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EXECUTIVE SUMMARY OF THE THESIS

Analysis of drivers and barriers to the acceptance of digital and mobile payments by merchants in Italy

TESI MAGISTRALE IN MANAGEMENT ENGINEERING – INGEGNERIA GESTIONALE

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1. Introduction

Payment is a crucial economic activity, with millions of daily transactions occurring globally. Throughout history, payment methods have progressed from barter to payment cards and new technology now facilitates faster payments with benefits for all parties involved: consumers, retailers, and merchants. Nonetheless, some merchants still hesitate to fully adopt electronic payments. This dissertation centres on the examination of which factors act as **drivers** and which factors act as **barriers** in the acceptance and use of both **card-based** and **mobile** payments by Italian merchants. For the purposes of this study, digital payments include all card-based systems, i.e., payments made with debit, credit, or prepaid cards and with NFC-based wallets, since these methods involve no changes in the way merchants process payments. Conversely, mobile payments include payments made with a smartphone, excluding NFC-based wallets, that is, transactions with non-card-based applications, such as QR codes, which have been adopted voluntarily in Italy. This distinction holds significance because of the obligatory nature of the first payment category. The proposed framework analyses factors that positively or negatively impact the use of

electronic payment services, allowing policymakers and providers to adjust their strategies to reduce cash use. Additionally, it is possible to reveal that some factors are interrelated among them, thus mitigating, or enhancing the effect of other factors on the acceptance and use of electronic payments by merchants. Hence, this focus can assist not only stakeholders within the Italian context, but also those countries that have similar characteristics and similar regulatory environment to that of a developed country.

2. Relevance of the topic

Existing research on payment technologies primarily focuses on the adoption by consumers [1]. Also, the limited number of studies that investigate merchants' perceptions only consider a single payment method (i.e., digital or mobile payments) and/or concentrate on medium to large-sized businesses, neglecting smaller ones. Nevertheless, **small merchants** represent the foundation upon which a comprehensive understanding of the phenomenon can be attained. Additionally, since existing studies focus on developing countries, no framework has yet been devised to consider the factors that influence the adoption, acceptance, and usage of electronic payments by merchants in Italy. This country

presents an interesting context for analysis, because, despite the implementation of numerous **policies** aimed at **incentivising digital payments**, Italian merchants are still reluctant to adopt these instruments. Therefore, the thesis aims to investigate the drivers and barriers in play within a **developed country**. The results can serve as an exemplar and should be implemented in nations with comparable economic, cultural, and legal conditions.

3. Objectives of the thesis

The overall objective of the thesis is to investigate the factors of the acceptance and use of digital and mobile payments addressing the following research questions:

- **RQ1:** How do Italian merchants decide whether to accept and use digital and mobile payments?
- **RQ2:** How do these factors influence themselves?

To address these inquiries, it was essential to precisely identify the case studies and distinguish at least two geographical locations to reveal different findings. As explained by Eisenhardt, selecting the appropriate case studies is crucial when building theories from multiple case studies [2]. Therefore, we chose **bars** and **restaurants** with an annual turnover of less than €400,000. This decision was based on three reasons. First, these businesses are widespread throughout the territory, therefore they constitute the majority [3]. Second, they are **cash-intensive sector**. Third, daily transactions involving these merchants are characterised by a lower average receipt and thus may be more sensitive to the fee and transaction costs of electronic payments. A framework was developed to capture all the important factors that affects the decisions of merchants and thus enlarging the knowledge on the subject in a country where the transition to digital payments is particularly taking hold. Finally, the results also allowed to draw some observations on which factors are most relevant, which have an influence on other, and what steps can be taken by policy makers and payment service providers to foster a new digital payments scenario.

4. Methodology

4.1. Literature Review

Given the numerous theories on technology acceptance and the attempts made by other scholars to develop frameworks focused on the use of either digital or mobile payments, the most suitable approach was to start from the diverse contributions to the literature, following Okoli [4]. **Scopus**, **Web of science** and **Google Scholar** were the databases used and they have been queried with the different key words. Subsequently, the **Snowball methodology** was employed to ensure a comprehensive and reliable literature search. In delving into the factors influencing the acceptance and use of e-payments, it was important to **extract and analyse** all the information derived from them. Therefore, the papers were summarised to make them easier to navigate and to understand which factors were common and which were not. The last step was to create a table of the main drivers and barriers highlighted. This led to understanding the **limitations** of literature and **identifying gaps**.

4.2. Multiple case study approach and theory-building

The application of multiple case studies enabled to investigate and bridge a gap in literature. The case studies investigate contemporary phenomena in a real-life context [5] which, as emerged from the previous literature review phase, are still unexplored [6]. The first important step was the *selection of the case studies*: a theoretical sampling approach was chosen, i.e., to select those merchants who reflected the right characteristics and could then be compared. The subsequent phase (*crafting instruments*) was based on utilizing semi-structured interviews to ensure flexibility and structure while granting interviewees room to elaborate on their ideas and modify the interviews as new factors emerged. After the analysis of the interviews, the *within-case analysis* was carried out. Concerning this phase, interview content was analysed through inductive coding and the creation of inductive coding trees. Subsequently, *cross-case analysis* was carried out, looking for similarities and differences between each case study. This comparison could lead to the creation of new concepts. The process described was highly

iterative and linked to the subsequent two stages. Firstly, *shaping hypotheses*, in which constructs were defined; secondly, the *enfolding literature* allows the comparison between emerging ideas and similar or contradictory literature, thus reinforcing the generalisability of the emerging framework. Finally, the closure of this process was achieved when the saturation point was reached: addition of new cases did not yield any new factors, and the iteration between theory and data did not contribute to incremental knowledge.

5. State of the art

Digital payments, although introduced in the mid-20th century, have developed rapidly since the 2000s with the advent of the Internet, making them one of the most widely adopted technological tools. They are subject to **user choices** that are not always rational, but often driven by psychological factors, as explained by **technology acceptance theories**, which examine individual behaviour in dealing with and resisting new innovations. Although the existing studies differ in various aspects, the factors that are most frequently mentioned relate to the economic aspects, the usefulness and simplicity of the payment services, the trust and image in the providers and the technology scepticism. Each of the factors identified in the existing research has been categorized according to its influence on merchants' payment choices, respectively into **drivers** and **barriers**.

6. Case studies

The research consisted of **eight interviews** with retailers. Investigating two nearby cities was essential to gather varied testimonies and viewpoints. It must be noted that 5 out of 8 respondents had a mobile payment application. At the beginning of the investigation, the analysis formulated a research problem and specified what might be important potential variables to investigate, also drawing on existing literature. Emphasising a theory-building approach, we did not have any preconceived notions and allowed respondents to **freely express** their views on digital payments.

Case Study 1: The 40-year-old owner of a small café critiques government policies that enforce **uniform laws** on all businesses, disregarding their

unique features, as small enterprises endure significant consequences due to restricted resources. The owner believes that reducing commission costs would be fundamental to increasing digital payment use among merchants – a view likely shared by many others.

Case Study 2: A man in his sixties is nearing retirement after having run a bar and tobacconist in a shopping centre for 45 years. **Free from external influences**, the interviewee affirms his **independence** in the selection of payment methods, **unaffected** by emerging advances in payment technology.

Case Study 3: The owner of a café, who took over the business from her father four years ago, is committed to **customer satisfaction** and tailoring payment options to the consumers' preferences. She correlates charges associated with electronic payments to the **cost of living** in the region and draws contrasts with major cities where elevated prices can offset such expenses.

Case Study 4: The 70-year-old co-owner of a historic bar serves a **senior customer base** reliant on cash transactions. While acknowledging younger generations are shifting to digital payments, his **limited understanding** of these technologies inhibits his adoption. He perceives digital payments as slow for his clientele and deems them less useful too. He is **open** to new methods if demanded by customers or to attract a younger audience.

Case Study 5: The manager of the café emphasises the significance of weighing the benefits and costs of electronic payments. She bases her decisions on customer satisfaction, as fulfilling consumers' requirements **justifies** the **commission costs** incurred, thereby putting **customer-centricity** at the core of her payment method strategies.

Case Study 6: The owner of a small restaurant sees minimal benefits in electronic payments, viewing them as fast but lacking added value. He values their **convenience in financial management** and is willing to pay higher costs for powerful systems. Satisfay was taken up early, but he voices dissatisfaction with its sole mobile functionality. Although he finds mobile payments slightly less user-friendly than digital ones, he emphasizes the overall importance of electronic payments for his business.

Case Study 7: In a university district, the proprietor of a bar, who has been in business for 15 years, places a **premium** on the **transparency** of

digital payment expenses. He advocates for the **knowledge** of novel payment methodologies among merchants. Since it aligns with customers' inclinations, he favours electronic payments. During lunch service hours, he employs a mobile card reader to serve neighbouring offices too, underscoring the exigency of **adjusting to evolving payment preferences**.

Case Study 8: The owner of a small restaurant who has been in business for 2 years, emphasises the importance of choosing the most suitable payment method, having previously alternated between three card readers. She endorses electronic transactions, signifying a **transformation in payment customs** in Milan. Nevertheless, she acknowledges the widespread use of cash in other areas, highlighting **regional differences in payment habits**. She promotes **compliance with obligations** in accepting digital payments to achieve **equality** among retailers.

7. Results and findings

For the sake of clarity, the findings are presented here in terms of drivers and barriers. Note that the same presentation follows a different order in the thesis. This is because in Chapter 7 we provide a detailed discussion of the different factors, considering their prevalence in the literature and their potentially conflicting effects. Therefore, the propositions in the Executive Summary are not listed in ascending order to maintain consistency with the content of the dissertation.

7.1. Drivers to the acceptance and usage of digital payments

During the analysis, it became evident that the merchants' knowledge about digital payments is a crucial factor that significantly influences their perception and adoption. This factor directly impacts the decision-making processes of merchants, as opposed to being a prerequisite in extant literature. The importance of **remaining informed** to enhance business decisions and offer exceptional customer service is highlighted especially by the merchants operating in a **competitive environment**.

Proposition 1: *The merchant's knowledge positively influences the acceptance and usage of digital and mobile payments; therefore, it can be considered as a driver.*

Interviewees emphasize the importance of perceived usefulness, particularly with respect to the **speed, effectiveness, and convenience** of electronic payments. Mobile payment systems are generally regarded as superior, quicker, and more convenient compared to traditional payment methods.

Proposition 2: *The perceived usefulness positively affects the acceptance and usage of digital and mobile payments; therefore, it can be considered as a driver.*

Technology adoption is heavily influenced by **simplicity**, especially in the realm of digital payments. Merchants claim that digital payment systems are very **easy to use**, which makes them useful for daily activities and anticipates **long-term benefits**. Implementation and administration of these systems are also deemed uncomplicated, further bolstering their uptake.

Proposition 3: *The perceived ease of use positively impacts the acceptance and usage of digital and mobile payments; therefore, it can be considered as a driver.*

Customer satisfaction is of paramount importance, and merchants are willing to consider new methods based on **customer requests**, also those made by tourists and international students. Merchants place customer demands above decisions made by other merchants when adopting new payment methods.

Proposition 4a: *The network externality given by clients' request positively influences the acceptance and usage of digital and mobile payments; therefore, it can be considered as a driver.*

Neighbouring merchants' adoption of new payment methods influences merchants' **decisions** and conveys **trust** and **reliability**. As customers are attracted to establishments that offer preferred payment options, **competition** between merchants intensifies.

Proposition 4b: *The network externality given by other merchants' influence positively impacts the acceptance and usage of digital and mobile payments; therefore, it can be considered as a driver.*

In literature [7], value is defined as a key barrier to innovation adoption, emphasising the importance of **benefits outweighing costs**. The study explores this factor as the relationship between costs and benefits, going **beyond purely economic factors**, such as learning efforts. Contrary to extant literature, merchants do prioritise benefits, indicating a positive value factor and highlighting

the **value-driven adoption** of innovations despite the effort involved. Mobile payments are perceived as offering a higher value.

Proposition 8: *The value positively influences the acceptance and usage of digital and mobile payments; therefore, it can be considered as a driver.*

Hidden costs linked to the usage of cash, such as time consumed for handling, counting, and depositing, might go **unnoticed**. As it turns into a **routine**, traders often do not take this into account. Digital payments, according to interviewees' remarks, provide solutions by **automating** task flows and enhancing the overall **effectiveness**.

Proposition 9a: *The (hidden) cost related to cash usage positively influences the acceptance and usage of digital and mobile payments; therefore, it can be considered as a driver.*

Merchants value **transparent information** on service provider contracts, ensuring there are no hidden costs and facilitating **cost comparisons**. In addition to reducing costs, this helps merchants choose the best service provider and ultimately drive greater acceptance of various digital payments.

Proposition 9c: *The cost transparency positively impacts the acceptance and usage of digital and mobile payments; therefore, it can be considered as a driver.*

Cash transactions entail the risks of **money laundering** and **counterfeit banknotes**, whereas merchants employ sophisticated security measures to prevent **theft**, which correlates with the use of cash. On the other hand, digital payments diminish the probability of robbery, instilling a **sense of safety** among merchants.

Proposition 10a: *The risk related with cash usage positively influences the acceptance and usage of digital and mobile payments; therefore, it can be considered as a driver.*

Italian government policies promoting digital payments are encountering **merchants' dissatisfaction** primarily because of perceived **negative effects on expenses**. The imposition of accepting digital payments as a legal obligation generates discontent, primarily driven by indirect commission costs. Nevertheless, it cannot be said that this policy measure has had a negative impact on the use of digital payments, since usage has increased (that is why it is reported within the drivers); however, this **contrasts** with the perception of merchants, and consequently their acceptance, which remains negative. Tax

incentives are perceived differently and **lack sufficient awareness**. Initiatives such as receipt lotteries and cashback are perceived as ineffective. There is a sense of discontent among merchants which is compounded by the belief that the government is out of touch with the realities of the industry.

Proposition 5: *The governmental policy ambiguously influences the acceptance and usage of digital and mobile payments.*

7.2. Barriers to the acceptance and usage of digital payments

Italian retailers view the service provider's image as a decisive element that impacts the acceptance of payment technologies. Its **absence** leads to the rejection of these tools. The **loyalty to banks** is evident, highlighting the significance of a positive and known company image in promoting the use of digital payment systems.

Proposition 6: *The image of the service provider negatively affects the acceptance and usage of digital and mobile payments; therefore, it can be considered as a barrier.*

Italian merchants have a pronounced **reliance on cash**, which is firmly embedded in the country's payment **habits**. This tradition poses a **psychological obstacle** to the take-up of card-based and mobile payments. Although these tools are seen as beneficial, merchants still prefer cash transactions due to their **familiarity**. **Age** is a factor that influences merchants' **openness to change**, with older individuals generally displaying more resistance than their younger counterparts. However, **changes in behaviour** are noticeable, particularly in vibrant contexts.

Proposition 7: *The tradition negatively influences the acceptance and usage of digital and mobile payments; therefore, it can be considered as a barrier.*

Merchants are highly **sensitive** to the fee and commission costs associated with digital payments, which affect their decisions but also their **profit margins**. Mobile payments are viewed more favourably, particularly with lower commissions and no additional hardware costs.

Proposition 9b: *The cost related with digital and mobile payments negatively influences the acceptance and usage of digital and mobile payments; therefore, it can be considered as a barrier.*

Merchants view technological risk as a likely obstacle to the adoption of digital payments, owing to fears of **confidentiality breaches** and **system breakdowns**. While trust may be established over time, some remain apprehensive of technical glitches, despite their **reduced effect** compared to prior years.

Proposition 10b: *The risk related with technology negatively influences the acceptance and usage of digital and mobile payments; therefore, it can be considered as a barrier.*

7.3. Factors influencing other factors

1. **Governmental policy negatively influences perceived cost related with digital and mobile payments.** Italian governmental policies for promoting digital payments are **presently perceived as ineffective** and leading to merchants' dissatisfaction, resulting in a hindrance due to the **related increased adoption costs**. Additionally, the mandatory card reader is imposing commission burdens on merchants which have **hindered their acceptance**.

2. **Perceived usefulness positively influences value.** Merchants **acknowledge the benefits** of electronic payments, regardless of whether they are digital or mobile, and consider service providers deserving of recognition for their contributions. This enhances the perceived value of implementing electronic payment systems.

3. **Network externality related with clients' and other merchants' influence positively affects image of the service provider.** **Trust** in the **reputation** of the supplier, if endorsed by clients or other merchants, considerably influences the decisions of merchants to embrace (novel) payment methods. Notably, the effect that **customer demand and/or influence** exert on the service provider's image appears to hold greater importance than the influence of other merchants.

8. Conclusions

The thesis contributes to the understanding of the factors that influence the **acceptance** and **use** of **both digital** and **mobile payments** from the perspective of **merchants** rather than consumers in Italy (Figure 1). The explanatory approach significantly contributes to the literature by introducing **new factors** that are unique to digital

payment topic, while **extending existing frameworks** in technology acceptance theories. Several factors were also detailed to fully understand their influence in a scenario as peculiar as the Italian one. Moreover, conducting the study in a **developed country** gives it a distinct advantage over those conducted in developing ones. The outcome of this research is the development of a framework of **drivers** and **barriers** which, although applied to the Italian context, provides the basis for understanding this phenomenon in other similar countries. It offers also **practical insights** for payment service providers and policy makers to promote digital and mobile payments. However, it is important to recognise the limitations of the research, such as the restricted geographical location of respondents and certain demographics (e.g., age), the small sample size which may limit generalisability, and the biases that can arise in a qualitative multiple case study. Despite these limits, the dissertation provides a base for further research that tests the framework more quantitatively, integrate it with other influencing factors, such as financial education, and may indicate a correlation between them.

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Appendix

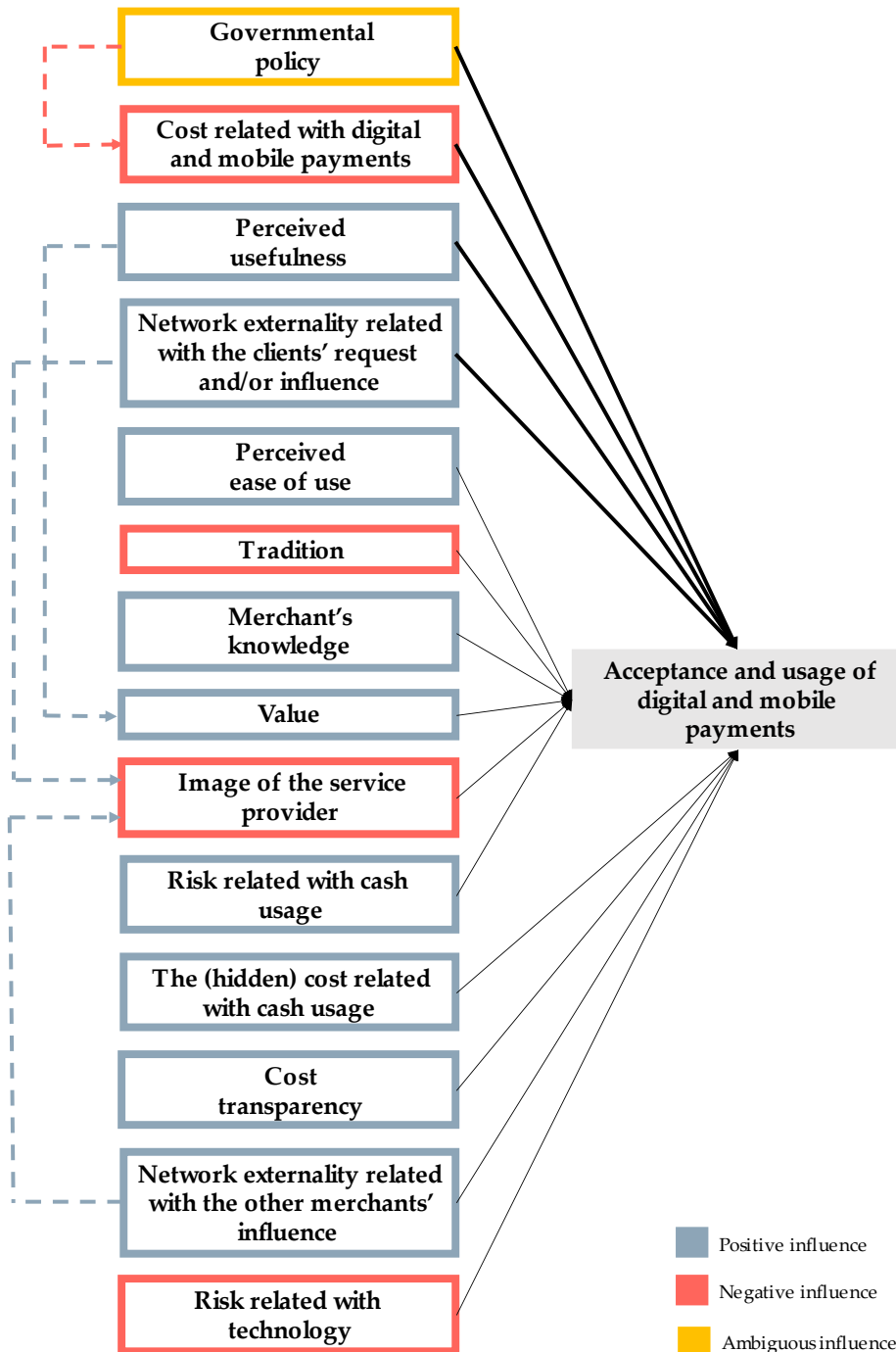


Figure 1: Research framework of the drivers and barriers to the acceptance and usage of digital and mobile payments by merchants in Italy