavirasto 2023).

One of the key regulatory developments introduced in recent years is obligation for online retailers to present available payment options in a way that helps guide consumers to making more financially responsible choices. For instance, according to the Finnish Consumer Protection Act (38/1978) and the European Consumer Credit Directive, credit-related payment options must not be pre-selected. This is in order to ensure that consumers make informed decisions about their preferred payment method, as well as to not encourage impulsive spending and/or contribute to over-indebtedness (Suomen Pankki 2022).

In this regard, a significant amendment came into effect in October 2023, introducing a specific order for the presentation of payment methods: first, immediate payment methods (e.g. bank transfers and debit cards); second, credit-optional methods (e.g. services like Klarna); and lastly, credit-dependent methods (e.g. credit cards or loans). This structure is designed to encourage consumers toward payment options have a lower risk when it comes to debt accumulation (Bräutigam & Lehtilä 2023). By regulating the way in which payment methods are organised in this manner, the Finnish legislation promotes financial responsibility and mitigate consumer over-indebtedness.

3.3 Consumer Protection

Consumer protection in terms of payment methods is a key part of Finnish financial law. Finland has a strong history of upholding the rights of consumers, as demonstrated in its consumer protection legislation. The Consumer Protection Act (38/1978) governs how payment terms and methods are communicated to consumers, meaning that anything relating to payment must be transparent. A key part of the Act is the requirement of merchants to provide consumers with clear and comprehensive information on the costs of various payment methods, including any costs associated with credit services or deferred payments (Kilpailu-ja Kuluttajavirasto 2023). The implementation of the EU Consumer Rights Directive (2011/83/EU) in Finland is an additional element in the protection of payment matters in Finland. This directive applies across the EU to all member states and provides the opportunity for consumers to cancel certain transactions with a 14- day window of time ('cooling-off period') when purchasing goods online. This cooling-off period covers payment methods involving credit, which offers consumers some protection from possibly rushed or ill-considered decisions when making purchases (European Union 2022).

In addition to the above, Finnish law has also turned focus to protection against fraud and deception by emphasising identity verification. For credit payment methods such as instalment payments, strong authentication processes are required. This is consistent with the European Union's Revised Directive on Payment Services (PSD2), which requires payment service providers to apply strong customer authentication (SCA) mechanisms to protect consumers from fraud, especially for online purchases (Commission Delegated Regulation (EU) 2018/389, 2017).

3.4 Regulation of Payment Service Providers

Payment service providers (PSPs) in Finland are regulated by the Payment Services Act (297/2010), which aligns with the EU's Payment Services Directive (PSD2). This regulatory framework ensures secure and compliant operation of PSPs under consumer protection legislation. Finnish law requires that all PSPs are licensed by the Financial Supervisory Authority (FIN-FSA),

which oversees the PSP and regulates their operations' strict operational standards. For example, the PSP must operate with transparency and be financial solvent (FIN-FSA 2018).

In addition to overseeing operational standards, the FIN-FSA also mandates that PSPs comply with security requirements, provide transparency regarding fees, and manage consumer complaints. In addition, the Financial Supervisory Authority of Finland enforces laws that require PSPs to keep consumers' money segregated in order to keep it safe in a case of financial distress of the service provider. The PSD2 has introduced an additional requirement for strong customer authentication (SCA) in an effort to increase the security of online transactions and reduce fraud (European Commission 2023). Furthermore, the Payment Service Act mandates that PSPs provide consumers with clear and descriptive information on fees and contract terms before the transactions occur. If there are any additional charges, these must be given upfront, thus eliminating hidden fees (Suomen Pankki 2022).

3.5 Legal Tender and the Right to Pay in Cash

Finland's official currency and legal tender has been the euro (€) since January 1, 2002. The euro had itself operated as 'book money only' for a 3-year period prior to this date and, the last day the Finnish markka as a legal tender was February 28, 2002 (European Commission s.a.). While Euro coin and banknotes are legal tender, Finnish law does not require acceptance of them universally for every transaction. According to the contractual freedom principle, businesses can choose what methods of payment they will accept, including the right to refuse cash, as long the business is transparent to customers prior to the transaction (Harju & Snellman 2021, 6). The Bank of Finland stresses that cash payment acceptance is important especially for services that are essential for the public, and monitors country wide availability of cash services. For example, concerning essential services, such as where water, heating, electricity, and telecommunications, Finnish law mandates that businesses offer multiple ways of payment of those services. This is to ensure that consumers are able to pay critical services (Suomen Pankki 2022). However, businesses may have certain rights to refuse cash payments, specifically due to non-face-to-face transactions, such as e-commerce and remote services. In these instances, other payments would most typically be credit card, digital wallet or a bank transfer (Yrittäjät 2023).

3.6 Cash Payment and Taxation

To address the shadow economy and promote transparency, Finnish legislation (Act 658/2013) obliges companies to provide a receipt for cash transactions. This has been effective since January 1, 2014. The requirement applies to all cash payments or equivalent, and the receipt could

be in paper or electronic form. The receipt must contain certain information as specified in the law, to help minimise tax evasion and allow for accurate financial reporting (Verohallinto 2024).

When it comes to cash transactions, same tax rules as digital or card payments apply. According to Finnish tax law, businesses must report all income from all sales, regardless of whether the sales are settled by cash and/or other means. Finnish Tax Administration (Verohallinto) obligates all businesses to maintain records of all transactions, including cash payments, to stay tax compliant. For example, businesses must provide receipts for cash payments, containing details about the amount, date of transaction, and the nature of the transaction (Verohallinto 2024).

To ensure compliance with tax obligations and prevent tax evasion, cash transactions are subject to specific inspection. Where businesses operate in industries that are more prone to underreporting (such as restaurants and bars), Finnish authorities frequently conduct inspections and audits to ensure proper reporting of income received in cash. Finland's VAT Act (1501/1993) regulates the tax implications of cash payments to ensure the same VAT rules apply regardless of payment method (Verohallinto 2017).

3.7 Anti-Money Laundering and Cash Transactions

Finland follows the EU regulations on anti-money laundering (AML) and counter-terrorism financing (CTF), which impact cash payments. The Anti-money laundering act (444/2017) states that businesses such as, but not limited to: financial services institutions, real estate agencies, and casinos must report cash transactions above a certain threshold, which is set at €10,000. This is in place to combat money laundering and other illegal financial activities. While this threshold pertains mainly to businesses within the financial sector, it may also apply to some retail situations when the amount of cash involved is large (Lexia Attorneys 2018). In addition, businesses may refuse to proceed with any transaction if they suspect that the cash that they are receiving could be criminal property. This is in line with both Finnish law and EU directives, which impose due diligence requirements upon business to identify and take steps to mitigate risks relating to money laundering activities (Filex 2017, 40).

4 Research Methods

This thesis used a qualitative approach to understand comprehensively the perceptions and experiences of restaurant owners in Helsinki. By focusing on a small, purposively selected sample of participants, this research aimed to obtain richer, in-depth data related to the research questions as opposed to generalised statistical generalisation (Tenny et al. 2022). Moreover, qualitative research lends itself well to identifying the nuance and complexity inherent in participants' attitudes, behaviours and motivations (Palinkas et al. 2015), making it ideal for this research.

Purposive sampling was the primary method of selecting participants and involves the purposeful selection of individuals or businesses that may be most likely able to provide relevant and/or insightful data for the research (Kelly 2010, 109). The purposive sampling technique means that participants will have been involved directly in the research context and thus potentially able to offer fuller, more detailed and better-informed opinions on the research topic (Palinkas et al. 2015). For this research purposive sampling was seen as particularly beneficial as it allows for obtaining a diverse range of views from business owners that have varying levels of engagement and use of cash payments and the prospect of moving towards a cashless model. This was also chosen to help identifying the benefits, limitations and potential challenges of a cashless future.

The data was gathered from the participants through semi-structured interviews. Although surveys were considered at one point in the planning process, semi-structured interviews were selected as they allow for a more nuanced and thorough understanding of participants perspectives while providing the researcher with flexibility to adjust questions based of the obtained responses. Semi-structured interviews also allow the researcher to follow up with probing questions, ask for clarity when appropriate and observe non-verbal communication which can provide valuable insights (Kakilla 2021). Further, there is a more personal level of engagement with participants that can help foster a level of openness and trust during the course of the interview. All in all, semi-structured interviews were chosen for the purpose of this research to allow a better level of consistency across all interviews while providing for the flexibility to explore areas of discussion that have not been anticipated.

All potential interview participants were contacted in advance of the interviews via email or in-person, to introduce the research and its intended purpose. Participants were provided with oral informed consent, to guarantee their full understanding of their rights and options, including the option for them to withdraw from the study at any time (University of Oxford 2021). In addition, the oral informed consent covered aspects of confidentiality and data collection/delivery. Interviews took place either face-to-face or via Zoom according to participants preference, and all interviews were audio recorded and transcribed verbatim.

In terms of data analysis, the study will employ thematic analysis to identify patterns and themes in the responses. Thematic analysis was selected as it was well-suited for qualitative research that aims to explore recurring ideas and understand the underlying meaning within data (Braun & Clarke 2006, 7). The process followed the widely used framework developed by Braun and Clarke, which includes six stages: familiarisation with the data, coding, generating themes, reviewing themes, defining themes, and documenting the findings. (Braun & Clarke 2006, 16-24) Thematic analysis allows for a flexible and systematic approach to data interpretation, helping to draw out key insights relevant to the research questions.

The final sample consisted of five business owners of small businesses, including restaurants, cafes and bars. The insights gathered from these interviews were used to address the central research questions, providing valuable context and identifying the practical implications for restaurant businesses in Helsinki considering the move to a cashless environment. To protect participants' privacy, all businesses were anonymised and referred to using generic names: the vegetarian restaurant, the fusion restaurant, the family-run Middle Eastern restaurant, the seasonal bar and kitchen, and the Mexican restaurant. Below is a research design figure (2) that further explains the author's research approach.

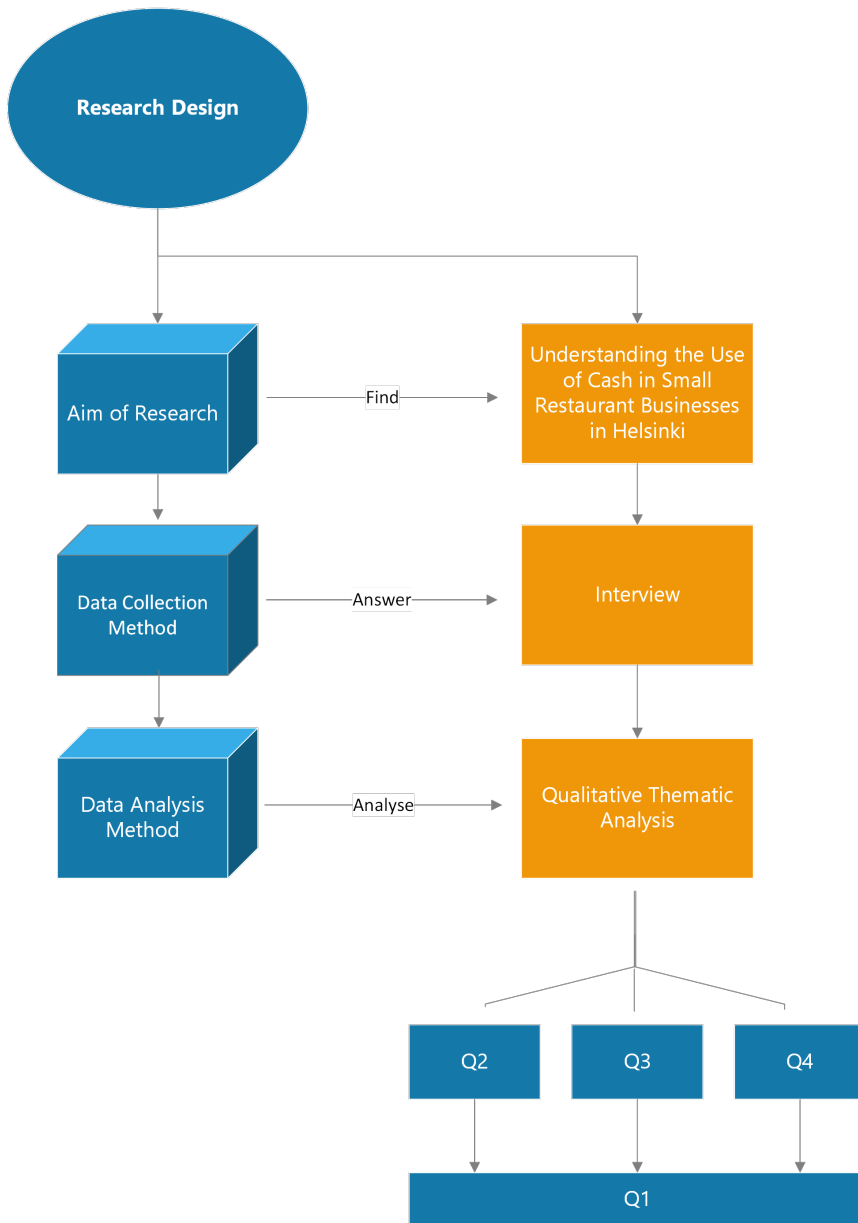


Figure 2. Research Plan

This figure explains the plan of approaching this research. It begins by identifying suitable respondents- typically small business owners—who provide insights into their payment practices. The data is gathered through interviews that allow the participating businesses to talk about their experiences and opinions in detail. The interviews are analysed using qualitative thematic analysis to identify significant patterns and themes from the responses. Findings are be sorted into several thematic areas and then used to provide meaningful insights and understanding of cash use, or non-use, in these businesses. This approach ensures a deep and organised examination of the topic, providing meaningful insights into the role of cash in the restaurant businesses in Helsinki

5 Findings and discussion

5.1 Overview of Analytical Approach

This study applied thematic analysis to examine how small restaurant businesses in Helsinki perceive and respond to physical cash and the broader context of a cashless future. The Technology–Organization–Environment (TOE) framework (Tornatzky & Fleischer, 1990) served as a theoretical lens, guiding the organisation of themes and sub-themes that emerged from semi-structured interviews with five small businesses. While the TOE model contains several sub-factors under each dimension, this analysis focused only on those that were most relevant in the interview data. This approach was consistent with thematic analysis practices, where emphasis is placed on recurring patterns and contextually relevant themes (Braun & Clarke 2006, 16-24).

The businesses included in this research represent a range of small restaurant types operating in Helsinki. These include a family-run Middle Eastern restaurant with 6–7 employees, a seasonal bar & kitchen employing 13 staff members, a Mexican restaurant with a staff of 5, a fusion restaurant with 10 employees, and a vegetarian restaurant with 7 employees at the time of interview. All restaurants were located in Helsinki. The fusion restaurant, seasonal bar & kitchen, and family-run Middle Eastern restaurant were located in Helsinki city centre, while the remaining two restaurants were slightly further from the central Helsinki area.

The interviews were held between 10 June 2024 and 13 November 2024. Each interview session was approximately one hour long and was held in person with the business owner or manager at the restaurant. The interviews were semi-structured to give space for flexibility while also ensuring consistency when it comes to covering key topics. This method was chosen in order to encourage open-ended discussion so as to help participants share their views in depth and provide insights that are specific to their context. The data collected through these interviews formed the basis for the thematic analysis presented in the following sections.

5.2 Technology Factors

5.3 Complexity and Usability Challenges

Complexity came up as a major theme for all five businesses interviewed in relation to both cash and digital payments. The family-run Middle Eastern restaurant, seasonal bar & kitchen, fusion restaurant and vegetarian restaurant all shed light on the fact that handling cash, including counting, storing and depositing it, can be very time consuming. Another related aspect mentioned by several interviewees were manual errors, added workload and the hassle involved in handling change. The owner at the fusion restaurant for instance noted, "Sometimes we are so busy that

accepting cash is just not an option, because by the time of taking in cash and returning the change to the customer, we could already be preparing an order." In addition to this, they described that there is a higher possibility of error when it comes to handling change with cash payments. These findings go on to show that while cash is indeed a traditional and long-established payment method, its handling can nonetheless be seen as complex in busy or low-staffed environments. This goes hand in hand with Nazir, Rizwan, and Zhu's argument that technologies or systems seen as complex or inefficient are less likely to be adopted and vice versa.

Another interesting aspect raised by the fusion restaurant owner was that hygiene concerns when it comes to physical money, especially post-covid, are one factor connected to their preference for contactless payment methods. This relates to the broader trend discussed in recent literature, where physical currency has been increasingly seen as less hygienic in comparison to contactless payment methods, which in turn has contributed to the decline in its use in service environments, especially following the COVID-19 pandemic (Hellqvist et al., 2021). Finally, the seasonal bar & kitchen owner pointed out the risk of human error when it comes to handling cash, which adds to the daily challenges of business operation. On the same note, in their article titled "An Extended Technology-Organization-Environment (TOE) Framework for Online Retailing Utilization in Digital Transformation: Empirical Evidence from Vietnam," Nguyen, Le & Vu (2022, 6-7) discuss how managerial decisions around payment technology often include assessing operational inefficiencies and risks, which are factors that may have greater significance than familiar or long-established methods.

5.4 Availability and Transaction Infrastructure

All businesses had access to card terminals, mobile payment systems, and bank services. However, concerns were raised about the cost structures associated with these services. Transaction fees, equipment rental, and service agreements were noted by the Family-run Middle Eastern restaurant and seasonal bar & kitchen owners. One participant remarked, "We pay rent for the payment terminal each month...if you cut one thing out, you would save money with that." These align with the concept of availability in the TOE framework, which includes not just physical access to technology but also affordability and vendor reliability (Zhu et al. 2003, 184). Apart from cost, some of the owners and managers interviewed expressed uncertainty when it comes to the terms and transparency of these service agreements, explaining that expenses can grow over time without being noticed, especially when the volume of business differs based on season. For such small businesses with limited resources, the relationship with the vendor can affect not only their adoption decisions, but also their satisfaction with the system they have chosen in the long run.

This broader analysis of availability sheds light on the fact that even when accessibility to technologies is in place, the adoption of the technology itself may still be limited due to recurring costs or concerns about the reliability of external service providers. In other words, for small businesses, these cost and service-related matters can have just as much influence as the technology itself when deciding whether a solution will work and be sustainable in the long run.

5.5 Reliability and Backup Strategies

Throughout all the interviews conducted, the theme of system reliability came up strongly. The seasonal bar & kitchen and the vegetarian restaurant, for instance, mentioned that accepting cash was an important backup plan in case of internet outages or technical failures. "If the internet goes down, you can't get the connection to the bank...then you always have to worry, did the payment go through?" In the vegetarian restaurant, cash was also mentioned as a practical fallback to allow employees to purchase ingredients in urgent situations when the owner was not available. This reflects an operational requirement for payment system reliability and contingency planning, which may be seen as an extension of technology characteristics (Lippert & Govindarajulu 2006, 151).

These examples show that for small businesses, especially those that are independent or have limited technical resources, reliability is not just a preference but a necessary part of choosing a payment system. Although digital methods offer speed and convenience, the risk of system failure means it is important to have a reliable backup. This highlights that, in these settings, a suitable payment system must be flexible and able to support continued operations in different conditions, and even when problems occur.

5.6 Organisational Factors

5.7 Organisational Readiness

All five businesses demonstrated a basic level of readiness to manage multiple payment methods. The Family-run Middle Eastern restaurant, Mexican restaurant, and vegetarian restaurant said they handle their own bank deposits, which suggests a certain level of operational experience and financial management capability. However, the seasonal bar & kitchen and fusion restaurant noted challenges due to limited staff and independent operation. As one owner described, "We are totally independent. So, I'm just thinking, what if something would go wrong?" This reflects a common vulnerability often found in small businesses where there may be a lack of internal capacity or backup resources to respond to disruptions in their systems or problems in operations. The owner of the fusion also mentioned that they preferred to minimise the time and resources required for cash handling since cash transactions were so infrequent. This goes on to show that, in some cases, limited resources can lead businesses to streamline their operations and prioritise essential tasks.

In this case, readiness is not only about having resources but also about choosing how best to use them—avoiding tasks that do not add value or align with how customers prefer to pay. Together, these examples align with Li's (2020, 108) understanding of organisational readiness as the availability of financial, human, and technical resources. They also suggest that in small businesses, readiness is often dynamic and shaped by both constraints and strategic choices made in response to practical realities.

5.8 Top Management Support

Across all interviews, the role of the owners was a central theme. Business-level decisions related to whether and how cash was accepted were made at the management-level. The owner of the family-owned Middle Eastern restaurant expressed concerns for older customers and tourists, emphasising a customer-oriented perspective. Similarly, the owner of the seasonal bar & kitchen recognized the need for a contingency plan in a cash-free environment. . In the case of the vegetarian restaurant, the owner initiated moving away from cash, post-COVID pandemic, by making the decision not to accept cash anymore for the professed desire to a relieve operational burden and risk. These observations connect to the arguments made by Nguyen, Le, and Vu (2022, 6) on how management support encapsulates understanding of the innovation and aligning it with the business needs. Although some decisions were motivated by practical concerns, this demonstrates how management can lead strategic changes in response to evolving business conditions. The owner's engagement in reassessing and modifying payment practices shows the adaptability and energy associated with strong top management support.

Across all cases, business owners and managers seem to be the principal actors in decisions that have to do with payment systems. In small businesses, leaders are often directly involved in daily operations allowing their leadership and strategic input to make a substantial impact on if, how, and when changes to payment practices occur. This aligns with the TOE framework's emphasis on top management as key enablers of innovation, creating the space to consider, enable, and sustain technological change (Nguyen, Le & Vu, 2022, 6).

5.9 Organisational Size and Informal Structures

All five businesses studied were small-scale enterprises, often family-run or independently operated. This resulted in informal organisational structures, where responsibilities were frequently shared or concentrated among a small number of individuals. In these cases, owners and managers themselves handled a wide range of tasks that would typically be delegated in larger organisations—from daily operations and financial management to customer service and strategic

decision-making. This structural informality can create agility in decision-making but also imposes limitations in terms of time, capacity, and administrative bandwidth.

As noted by Nazir, Rizwan, and Zhu (2025,184), organisational size and structure influence technology adoption by shaping both flexibility and the ability to allocate resources effectively. In larger businesses, tasks such as managing cash deposits or handling technical troubleshooting may be distributed across departments or staff. In contrast, in small enterprises with limited personnel, the burden of additional administrative tasks—such as counting cash, maintaining bookkeeping accuracy, or coordinating with external service providers—can significantly disrupt workflow. For example, the owner of the seasonal bar & kitchen expressed that limited staff meant that roles were shared, and every additional process (e.g., handling or counting cash) had a significant impact on operations. Cash related tasks were not just time consuming but also required logistical coordination, such as ensuring cash change was available as well as depositing cash to the bank. Similarly, the fusion restaurant owner noted that continuing to manage systems for cash payments required more time and effort than seemed necessary, especially given that cash made up only 1 % of total transactions.

These findings emphasise the fact that organisational size and structure are not only background characteristics, but active factors in shaping how and why certain payment systems are adopted or discontinued. In small restaurant businesses, where staffing is lean and roles are fluid, even seemingly minor tasks may have broader implications for efficiency and strategic prioritisation.

5.10 Environmental Factors

5.11 Customer Expectations and Tourist Preferences

Customer expectations were one of the most influential external factors across the interviews. The family-run Middle Eastern restaurant, seasonal bar & kitchen, and vegetarian restaurant all reported higher cash usage among tourists and older customers, while younger customers typically preferred cards or mobile payments. While the owner at the fusion restaurant described cash as a last resort, they added that it was also accepted mainly for tourists or in exceptional cases. As Chiu et al. (2017, 30) note, businesses are often pressured to adapt their payment systems to align with customer preferences—particularly in service industries. For businesses that serve international clientele and older customers, flexibility in payment options remains essential, as both groups may face limitations with local digital tools or prefer more familiar, traditional methods of payment.

This theme was consistently echoed throughout the interviews. Several participants emphasised that accepting cash was not primarily about convenience or preference, but rather a way to remain inclusive toward specific customer groups. For some customers, particularly older individuals or

those visiting from outside the EU, digital payment infrastructure—such as compatible cards or mobile banking apps—might be unavailable or unfamiliar. In these cases, refusing cash could create an uncomfortable customer experience, or even lead to lost sales. This concern was especially relevant for restaurants situated in central Helsinki, where high tourist traffic meant owners were frequently navigating diverse customer needs. As Zamora-Pérez, Marini, and Honkkila (2024) point out, the continued use of cash among certain groups is not only a matter of access to digital tools, but also of preferences, habits, and sociodemographic factors that shape payment behaviour.

This reliance on cash among certain customer groups also influenced operational decisions. For example, the owner of the family-run Middle Eastern restaurant noted that while digital systems were preferred internally, cash continued to be accepted to accommodate the 35 % of tourists who relied on it. Similarly, the seasonal bar & kitchen owner observed that some customers were even apologetic when paying with cash—suggesting a broader social shift in norms, yet one that has not fully eliminated the need for physical money. This supports findings by Heikkinen (2018), who argues that cash remains important for those seeking ease, familiarity, or privacy, particularly older adults and tourists.

Overall, these findings suggest that while digital payment systems are increasingly dominant—particularly among younger and local customers—external demographics such as age, nationality, and digital familiarity continue to shape payment strategy. Within the TOE framework, these pressures from the customer environment represent a critical external factor influencing adoption decisions (Tornatzky & Fleischer, 1990; Oliveira & Martins, 2011, 112). For small businesses serving a diverse clientele, balancing digital progress with inclusive payment practices remains a strategic necessity.

5.12 Regulatory Context and National Trends

Participants did not mention any formal regulatory pressure to go cashless, but they acknowledged a general national trend toward digital payments. This shift was widely recognised as a reflection of broader technological change in Finland, accelerated further by the COVID-19 pandemic (Hellqvist et al. 2021). The family-run Middle Eastern restaurant in particular raised concerns about the potential exclusion of specific customer groups—such as elderly customers and international tourists—if future regulations or policy shifts were to discourage or limit the use of cash. This supports the view of Zhu & Kraemer (2005, 70), who argue that regulatory environments shape technology adoption not only through formal mandates, but also through indirect signals, incentives, or perceived national direction.

This sense of soft pressure—where businesses feel compelled to adapt to what is increasingly considered the norm—was subtly present in several interviews. For instance, the seasonal bar & kitchen and the vegetarian restaurant both indicated that their preference for digital systems had grown in part due to changes in customer behaviour, which they viewed as a reflection of national trends. Yet, the lack of a formal mandate to go cashless created room for flexibility. Owners made clear that, while digital systems were more efficient for their operations, removing cash entirely was not yet necessary or advisable, particularly when considering the needs of marginalised or less digitally connected groups.

This perspective suggests that in Finland, the policy landscape has so far enabled businesses to navigate payment system transitions at their own pace. However, the perceived direction of travel—towards a cashless society—may still influence their long-term decisions. Within the TOE framework, this reflects the role of the regulatory environment not just as a rule-setting mechanism, but as a broader context in which norms and expectations are formed (Tornatzky & Fleischer, 1990; Oliveira & Martins, 2011, p. 112). For small businesses, this indirect influence can be powerful—encouraging adoption of digital payment tools while also raising concerns about inclusivity and resilience in the face of change.

5.13 Competitive and Social Norms

While direct competitive pressure was not a dominant theme in the interviews, social expectations and reputational concerns emerged as subtle yet influential factors. Several participants described situations where customers expressed mild discomfort or even apologised for using cash. The seasonal bar & kitchen owner, for instance, observed, “Usually when people pay with cash, they’re also kind of apologetic...like ‘I’m sorry, I have cash, is it okay?’” Such interactions suggest a changing cultural attitude toward cash, where digital payments are increasingly seen as the expected norm. This shift in perception places indirect pressure on businesses to modernise, even in the absence of direct competition or regulation. Moreover, this owner noted concerns about potentially losing customers if they no longer accepted cash. While digital payments were operationally easier for the business, there was an awareness that fully eliminating cash could alienate certain groups, especially those who still rely on or prefer physical money. This highlights how even socially-driven expectations—such as the desire to appear modern, efficient, or inclusive—can affect strategic decisions, particularly in service environments where customer experience is closely tied to payment flexibility.

These findings reflect what Nazir, Rizwan, and Zhu (2025, 185) describe as the influence of market and peer behaviours within the broader environmental dimension of the TOE framework. Although not formal competitors, other businesses in the same area or industry may set implicit benchmarks

for what is considered acceptable or expected. In more densely populated areas like central Helsinki, where restaurants operate in proximity and serve overlapping customer bases, perceived norms around payment options can shape reputational dynamics. Being “behind” in adopting digital solutions, or on the contrary, appearing too inflexible by rejecting cash, could carry reputational risks.

In this way, social and competitive norms serve as an environmental pressure point, one that is less concrete than regulation or infrastructure, but equally capable of shaping how and when businesses adapt. Small businesses, particularly in hospitality, are especially sensitive to these perceptions, balancing their own resource limitations with the need to remain attractive and responsive to changing customer expectations.

5.14 Availability of External Services

Access to service providers, such as card processing companies or cash collection services, was discussed by all participants. The seasonal bar & kitchen used a weekly pickup service for cash deposits, while others handled deposits internally. The Mexican restaurant owner shared that their shift to card-only payments was influenced by a past robbery incident, underlining how physical cash on premises can elevate risk. These findings align with Ifinedo (2011), who emphasises that the presence of external technical support and infrastructure influences adoption.

Access to external service providers, including payment terminal vendors, card processing companies, and secure cash-handling services, was a relevant theme across all interviews. These services appear to play a critical role in how the small businesses manage their payment systems and make decisions around whether to continue accepting physical cash. For example, the seasonal bar & kitchen relied on a weekly third-party cash pickup service to manage deposits. While this service was sufficient given the low volume of cash handled, it still added logistical complexity and associated costs. Other businesses, such as the family-run Middle Eastern and vegetarian restaurants, chose to handle cash deposits internally, with owners responsible for bank runs. This approach, while cost-saving, placed added responsibility on a small number of individuals and introduced security and operational risks—particularly in family-run or leanly staffed environments. In contrast, the Mexican restaurant had shifted entirely to digital payments, a decision heavily influenced by prior incidents of break-ins. The owner explained that maintaining cash on site had made the business more vulnerable, and removing it altogether was a way to improve safety and reduce stress.

These examples support Ifinedo's (2011) argument that the availability and reliability of external services—such as technical support for card readers, vendor stability, and secure cash handling—

can significantly shape how businesses adopt and maintain payment technologies. For small businesses, especially those with limited staffing and physical infrastructure, the decision to work with or rely on external providers is not only a matter of convenience but also one of risk management and resource optimisation. Furthermore, affordability plays a crucial role. Several participants discussed the cost of renting card terminals and paying transaction fees, which could add up over time. The owner of the fusion restaurant noted, “We pay rent for the payment terminal each month... if you cut one thing out, you would save money with that.” These financial considerations are closely linked to the practical availability of services—what’s technically possible may not always be economically viable for smaller businesses.

Within the TOE framework, the availability of external services represents a key enabling or constraining environmental factor. It includes not only access to physical infrastructure and vendor networks, but also their cost-effectiveness, reliability, and alignment with the needs of micro-enterprises. For businesses navigating the shift between cash and digital systems, the presence or absence of such services can heavily influence the suitability of either approach.

5.15 Reflection on Key Findings

Across the five cases, themes emerged consistently under each dimension of the TOE framework. Technological factors centred around the complexity of handling cash and the availability (and cost) of digital systems. Organisational factors highlighted the role of small business structure, managerial decision-making, and resource limitations. Environmental influences were most pronounced in customer expectations and tourist behaviour, with a backdrop of national digitalisation trends.

Rather than suggesting a uniform direction toward cashless adoption, the analysis reveals a more nuanced picture. Cash remains a valuable component of business operations for reasons ranging from operational resilience to customer inclusivity. While digital systems offer convenience and efficiency, they also introduce new costs and dependencies. In other words, the findings highlight the importance of maintaining flexibility in payment systems, especially in contexts where customer bases are diverse. For policymakers, this underscores the need for inclusive approaches that consider the impact of digitalisation on vulnerable or transitional groups, such as tourists and the elderly.

The TOE framework has helped clarify how these various pressures intersect to shape real-world business choices around payment systems in Helsinki’s small restaurant sector. For small business owners, this framework can serve as a practical tool for evaluating payment options by weighing technological suitability, organisational capability, and environmental context.

Furthermore, this research extends the TOE framework by reinforcing its applicability in small-scale, service-oriented contexts where hybrid models (not full digital transformation) are often most appropriate. It also highlights less-discussed variables such as operational resilience and hygiene (raised during the interviews), which can enrich future adaptations of the model.)

6 Conclusion

This thesis explored how a cashless future may influence small restaurant businesses in Helsinki, applying the Technology–Organisation–Environment (TOE) framework as a lens for analysis (Tornatzky & Fleischer, 1990; Oliveira & Martins, 2011). Based on qualitative data from interviews with five restaurant owners, the study reveals that the adoption and rejection of cashless systems are shaped by a dynamic interplay between technological convenience, organisational readiness, and external pressures such as customer behaviour and perceived digital trends (Nazir, Rizwan, & Zhu, 2025).

The research shows that while many small restaurants are shifting towards digital payments due to convenience, hygiene (Restaurant 4), and customer expectations (Chiu et al., 2017), physical cash remains in use for specific reasons. These include serving older customers and tourists (Heikkinen, 2018), managing operational risks during digital outages (Lippert & Govindarajulu, 2006), and offering flexibility in handling urgent expenses. The findings also highlight the managerial burdens associated with cash, such as time spent on banking, error-prone counting, and vulnerability to theft (Nguyen, Le, & Vu, 2022).

6.1 Contribution to Knowledge

This study contributes to the growing body of literature on digital payment adoption by focusing specifically on small-enterprises in the restaurant sector—an area less explored in previous research. Unlike studies centred on consumer preferences (Puusniekka, 2020; Carroll-Himberg, 2023), this thesis emphasises the perspectives of business owners who must balance operational realities with evolving market norms. By situating the findings within the TOE framework, the research not only validates its applicability to SMEs (Oliveira & Martins, 2011) but also proposes nuanced variables such as system resilience and physical hygiene as emerging concerns.

6.2 Practical Implications

For small restaurant owners, the findings offer a structured approach to assessing payment system choices based on internal capacity and customer diversity. For policymakers, the research underlines the importance of supporting digital transitions with inclusive measures that consider the needs of vulnerable populations, including the elderly and tourists (Heikkinen, 2018; Zhu & Kraemer, 2005). Payment service providers can also use these insights to refine their offerings for small hospitality businesses, especially those facing staffing or infrastructure constraints (Ifinedo, 2011).

6.3 Limitations and Recommendations for Future Research

While this study provides meaningful insights into the usage of physical cash and the implication of a cashless future on small restaurant businesses in Helsinki, it is essential to acknowledge the inherent limitations that come with qualitative research conducted within a one-year timespan. Due to the relatively short duration, the research may not fully capture long-term trends or changes in participant perspectives that could occur over extended periods. Given Finland's rapid move toward digital payments and ongoing technological advancements, businesses' practices and preferences are likely to evolve in the future (Clausnitzer 2024). However, by focusing on a defined timeframe, this study offers a timely snapshot that is highly relevant for understanding current phenomena and laying the groundwork for future research. Additionally, as a qualitative study, it prioritises depth over breadth. The study's focus on small restaurant businesses within Helsinki offers a detailed perspective but may not fully represent the diverse payment practices across different regions and industries in Finland. For instance, businesses in rural areas or other sectors might face unique challenges and customer preferences that influence their payment methods differently due to variations in infrastructure, customer demographics, and local preferences (Anna 2019). Future research could expand the sample size, include businesses from multiple cities, or incorporate customer perspectives to complement business-owner insights. Quantitative studies might also help measure how the identified factors statistically influence adoption trends (Nazir, Rizwan, & Zhu, 2025).

Despite these limitations, this research offers valuable contributions by highlighting critical themes around the use of cash in small restaurant businesses in Helsinki and the implication of a cashless future on them, raising important questions for further exploration. The findings serve as a stepping stone for longitudinal studies and complementary quantitative research, encouraging continued inquiry into this dynamic area.

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Appendix

Interview Questions

General Questions:

1. Can you describe your business and the types of transactions you typically handle?
2. Approximately what percentage of your total transactions are made using physical cash versus digital payments (e.g., card, mobile)?
3. How frequently do customers choose physical cash over digital payment methods?

Benefits and Challenges of Physical Cash

4. What are the main benefits of accepting cash for your business and your customers?
5. What challenges or negative impact does handling physical cash create for you or for your business?
6. How do cash transactions impact your bookkeeping, accounting, or financial reporting processes?
7. What financial or operational costs are associated with handling cash?

Customer Preferences

8. Why do you believe some customers prefer paying with physical cash?
9. Are there particular customer groups or demographics that tend to use cash more frequently?
10. Do you notice any trends—seasonal, weekly, or situational—in cash usage among your customers?
11. Are there specific types of transactions or products where cash is more commonly used?

Going Cashless

12. What challenges would your business face if it could no longer accept physical cash?
13. How might going cashless impact your customer relationships and brand perception?
14. Are there specific risks or concerns you associate with transitioning to a fully cashless model?
15. What steps would be needed to transition to a cashless system, and how feasible is that for your business?
16. Have you already taken any steps to reduce cash transactions? If so, what has been the impact?