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Psychological Aspects of Resistance to Innovation: Obstacles to the Implementation of Inventory Management Control Systems in Small and Medium-Sized Enterprises in the Restaurant Industry in Portugal

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Master Thesis

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by

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[Oeiras, 25/06/2025]

Andrei Semenov

ABSTRACT

The Portuguese restaurant sector, a vital component of the national economy, faces significant pressure to optimize costs, yet the adoption of critical tools like Inventory Management Systems (IMS) remains low. This thesis aims to develop a conceptual model explaining the psychological and structural barriers that hinder IMS implementation among Portuguese Small and Medium-Sized Enterprises (SMEs). Employing a Constructivist Grounded Theory approach, this qualitative study analyzes data from thirteen in-depth, semi-structured interviews with restaurant owners, managers, and consultants. The findings reveal a "Model of Structurally Forced Adoption," where a formidable resistance to change is created by a combination of factors: the inertia of traditional management practices, a significant competency barrier due to perceived technological complexity, and a subsequent value-effort calculation that consistently undervalues the benefits of IMS. The research indicates that this resistance is rarely overcome by proactive desire but is instead typically broken only by the structural pressure of business scale, which creates both the unavoidable need and the resources for innovation. Ultimately, this study concludes that successful technology adoption in this sector depends less on the technology itself and more on addressing the deep-seated psychological, competency-based, and structural barriers faced by its decision-makers.

KEYWORDS

Resistance to Innovation; Technology Adoption; Inventory Management Systems; Restaurant Industry; SMEs; Portugal; Grounded Theory

Sustainable Development Goals (SDGs):

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BOH Back-of-the-house. All non-customer-facing operational areas of a restaurant, such as the kitchen and storage, are where processes like inventory management take place.

CGT Constructivist Grounded Theory

FOH All customer-facing areas and operations in a restaurant, such as the dining room and bar, where direct guest interaction occurs.

ICT Information and Communication Technology.

IMS Inventory management system. A software-based system designed to track inventory levels, orders, sales, and deliveries to automate and control stock management.

1. INTRODUCTION

Portugal holds the leading position within the European Union regarding the share of value added created by the food and beverage service sector. In 2019, this indicator in Portugal stood at 10.6% of the total non-financial services sector, considerably exceeding the EU average of 6.2% (Key Figures on European Business – 2024 Edition - Key Figures - Eurostat, 2024).

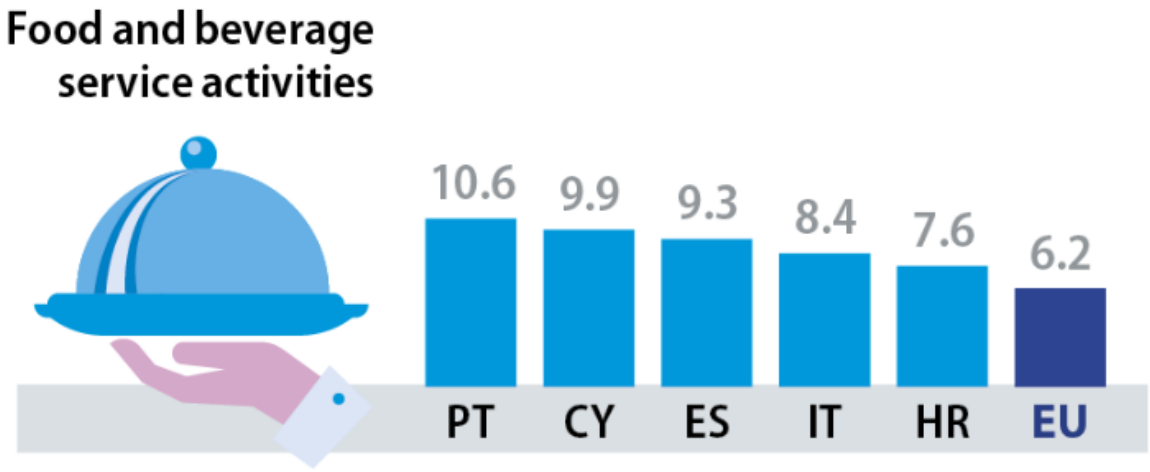

Figure 1. Value added specialisation – top five EU Member States in Food and beverage service activities

This statistical leadership is not an anomaly but reflects the sector's recognized strategic importance for the country's overall economic health. As academic research confirms, the hospitality industry is a cornerstone of the Portuguese economy, representing a significant percentage of its GDP and acting as a primary driver of employment, particularly in tourism-dependent regions (Costa & Mota, 2021).

The accommodation and food-service sector (NACE I) is one of the structural pillars of Portugal's economy: in 2023 it employed about 445,000 people, the fourth-largest workforce of all 17 CAE sections and roughly 9% of all staff in non-financial enterprises(*Pessoal Ao Serviço Nas Empresas Por Ramo de Atividade | PORDATA*, 2025) It is important to note that while this statistical category encompasses both accommodation and food service activities, the latter represents the dominant share in terms of number of enterprises and personnel, and is the specific focus of this research. However, its real labour footprint is probably even larger, because labour-inspection campaigns single out hotels and restaurants as one of the activities with the highest incidence of undeclared and seasonal work, suggesting that a non-negligible share of employment remains off the official books (*Factsheet 1 on Undeclared Work-PORTUGAL*, 2023)

This observation aligns with academic findings regarding the sector; research points to the practice of earnings management among Portuguese hospitality firms, often for purposes like tax reduction (Costa & Mota, 2021). The prevalence of family-run enterprises, whose specific dynamics can foster a culture of "business secrets" and informal operations, may further explain the persistence of such off-the-books activities (Marques & Couto, 2020).

In 2023, the accommodation-and-food-service industry (NACE I) generated roughly €13 billion in gross value added—about 4.4 % of Portugal's GDP. Once the predominantly state-funded branches (public administration, education, health, and social work) are removed from the ranking, this share places hospitality fifth among all private-market sectors, surpassed only by manufacturing, wholesale & retail trade, real-estate activities, and construction. By contrast, Eurostat's structural-business statistics show that the same NACE I section accounts for just ≈ 2.8% of business-economy GVA across the EU-27, making Portugal's economy almost 1.5 times more dependent on hospitality than the European average (Eurostat, 2024; *Valor Acrescentado Bruto (VAB) Por Ramo de Atividade | PORDATA*, 2024)

Therefore, the hospitality sector is one of the key pillars of the Portuguese economy, with a structural importance almost 1.5 times greater than the European average, underscoring its particular reliance on this industry.

Despite this structural importance to the Portuguese economy, however, the sector is currently facing significant macroeconomic challenges that threaten its stability.

Nevertheless, despite an apparent post-pandemic recovery in nominal sales (Figure 2), the Portuguese restaurant market has not truly returned to pre-crisis levels and is operating under extreme economic pressure. While turnover in euros by 2024 has approached 2019 figures, this growth has been effectively nullified by unprecedented food price inflation. As shown by the Harmonized Index of Consumer Prices (Figure 3), the cost of food and non-alcoholic beverages—a restaurant's primary expenditure—has experienced a sharp and sustained increase since early 2022. Therefore, even as revenue recovers, the sector's profitability is severely eroded by soaring input costs. This dual pressure of stagnating real-term income and cost inflation makes effective food cost control not merely an element of optimization, but a critical factor for survival for businesses in the industry.

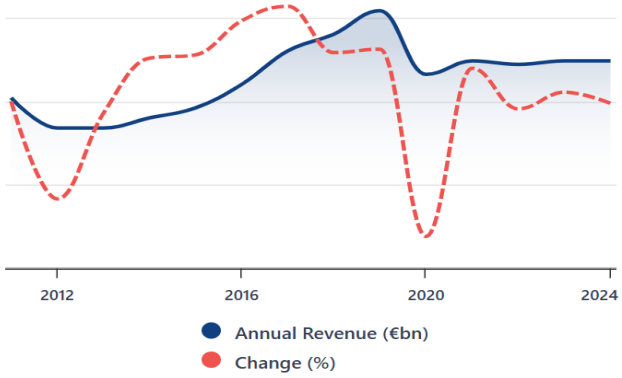

Figure 2. Annual Sales and Percentage Change in the Portuguese Restaurant and Takeaway Market (2012–2024)

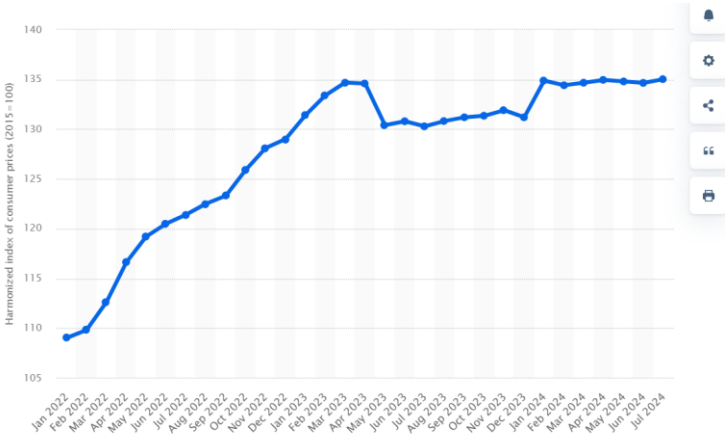

Figure 3. Harmonized Index of Consumer Prices (HICP) of food and non-alcoholic beverages in Portugal from January 2022 to July 2024

Under the current EU policy framework, restaurant operators must treat rigorous food-cost monitoring as a compliance imperative, not just a margin tool. The Farm-to-Fork Strategy sets an overall objective to halve retail and consumer food waste by 2030, while the July 2023 proposal to amend the Waste Framework Directive (2008/98/EC) would make this legally binding by obliging each Member State to cut food losses 30 % at retail, restaurant and catering level (per-capita, versus the 2021-2023 baseline) and 10 % in processing/manufacturing. To verify progress, restaurants must measure discard volumes according to the common EU methodology laid down in Commission Delegated Decision (EU) 2019/1597. Meeting these targets, therefore, demands tight control over purchasing, portioning, and inventory—the very levers that also reduce food cost—so investing in digital waste-tracking and menu-engineering systems simultaneously safeguards profitability and the operation's sustainability license. Failure to document reductions could expose businesses to national enforcement

action as 2030 draws closer (Delegated Decision - 2019/1597 - EN - EUR-Lex, n.d.; EUR-Lex - 52023PC0420 - EN - EUR-Lex, *EUR-Lex - 52020DC0381 - EN - EUR-Lex)*.

It is widely recognized in academic and industry literature that the Cost of Goods Sold (COGS), primarily food and beverages, constitutes one of the two largest operating expenses for any restaurant, forming the bulk of its "Prime Cost" alongside labor (Pavesic & Magnant, 2005). The effective control of this critical expense, however, is a notoriously complex and labor-intensive task. This inherent difficulty is driven by a confluence of factors, including the perishable nature of stock, the intricacies of recipe costing, the high risk of waste and theft, and the error-prone nature of manual counting. Controlling these costs with traditional, manual methods is therefore especially difficult owing to the restaurant sector's operational complexity—perishable ingredients, constantly evolving menus, and highly volatile demand—making "pen-and-paper" approaches slow, reactive, and vulnerable to error (Kimes, 2008). Consequently, traditional management methods are often deemed reactive and inefficient, making operational complexity a primary driver for the adoption of computerized systems. Such technologies facilitate a critical shift from mere "counting" to strategic "control" and "management" (Kasavana et al., 1990), while also reducing the cognitive load and potential for error by managers.

As a key economic contributor and major employer in Portugal, the restaurant sector currently faces significant converging pressures. These include severe macroeconomic factors, such as high food cost inflation and a fragile recovery, compounded by regulatory requirements to reduce food waste. This combination of pressures makes rigorous food cost management a critical necessity for business viability. In this context, the inherent complexity and high cost of error render traditional manual methods insufficient, making the adoption of automated Inventory Management Systems essential for ensuring operational control and profitability.

Given this high-pressure environment, the logical solution for achieving rigorous cost control lies in the adoption of modern Inventory Management Systems (IMS). However, a review of the academic literature reveals a significant research gap.

The existing body of research on digitalization in the restaurant industry has predominantly focused on customer-facing, Front-of-House (FOH) operations such as QR-code menus, online ordering, and delivery platforms. In contrast, critical Back-of-House (BOH) processes, particularly the complex domain of inventory management, have received considerably less scholarly attention.

To understand the underlying causes of this low adoption rate, this research moves beyond purely economic or technical explanations. A substantial body of literature establishes that human factors—such as fear of change and perceived ease of use—are often the most significant barriers to innovation adoption (Ford et al., 2008; Oreg, 2003; Piderit, 2000). This theoretical perspective is strongly supported by the author's extensive professional observation within the Portuguese restaurant industry, where such 'mental barriers' consistently emerged

as the most formidable obstacles to technological change. Therefore, this study hypothesizes that these psychological aspects of resistance are a primary, yet unexamined, reason for the slow uptake of Inventory Management Systems in this specific context.

Indeed, the limited empirical research available confirms this focus. Studies show that psychological factors—such as status-quo bias, fear of complexity, and low managerial self-efficacy—are often just as decisive as budget or technical issues in deterring restaurants from adopting inventory-management systems (Kimes, 2008; Management et al., 2020; Nugawela & Sedera, 2022; Severt et al., 2010).

The primary aim of this thesis is to develop an explanatory model of the key psychological and structural barriers that hinder the adoption of Inventory Management Systems (IMS) by Small and Medium-Sized Enterprises (SMEs) in the Portuguese restaurant industry.

To achieve this aim, the study will address the following central research questions:

- RQ1: What are the primary factors that influence the decision-making process of Portuguese restaurant owners and managers regarding the adoption of IMS?
- RQ2: What specific psychological barriers (e.g., attitudes, perceptions, biases) constitute resistance to IMS adoption in this context?
- RQ3: How do the current macroeconomic conditions and specific characteristics of the Portuguese restaurant industry shape managers' perceptions of and attitudes toward IMS?

To achieve these objectives, the dissertation will first conduct a comprehensive literature review (Chapter 2), focusing on the theoretical foundations and key frameworks relevant to IT adoption in the restaurant sector. Building on these insights, Chapter 3 will present a qualitative study aimed at identifying critical factors influencing the adoption of inventory management systems and will propose a conceptual model to guide future research. In Chapter 4, the study will outline practical recommendations to address current challenges observed in the field. Finally, Chapter 5 will conclude the dissertation by summarizing key findings, acknowledging its limitations, and suggesting potential directions for future academic inquiry.

2. LITERATURE REVIEW

This chapter reviews the relevant academic literature to establish the theoretical framework for the present study. It will first examine the foundational models concerning technology adoption and resistance to change. Subsequently, the focus will shift to an analysis of empirical studies on digitalization within the hospitality sector. By synthesizing this body of work, the chapter aims to precisely identify the research gap that this dissertation seeks to address.

To understand the complex reasons for technology adoption, this literature review examines key theories from organizational studies and psychology. These theories can be grouped into three main levels of analysis: the organizational context, the general psychology of resistance to change, and specific perceptions of the technology itself.

At the organizational level, frameworks such as the Technology-Organization-Environment (TOE) model (Tornatzky & Fleischer, 1990) and the Diffusion of Innovations Theory (Rogers, 2003) provide an essential macro-level perspective. They identify critical determinants of adoption, including a firm's resources, the competitive landscape, and structural inertia. However, while invaluable for analyzing the context in which a decision is made, these models offer limited insight into the subjective cognitions and decision-making processes of the individual managers who ultimately approve or reject an innovation.

A second, complementary stream of literature from organizational psychology addresses this 'human element' through models of resistance to change (Kotter, 1995; Oreg, 2003). These theories posit that resistance is a natural human reaction to disruption, often stemming from factors such as a fear of the unknown, a perceived threat to professional autonomy or status, or an unwillingness to abandon established routines. This perspective thus shifts the analytical focus from organizational readiness to an individual's predisposition against change.

Building specifically on the interaction between an individual and a technology, the Technology Acceptance Model (TAM) offers a more granular lens (Davis, 1989). TAM has robustly established that two key individual perceptions are paramount: Perceived Usefulness (the degree to which one believes a system will enhance their performance) and Perceived Ease of Use (the degree to which one believes using a system will be free of effort). This model underscores that even a beneficial technology may be rejected if it is perceived by the user as too difficult to master or not genuinely useful.

Therefore, this thesis argues that a complete explanation requires an integrative approach. This stance is supported by extensive research that calls for integrating macro-level frameworks like TOE with micro-level models such as TAM (Oliveira & Martins, 2011). Crucially, to fully capture the human element, these integrative approaches often must look beyond the core variables of TAM. They frequently incorporate deeper psychological constructs, such as an individual's inherent disposition to resist change, which can be a decisive factor in technology adoption. While the TOE framework sets the stage, it is the synthesis of Change Resistance

theories and the perceptual factors of TAM that provides the necessary theoretical lens to investigate the nuanced, individual-level barriers to IMS adoption. It is this crucial human dimension that this thesis aims to explore within the Portuguese restaurant sector.

Empirical Studies on Technology Adoption

General Barriers to Innovation in Small and Medium-Sized Enterprises (SMEs)

The challenges of technology adoption are particularly pronounced for Small and Medium-Sized Enterprises (SMEs), which operate under a different set of constraints than larger corporations. The literature identifies a complex interplay of financial, structural, and human factors that hinder innovation in this segment.

A primary set of barriers relates to internal resources and capabilities. An extensive OECD report (2004) identifies high investment costs for ICT equipment and software, a shortage of qualified personnel, and limited ICT skills among existing staff as significant and widespread obstacles. Recent conceptual analyses reinforce that these challenges remain central to digital transformation, identifying a lack of financial resources, insufficient digital skills and knowledge, and resistance to change as primary barriers for SMEs (Bamidele Micheal Omowole et al., 2024). This finding is consistent with research indicating that the perceived cost-benefit analysis of technology adoption is often unfavorable for small businesses, especially given the rapid pace of obsolescence (Nkosana & Skinner, 2016).

Beyond resource constraints, perceptual and strategic factors are also critical. Many SME owners perceive digital solutions as irrelevant to their specific business models, a phenomenon described as a 'lack of business suitability' (ICT, E-BUSINESS AND SMEs, 2004). Marija et al. (2021) argue that this is reinforced by psychological factors, such as a prevailing skepticism among owners regarding the actual effectiveness of modern digital tools. This strategic hesitance is often compounded by an intense focus on managing day-to-day operations, which leaves little room for long-term planning.

Ultimately, the characteristics of the entrepreneur or manager play a decisive role. Studies by Martín-Martín et al. (2022) demonstrate a strong correlation between the educational level of the decision-maker and the firm's level of digitalization. This suggests that managers with higher education may be better equipped or more motivated to navigate the aforementioned barriers, highlighting the critical influence of the human element even at this general level of analysis.

Specific Drivers and Challenges in the Restaurant Industry

While the restaurant industry shares many of the innovation barriers common to all SMEs, it is also shaped by a unique set of internal and external pressures. The primary drivers for technology adoption are often strategic and operational. Research identifies the pursuit of greater business efficiency, enhancement of guest service quality, increased employee productivity,

and overall cost reduction as the most influential motivators for implementing new technologies (Cavusoglu, 2019).

On the other hand, restaurant operators face a number of persistent challenges that hinder these initiatives. Key obstacles include limited financial and human resources, cultural resistance to change among staff accustomed to traditional workflows, and significant knowledge gaps in technological literacy (Weerasinghe & Nirere, 2022). The challenge of implementing rigorous inventory control, in particular, appears to be a systemic problem. This is starkly illustrated by data from the U.S. market, arguably the world's most professionalized, where a 2023 industry report found that a striking 43% of small businesses do not track their inventory at all (25+ Essential Inventory Management Statistics [2023], 2023).

These industry-wide challenges are further nuanced by internal organizational factors. For instance, some research suggests that chain restaurants demonstrate a stronger inclination toward adopting innovations compared to independent establishments, reflecting a more proactive innovation mindset and greater access to resources (Oronsky & Chathoth, 2007) However, this is not always straightforward, as contrasting evidence from Portugal indicates that medium-sized enterprises may sometimes exhibit lower levels of innovation than their smaller counterparts (Almeida, 2021). Ultimately, leadership plays a critical role in championing innovation, although successful implementation does not always guarantee successful outcomes, indicating that leadership alone is insufficient without ongoing strategic management (Gadotti dos Anjos & Roslindo Kuhn, 2024).

THE HUMAN DIMENSION: PSYCHOLOGICAL FACTORS IN RESTAURANT TECHNOLOGY ADOPTION

Beyond organizational constraints, the literature indicates that the decision by a restaurant owner to adopt technology is deeply shaped by psychological factors. This choice is not purely rational but is influenced by a complex interplay of attitudes, subjective norms, and perceived behavioral control (Buurman et al., 2024). Foundational determinants at this level include the personal innovativeness of the restaurateur, their openness to change within a traditionally high-pressure environment, and whether they perceive an innovation as essential for their business's survival and growth.

This psychological lens is particularly critical when examining how operators perceive the technology itself. The Technology Acceptance Model (TAM), for instance, highlights two factors: usefulness and ease of use. In the fast-paced restaurant environment, a study of Point-of-Sale (POS) systems found that staff and managers prioritized Perceived Usefulness over Perceived Ease of Use (Ham et al., 2008). However, this logic appears to shift for Back-of-House systems. When it comes to Inventory Management Systems (IMS), the perceived complexity of the software often overwhelms restaurant staff, which directly diminishes its perceived usefulness and creates a powerful deterrent to adoption (Ishan et al., 2022)

These perceptions lead to a significant gap between awareness and action regarding IMS in the restaurant industry. Despite recognizing the importance of stock control, many

establishments continue to underutilize these systems (Dadić Helga Maškarin Ribarić Borna Vlahov, 2020). This is often rooted in the psychology of the owners themselves; many experienced restaurateurs, accustomed to decades of hands-on management, exhibit a strong reliance on traditional, manual methods, reflecting a powerful status-quo bias (Severt et al., 2010). Consequently, an IMS is often psychologically framed as a "non-essential" expense rather than a critical investment, a perception solidified by concerns over the time required for implementation and training in an already overstretched restaurant operation.

THE PORTUGUESE CONTEXT: A CASE OF LOW ADOPTION AND TRADITIONALISM

The general and industry-specific challenges outlined previously are particularly evident in the Portuguese context, which is characterized by a significant gap in both awareness and implementation of modern BOH systems. While comprehensive national data on IMS adoption is lacking, available research suggests that adoption rates among Portuguese restaurants remain low (F. Campos et al., 2023). This is compounded by a general lack of knowledge within the broader hospitality sector; a study by Maia et al. (2023) found that awareness of basic inventory and revenue management approaches remains low even among professionally managed small and medium-sized hotels. This systemic competency deficit is echoed in broader research on Portuguese service SMEs, which points to limited access to external knowledge and a lack of qualified personnel as significant barriers to innovation (M. M. Campos et al., 2023). The problem appears deeply rooted in the sector, with studies indicating that even leading hotels often operate with "rudimentary" knowledge management practices (Mota Veiga et al., 2023). This gap may be perpetuated by an ineffective transfer of knowledge between academia and industry, which companies often perceive as being "insufficient and detached from practical realities" (Lopes et al., 2021).

This low awareness is coupled with a strong reliance on outdated operational practices. Many Portuguese restaurants continue to calculate food costs using traditional batching methods rather than leveraging modern digital systems, thereby missing critical opportunities for real-time control and data-driven forecasting (F. Campos et al., 2023). The limited empirical research that exists on barriers in Portugal points primarily to resource-based constraints. A comparative study found that Portuguese restaurant owners most frequently identified limited financial resources, a shortage of qualified personnel, and infrastructural issues as primary obstacles to technology adoption (Arendt, 2008).

Consequently, while some structural and financial barriers have been identified, the deeper reasons for the persistence of traditional methods remain underexplored. The existing literature on business digitalization in Portugal has primarily focused on Front-Of-The-House (FOH) technologies, leaving BOH processes like inventory management under-researched. Therefore, a clear and significant gap exists in understanding the specific psychological factors that underpin the low adoption of IMS among Portuguese restaurant SMEs.

In summary, this chapter has built a comprehensive foundation for the study by reviewing key theoretical and empirical literature. The analysis began with broad organizational frameworks, such as the TOE model and Diffusion of Innovations theory, concluding that while they provide essential context, they offer limited insight into the individual decision-making process. Consequently, a more focused theoretical framework for this thesis was established, grounded in psychological models of Resistance to Change and the Technology Acceptance Model (TAM), which highlight the critical role of individual perceptions and attitudes. The subsequent review of empirical literature confirmed that barriers to Back-of-House technology adoption are significant and that the Portuguese context, in particular, is characterized by low awareness and a reliance on traditional methods.

By synthesizing these findings, a clear and compelling research gap emerges: there is a scarcity of research that systematically applies a psychological framework to understand the specific barriers to the adoption of Inventory Management Systems (IMS) within the unique context of Portuguese restaurant SMEs. While existing studies point to financial or knowledge-based barriers in Portugal, the deep-seated perceptual and cognitive reasons for the low adoption rate of these critical systems remain largely unexplored. This thesis is designed to address this specific gap.

3. METHODOLOGY

This chapter outlines the methodology used to answer the central research question regarding the psychological barriers to Inventory Management System (IMS) adoption among Portuguese restaurant SMEs. Given the exploratory nature of this question, a qualitative approach was chosen to allow for an in-depth exploration of the participants' subjective experiences, perceptions, and motivations.

Specifically, this thesis employs a Constructivist Grounded Theory (CGT) approach, as articulated by Charmaz (2014). This methodology was selected because its primary goal is to generate a new, context-specific theory 'grounded' in the data itself. The constructivist stance is particularly appropriate for this study, as it leverages the researcher's extensive professional experience as an 'insider' to achieve a deeper and more nuanced interpretation of the participants' perspectives. Given that the central research questions concern the subjective perceptions and socially constructed realities of restaurant managers, a CGT approach was chosen. The epistemological fit of this methodology with the research problem is critical. CGT, with its foundation in relativism and the recognition of multiple subjective truths, allows for a valid and nuanced exploration of psychological barriers, an objective that a purely objectivist or post-positivist stance could not achieve (Mills et al., 2006). This approach acknowledges that the researcher and participant co-construct reality, making it ideally suited for this study's exploratory nature.

This chapter will now detail the specific procedures for data collection and analysis that were followed in line with this approach.

3.1. DATA COLLECTION

The primary data for this study was collected through in-depth, semi-structured interviews designed to explore the subjective experiences of restaurant owners and managers in Portugal. A non-probability, purposive sampling strategy was employed, utilizing multiple channels to reach this hard-to-access population. The recruitment process proved exceptionally challenging, underscoring the topic's nature as a 'blind spot' within the industry. Direct outreach to 140 relevant professionals on LinkedIn yielded 19 initial replies (a 13.6% response rate), which ultimately converted into nine completed interviews (a final conversion rate of 6.4%). This was supplemented by three interviews secured from the researcher's professional network and one interview obtained from over 36 in-person 'door-to-door' visits.

The final sample consists of N=13 participants. A detailed, anonymized overview of the participants is provided in Table 1.

Table 1. Overview of participants

Participant ID	Role	Type of Establishment	Years in Industry	Nationality	Language
P1	Operational Director	Restaurant Chain	24	Portugal	English
P2	FB Director	Restaurant	14	Portugal	English
P3	Owner	Restaurant market startup	20+	Portugal	English
P4	CEO	Hotel group	27	Portugal	English
P5	Manager	Restaurant	10+	Kazakhstan	Russian
P6	FB Manager	Restaurant Chain	9	Portugal	English
P7	Consultant/Manager	Restaurant group	27	Portugal	English
P8	Commercial Director	Restaurant Chain	17	Portugal	English
P9	Co-founder	Delivery chain	12	Portugal	English
P10	Owner	2 restaurants	20+	Portugal	English
P11	Co-founder/Manager	2 restaurants	12	Russia	Russian
P12	CEO, COO	Delivery chain	10+	Portugal	English
P13	Consultant/Owner	Restaurant group	18	Portugal	English

Table 1. Respondents

Data collection was concluded upon reaching theoretical saturation, the point at which new interviews ceased to generate new core insights. The interviews were conducted between late March and the end of April 2025. Eleven interviews were conducted in English, while the remaining two were held in Russian, the native language of both the interviewer and the participants, to ensure maximum clarity and depth of expression. The initial translation of these

Russian transcripts into English was performed using an LLM (GPT), and subsequently proof-read and corrected by the researcher, who is fluent in both languages, to ensure the accuracy and nuances of the original responses were preserved for analysis. All sessions were recorded and transcribed using Fathom AI. The interviews followed a semi-structured protocol designed to operationalize the key constructs from the theoretical framework (see Appendix B for the full interview guide).

3.2. Data Analysis

The analysis of the transcribed interview data followed the iterative process of Constructivist Grounded Theory (Charmaz, 2014), with the goal of developing a conceptual model directly from the participants' narratives. The process began with initial coding, where each transcript was analyzed line-by-line to identify and label discrete actions, concepts, and perspectives related to the adoption of IMS.

Following this, focused coding was employed to synthesize the most significant or frequent initial codes into larger, more robust categories. This stage involved constantly comparing data with data to develop the properties and dimensions of each category. To ensure analytical transparency and rigor, a comprehensive codebook was developed, detailing the final categories, their definitions, and illustrative quotes from the data (see Appendix A). The final stage involved theoretical coding, where the relationships between these categories were analyzed to integrate them into a coherent explanatory model, built around the identified core categories of resistance. This systematic, multi-stage process ensured that the final model presented in this thesis is directly 'grounded' in the lived experiences of the restaurateurs.

3.3. Researcher Positionality

This study was guided by a Constructivist Grounded Theory approach, which explicitly acknowledges the researcher's role in the co-construction of knowledge. It is therefore essential to outline the researcher's positionality and its influence on the research process. The author of this thesis possesses a deep, dual-sided understanding of the research problem, derived from extensive professional experience. This includes seventeen years as a restaurateur, comprising sixteen years in the Russian market and one year as a restaurant owner-operator in Portugal.

Following this operational career, the researcher has spent over a year (one year and three months) in a professional role selling and implementing restaurant software solutions, including IMS, within the Portuguese market. This dual positionality—as both a former end-user with profound operational knowledge and a current technology provider who directly encounters adoption barriers—provided a unique lens for this research. This insider perspective was instrumental in building rapport with participants, understanding industry-specific nuances, and interpreting the data with a high degree of contextual sensitivity. The researcher remained mindful that this deep involvement could introduce bias, and a process of continuous self-reflection was maintained to distinguish personal assumptions from the direct evidence

emerging from the data. At the same time, within the CGT paradigm, this deep insider perspective is not a bias to be mitigated but a fundamental methodological strength. The constructivist approach requires "reciprocity between participants and the researcher in the co-construction of meaning and, ultimately, theory" (Mills et al., 2006). Therefore, the author's extensive professional experience is a vital part of the analytical instrument, not a contaminant. It enables a more profound and contextually sensitive interpretation of the data, allowing for the co-construction of a theory that is genuinely grounded in the lived experiences of both the participants and a researcher who intimately understands their world (Mills et al., 2006).

4. DATA ANALYSIS

This chapter presents the findings derived from the qualitative analysis of thirteen semi-structured interviews with restaurant owners, managers, and consultants in Portugal. Following the principles of Constructivist Grounded Theory (Charmaz, 2014), the data were systematically coded to develop a conceptual model explaining the barriers to IMS adoption. The findings are organized into the four central themes, or core categories, that emerged from the analysis. These are: (1) The Power of Inertia, describing the reliance on traditional management methods; (2) The Scale Factor, which acts as the primary catalyst for considering innovation; (3.3) The Competency Barrier, related to a lack of knowledge and perceived complexity; and (4) The Value-Effort Calculation, which represents the final psychological decision point for restaurateurs. Each theme will be presented sequentially in the following sections to build the emergent model of resistance.

4.1. THE POWER OF INERTIA

The foundational theme emerging from the interviews is a deep-seated reliance on traditional and manual methods for inventory management, which creates a powerful inertia against adopting new technologies. This traditionalism is described by participants as a core cultural trait. As one consultant (P3) with international experience noted, the business environment is characterized by operators being *"very traditional, very suspicious."* This mindset manifests in a long-term adherence to established routines, regardless of their efficiency. For example, one manager (P5) described their establishment's owner as *"traditional and indifferent to managing numbers… Not changing anything for 10 years."* The most commonly cited tools were basic spreadsheets or pen and paper, confirming a strong preference for familiar, manual processes (P7).

This adherence to traditionalism (Category A-03) is underpinned by a short-term, non-ROI-focused business philosophy (Category A-05). Instead of evaluating potential innovations based on long-term gains, decisions are heavily influenced by the desire to minimize immediate effort and complication. This "back-of-the-envelope" approach prioritizes simplicity over optimization. As one manager (P6) described his superior's attitude towards a more detailed inventory process: *"My boss arrives and asks, why are they doing this? No need to do that. Just put it on the shelf, count it, and that's fine."* This philosophy leads to business practices that one participant (P11) described as chaotic, with *"no cost calculation… no standardized recipes… and chaotic purchases."*

Together, these two forces—ingrained, culturally-reinforced habits and a short-term, non-analytical mindset—create a formidable status quo bias. This initial barrier of inertia is the first and often most significant hurdle that must be overcome before any serious consideration of an IMS can even begin.

4.2. The Competency Barrier

The analysis shows that even when a restaurateur contemplates moving beyond traditional methods, they immediately encounter a formidable competency barrier. This barrier is composed of both a perceived complexity of the digital world and a tangible lack of specific knowledge about available solutions. This sentiment was eloquently summarized by one participant (P11), who, reflecting on the industry, stated: *"I think that we all have a problem, because… a big role… is a low level of awareness, low level of knowledge… some kind of conservatism."*

This lack of awareness often manifests as "analysis paralysis," where owners do not even know where to begin their search for a solution. As one experienced manager (P7) admitted, *"I don't have this technical knowledge… I just don't know what kind of solutions I can use."* This knowledge gap extends to their staff, who are often perceived as not having the necessary skills to operate complex systems, making the prospect of implementation seem even more daunting.

This, in turn, fuels a perception of technology as inherently complex and not designed for the typical restaurateur. The desire for "simpler, more user-friendly" solutions was a recurring point (P9), implying that the current perception of IMS is the opposite. This transforms the technology from a potential tool into a source of anxiety, effectively halting the decision-making process long before a rational evaluation of its value can occur.

4.3. The Value-Effort Calculation

Even if the initial barriers of inertia and competency are overcome, the analysis reveals that restaurateurs engage in a final, critical cost-benefit analysis that often halts the adoption process. This is not a formal financial projection but an intuitive "threshold logic" (Category A-04), where the perceived effort of implementing an IMS is weighed against its perceived value.

The 'effort' side of this calculation is consistently seen as immense and multifaceted. Participants described it not just in terms of financial cost, but as a significant investment of time, energy, and human resources. The data entry process alone was cited as a major hurdle. As one consultant (P12) noted, the need to manage *"stock entries"* and *"prep recipes"* makes the setup process *"a challenge."* This is compounded by the time required to train staff and the ongoing labor of conducting regular stocktakes, which are described as *"labor-intensive."* For many busy owner-operators, who are already feeling *"over occupied"* (P11), the prospect of adding this complex project to their workload makes the effort seem prohibitively high.

In contrast, the 'value' side of the equation is often perceived as abstract, distant, or insufficient. Several participants expressed doubts about the tangible returns of an IMS, framing it as a non-essential tool rather than a critical system for profitability. One owner (P9) directly stated that they see IMS *"as not giving direct return."* Another participant (P4), when asked about technological priorities, focused on sales and energy efficiency, dismissing inventory

management as merely *"nice to have."* This perception is heavily influenced by the short-term orientation discussed previously; the immediate and certain 'pain' of the effort outweighs the uncertain and distant 'gain' of potential savings. As a result, the outcome of this value-effort calculation is frequently negative, leading to a rationalized decision to reject the innovation and maintain the status quo.

4.4. The Tipping Point: Structural Pressure as the Sole Catalyst

The analysis reveals that the formidable set of barriers described previously—inertia, competency gaps, and a negative value-effort calculation—is rarely overcome by proactive desire alone. Instead, the findings consistently point to structural pressure, primarily from an increase in business scale, as the decisive catalyst that compels IMS adoption (Category A-01).

The need for a professional IMS becomes acute only when an operation grows to a scale where traditional, manual methods physically fail. This "tipping point" was explicitly identified by several participants. As one F&B Manager from a multi-unit brand (P2) stated, the necessity became unavoidable once the company grew: *"We have a mother company and three different brands... We use an ERP... With eight restaurants, we started to need this."* This indicates that adoption is not a strategic, forward-thinking choice, but a reactive measure forced by operational complexity that can no longer be ignored. This finding from the interviews—that increased scale acts as a primary driver for innovation—is consistent with broader research on entrepreneurial strategy, which has found a positive relationship between firm size and the level of innovation adopted by small businesses (Marom et al., 2019; Oronsky & Chathoth, 2007).

Crucially, scale acts as a dual force: it not only creates the unavoidable need for innovation but also, for the first time, provides the capacity to execute it. Larger operations possess the financial resources to invest and, more importantly, the human resources to professionalize inventory management. This capability was highlighted by a manager from a large chain (P8) as a key advantage, mentioning the benefit of *"Having a specific department for IM [Inventory Management]."* This contrasts sharply with the reality for smaller operators, where the owner is responsible for all tasks and, as one manager (P10) put it, is left *"dreaming about having one dedicated employee for that."*

Thus, the structural factor of scale acts as the ultimate tipping point. It provides both the non-negotiable imperative and the necessary resources to finally push through the layers of psychological and competency-based resistance, making IMS adoption both necessary and possible.

4.5. Chapter Summary and Conceptual Model

In summary, the findings from this study synthesize into a conceptual model explaining the process of resistance to IMS adoption. The model indicates that the decision is not shaped by

a single factor but by a system of interconnected barriers that create a strong state of non-adoption.

The foundation of this state is a combination of Inertia (Theme 1), characterized by a reliance on traditional methods, and a significant Competency Barrier (Theme 2), defined by a lack of knowledge and perceived technological complexity. These two factors directly contribute to a negative Value-Effort Calculation (Theme 3), where the perceived effort of implementation consistently outweighs the perceived benefits.

This analysis suggests that this state of non-adoption is typically only altered by the influence of Structural Pressure (Theme 4). As businesses increase in scale, the operational inefficiencies of manual systems become more pronounced, creating a clear necessity for an IMS. Simultaneously, this growth provides the financial and human resources required to overcome the previously identified barriers of cost and competency. Thus, the emergent conceptual model can be defined as one of Structurally-Driven Adoption, where innovation occurs less as a proactive, strategic choice and more as a reactive response to the changing structural conditions of the business.

5. DISCUSSION

5.1. THEORETICAL IMPLICATIONS

This section interprets the key findings presented in Chapter 4 by connecting them to the theoretical frameworks and empirical studies reviewed in Chapter 2. The aim is to situate this study's contributions within the broader academic conversation on innovation adoption and resistance.

The first major finding—the dominance of traditional methods and a short-term, non-ROI mindset (Theme 1)—provides strong empirical support for established theories of Resistance to Change (Oreg, 2003) and the concept of Status Quo Bias (Nugawela & Sedera, 2022). The participants' reluctance to abandon familiar routines, even when acknowledging their inefficiency, is a real-world manifestation of the psychological preference for stability and the avoidance of the uncertainty that accompanies innovation.

Furthermore, the findings related to the Competency Barrier (Theme 2) and the Value-Effort Calculation (Theme 3) directly align with the core tenets of the Technology Acceptance Model (TAM) (Davis, 1989). The widespread perception of IMS as overly complex and the low technological self-efficacy expressed by participants powerfully illustrate the "Perceived Ease of Use" dimension of TAM. Simultaneously, the doubt regarding tangible returns and the focus on immediate costs demonstrate a low "Perceived Usefulness." This study contributes by showing how these two perceptions are deeply interconnected in the restaurant context: the high perceived effort required to overcome the competency barrier actively diminishes the perceived value of the system in the minds of restaurateurs.

Finally, the finding that business scale acts as the primary catalyst for adoption (Theme 4) does not contradict the psychological focus of this thesis. Instead, it complements it by confirming the relevance of macro-level models like the Technology-Organization-Environment (TOE) framework. Our emergent "Model of Structurally-Forced Adoption" suggests that while individual psychology creates a high wall of resistance, a significant shift in the Organizational context (i.e., growth in scale and complexity) is often the only force powerful enough to breach it.

5.2. PRACTICAL IMPLICATIONS

The findings of this thesis offer several actionable implications for key stakeholders in the Portuguese restaurant industry.

RESTAURANT OWNERS AND MANAGERS

The research highlights that the primary barriers to adopting value-creating technologies are often internal. The first recommendation is therefore to engage in self-assessment and education. Recognizing that a short-term orientation and a reliance on tradition can hinder long-term profitability is a critical first step. Managers should proactively seek information on

modern management tools, demand simple, intuitive solutions from vendors, and shift from a "cost" mindset to an "investment" mindset.

IMS Providers and Developers

This study's central message for technology providers is that a product-centric approach is likely to fail in this market. Success hinges on strategies that address the identified barriers:

This study's central message for technology providers is that the traditional product-centric approach, focused on complex features, is fundamentally misaligned with the psychological and operational reality of the Portuguese restaurant SME market. To succeed, providers must address the identified barriers by rethinking both their products and their business models.

Firstly, the product itself must be redesigned to overcome the high perceived complexity. Rather than feature-rich legacy systems, the market requires "IMS Lite" solutions with intuitive interfaces focused on core functionalities. This "IMS Lite" strategy directly responds to the 'perceived complexity' and negative 'value-effort calculation' identified in the findings. The demand for simpler, more intuitive solutions is strongly supported by research, which finds that "overly complex" technological applications are often "inadvisable for SMEs due to their cost and complexity" (Schwaeke et al., 2025). Consequently, the practice of "repackaging" feature-rich enterprise systems into more accessible, user-centric versions is a recognized and viable market trend for serving the SME sector. The emergence of AI-driven solutions is particularly promising in this regard. Technologies that allow for voice-based data entry or use machine learning to simplify forecasting can dramatically lower the barrier to entry for non-technical users. This trend towards hyper-specialized, user-friendly tools is exemplified by market entrants like Haddock, which focus on simplifying a narrow set of BOH tasks.

Secondly, the business model must shift from a simple transactional sale to a long-term partnership. The findings suggest that a powerful strategic approach is the "Consulting-First" model. This involves selling operational consulting as the primary service, with software playing an auxiliary role. Instead of selling a tool, the provider sells expertise and partnership, helping the restaurateur to first optimize processes and build trust. The IMS is then introduced not as a complex product, but as an instrument to support the already-established, trusted new workflow. This "Consulting-First" approach is not merely a tactical maneuver but a strategic shift that aligns with established business paradigms. It reflects the core principles of Service-Dominant Logic, which argues that value is not embedded in products but is co-created in the process of their use and through provider-client collaboration (Vargo & Lusch, 2008). By first helping the restaurateur to optimize processes, the provider moves from simply selling a tool to engaging in value co-creation, which is fundamental for building the long-term, trust-based relationships necessary for sustained technology adoption (Prahalad & Ramaswamy, 2004). This model directly addresses the identified barriers of low trust, fear of complexity, and the need for guidance.

PUBLIC POLICY AND INDUSTRY ASSOCIATIONS

The findings suggest that market forces alone may be insufficient to overcome the deep-seated competency and psychological barriers. This has direct implications for public policy, such as the European directive on food waste reduction. To achieve these goals, a proactive role for governmental bodies (like IAPMEI) and industry associations (like AHRESP) is recommended. This could include subsidized educational programs on digital literacy, targeted financial incentives for BOH technology adoption, and the creation of local case studies to demystify IMS and combat the information vacuum.

6. CONCLUSIONS AND FUTURE RESEARCH

This final chapter synthesizes the entire thesis. It begins by summarizing the research journey from the initial problem to the key findings. It then outlines the study's primary contributions, acknowledges its limitations, and, finally, proposes directions for future research.

This thesis set out to explore the psychological barriers hindering the adoption of Inventory Management Systems (IMS) among SMEs in the Portuguese restaurant sector. Grounded in a qualitative, Constructivist Grounded Theory approach, the study analyzed thirteen in-depth interviews with industry professionals. The analysis resulted in the development of a conceptual model, termed the "Model of Structurally-Forced Adoption." This model posits that a baseline state of inertia, supported by traditional methods, is first challenged by a competency barrier. These factors combine to create a negative value-effort calculation. The findings suggest that this strong resistance is typically only overcome by the structural pressure of business scale, which creates both the unavoidable need and the necessary capacity for innovation.

This thesis makes several contributions to both theory and practice.

Theoretically, it applies established psychological frameworks (TAM, Resistance to Change) to the under-researched context of BOH operations in the Portuguese restaurant industry, proposing a new, context-specific model of adoption.

Practically, it offers actionable recommendations for restaurant managers (shifting from a cost to an investment mindset), IMS providers (rethinking product simplicity and business models), and policymakers (developing educational and financial support to achieve sustainability goals).

6.1. Limitations of the Study

It is important to acknowledge the limitations of this research. The primary limitation stems from the language used for data collection. While most of the sample (eleven out of thirteen participants) were Portuguese nationals, the necessity of conducting most interviews in English likely introduced a selection bias. This language requirement may have systematically excluded owners of smaller, more traditional businesses who are often less proficient in English. As a result, the sample may be skewed towards individuals with a higher level of formal education or a more international business outlook. Therefore, the findings of this thesis, while valuable, should be interpreted with this potential bias in mind.

6.2. Directions for Future Research

The findings and limitations of this study highlight several compelling directions for future research.

First, there is a clear need for a follow-up study conducted in Portuguese with native-speaking owners to validate and expand upon the findings of this thesis.

Second, a singular insight regarding tax evasion practices as a deterrent to adopting transparent systems suggests a critical area for future investigation into the informal economic factors affecting technology adoption.

Finally, a quantitative study could be designed to measure the prevalence of the barriers identified in this thesis across a larger, statistically significant sample of Portuguese restaurants.

Ultimately, this thesis demonstrates that for technology to be successfully adopted in the Portuguese restaurant sector, innovation strategies must shift their focus. It is not enough to build better technology; it is essential to first understand and address the deep-seated psychological, competency-based, and structural barriers faced by the managers and owners themselves.

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APPENDIX A
ETHICS COMMITTEE REPORT

This is to certify that

Project No.: DDMKT2025-7-54290

Project Title: Psychological Aspects of Resistance to Innovation: Obstacles to the Implementation of Inventory Management Control Systems in Small and Medium-Sized Enterprises in the Restaurant Industry in Portugal

Principal Researcher: Andrei Semenov

according to the regulations of the Ethics Committee of NOVA IMS and MagIC Research Center this project was considered to meet the requirements of the NOVA IMS Internal Review Board, being considered APPROVED on 7/5/2025.

It is the Principal Researcher's responsibility to ensure that all researchers and stakeholders associated with this project are aware of the conditions of approval and which documents have been approved.

The Principal Researcher is required to notify the Ethics Committee, via amendment or progress report, of

- Any significant change to the project and the reason for that change;
- Any unforeseen events or unexpected developments that merit notification;
- The inability of the Principal Researcher to continue in that role or any other change in research personnel involved in the project.

Lisbon, 7/5/2025

NOVA IMS Ethics Committee

ethicscommittee@novaims.unl.pt

APPENDIX B

INFORMED CONSENT FORM FOR THE INTERVIEWS

INFORMED CONSENT FORM

Research Project:

"Psychological Aspects of Resistance to Innovation: Obstacles to the Implementation of Inventory Management Control Systems in Small and Medium-Sized Enterprises in the Restaurant Industry in Portugal."

Researcher:
Andrei Semenov

NOVA IMS, Data-Based Marketing Master's Program

Email: 20221586@novaims.unl.pt
Phone: +351 911 783 447

Study Description

You are invited to participate in a research study exploring factors influencing the adoption of inventory management control systems in the restaurant industry. This study is part of a master's thesis and involves interviews with restaurant owners and managers in Portugal.

What Participation Involves

A single interview (online or in person) lasting 30-60 minutes.

The conversation will be recorded (with your consent) and later transcribed for analysis.

Data will be used solely in an aggregated form and will not be associated with your name or restaurant.

Confidentiality

All information obtained during the study will remain anonymous.

No personal data will be shared with third parties.

Audio recordings will be deleted upon study completion.

Voluntary Participation

Your participation is completely voluntary. You may withdraw at any time without providing a reason. If you wish to withdraw after the interview, you may do so within 7 days, and your data will be deleted.

Contact for Questions

If you have any questions or need further clarification, you can contact me at 20221586@novaims.unl.pt.

Consent to Participate

I, [Participant's Name], confirm that I have read and understood the study details and consent to participate.

Signature: _____

Date: _____

APPENDIX C
INTERVIEW PLAN

INTERVIEW PLAN

Objective:
To identify key barriers preventing the adoption of inventory management control systems (IMCS) in small and medium-sized restaurants in Portugal.

Interview Format:

Semi-structured interview (flexible format allowing follow-up questions).

Duration: 30-60 minutes.

Possible formats: in-person, Zoom, Google Meet.

Permission for recording will be requested in advance.

Interview Structure

1. Introduction (5 minutes)

Introduction of the researcher and the study objectives.

Explanation of the interview format and confidentiality assurance.

Obtaining consent for recording the conversation.

2. Main Section (40-50 minutes)

A. General Information

Can you tell me about your restaurant (size, type of cuisine, years in business)?

How do you currently manage procurement and inventory?

B. Experience with Inventory Management Control Systems (IMCS)

Do you use any inventory management system? Why or why not?

If yes, how effective is it? What are the main challenges you face with it?

If not, have you considered implementing such a system? What are the main obstacles?

C. Barriers to IMCS Adoption

What are the main challenges preventing you from implementing an IMCS?

Financial constraints?

Lack of time or human resources?

Complexity of technology?

Low awareness?

Employee resistance?

How would you describe the psychological attitude of your employees towards adopting new technologies?

D. Economic and Market Influence

Has economic instability and inflation affected your willingness to invest in technology?

How important is digitalization for your business in a competitive market?

E. Potential Incentives for Adoption

What could encourage you to adopt an inventory management system?

What conditions must be met for successful implementation?

What kind of support would you expect from solution providers?

3. Conclusion (5 minutes)

Thanking the participant for their time.

Asking if they have any additional comments or questions.

Reminding them that they can withdraw their data within the given period.

Additional Notes

If the participant provides detailed insights, follow their story rather than strictly adhering to the question list.

If the participant gives short answers, ask additional probing questions:

"Can you give an example?"

"Why is this important to you?"

"How would you change this?"

This plan ensures structured data collection while allowing flexibility to capture in-depth perspectives from restaurant owners and managers.

APPENDIX D

CODEBOOK

Table 2. Codebook: Open, Axial, and Selective Codes

This codebook summarizes the open, axial, and selective codes developed through the grounded theory analysis of qualitative interview data. Each open code is defined, exemplified by a representative quote, and categorized according to its corresponding axial and core (selective) category. The coding structure reflects the logic of value–effort evaluation, cultural resistance, and structural conditions influencing the adoption of Inventory Management Control Systems (IMS) in Portuguese restaurants.						
Code ID	Open Code	Definition	Example Quote	Category	Mentions	Core Category
O-01	Being a chain	The respondent indicates that the restaurant is part of a multi-unit chain (two or more venues under the same brand), which implies centralized control, standardized procedures, and potentially a higher level of professionalization compared to independent operations.	"We are a chain of restaurants based in Portugal. We've got 10 years so far... we opened two more restaurants in France and Luxembourg."	A-01 Structural Pressure to Professionalize	1,2,4,5,6,8,9	The Scale Factor
O-02	Being a franchise manager	The respondent serves as a director or coordinator, overseeing franchisees. This role involves enforcing inventory-related procedures, assessing operational consistency across units, and often encountering resistance or knowledge gaps among independent franchise operators	"I was franchise and expansion director... I asked, 'Let me see your P&L..' They said, 'We don't have one. We just check the bank account."	A-01 Structural Pressure to Professionalize	1,5,6,8	The Scale Factor
O-03	System complexity	The respondent describes the Inventory Management Control System (IMS) as overly complicated, difficult to navigate, or too time-consuming to use effectively, which hinders adoption or leads to partial use only.	"For the paper and food costs. That's a bit more tricky."	A-02 – Perceived Complexity and Knowledge Gaps	1,2,4,6,7,9,12,13	The Competency Barrier

O-04	Staff struggling with regular inventory management procedures	Staff perceive regular inventory tasks (stock counts, write-offs, data entry) as confusing, exhausting, or frustrating. This often results in poor execution, incomplete data, or resistance to following procedures.	"They think it's really hard to do it. They do it because they have to, but sometimes I feel they don't do it properly."	A-02 – Perceived Complexity and Knowledge Gaps	1,2,4,8,9	The Competency Barrier
O-05	IMS is not a must for a small business	The respondent views Inventory Management Systems (IMSs) as unnecessary for small or independent restaurants. The system is considered relevant only if the business scales or if complexity increases.	"For small restaurants, IMS is not a must… it becomes more relevant with growth."	A-01 Structural Pressure to Professionalize A-02 – Perceived Complexity and Knowledge Gaps	1,2,4,9,10,12	The Scale Factor The Competency Barrier
O-06	Clinging to traditional management practices among Portuguese companies	The respondent notes that many Portuguese restaurants persist in using outdated, informal, or manual management methods, resisting structured, digital systems despite their potential benefits.	"Most restaurants still use the old ways. They do it by hand or just by looking at the fridge. That's how it's always been done."	A-03 – Traditionalism and Change Aversion	1,3,5,6,7,9,11,12	The Power of Inertia
O-07	Preventing frauds	The respondent highlights that one of the key benefits of implementing an inventory management system is its ability to detect or prevent fraud, such as theft, unauthorized consumption, or stock manipulation.	"You can trace if something is missing, maybe someone is using too much, or there's theft… that's why we do weekly inventory."	A-01 – Structural Pressure to Professionalize	1,2,4,6,7	The Scale Factor
O-08	Willing to accept simpler and more user-	The respondent expresses a clear preference for inventory systems that are intuitive, easy to use, and less time-consuming, often contrasting them	"I wish I had one proper software where I could just ask, like, 'Tell me the average	A-04 – Threshold Logic: Value vs. Effort	1,2,4,5,7,9,12	The Value-Effort Calculation

	friendly solutions	with current tools that are perceived as overly complex or fragmented.	price in June,' and it would give me the answer."			
O-09	Feeling a lack of knowledge	The respondent admits to having insufficient knowledge about inventory management principles, software tools, or implementation practices. This lack of knowledge contributes to resistance, avoidance, or delegation of IMCS-related tasks.	"I don't have the knowledge… maybe my son can teach me how to use the system."	A-02 – Perceived Complexity and Knowledge Gaps	1,2,5,7,9, 10,11, 12	The Competency Barrier
O-10	Using Excel	Inventory is managed manually using Excel spreadsheets, often due to a lack of suitable software, habit, or perceived simplicity. This practice limits visibility, accuracy, and automation, and often leads to inconsistent or outdated data.	"We use Excel for all stock counts."	A-02 – Perceived Complexity and Knowledge Gaps A-03 – Traditionalism and Change Aversion	1,2,3,5,6,7,9,10, 11, 12	The Psychological Wall: Perceptions, Fears, and Biases The Power of Inertia
O-11	Feeling the importance of proper IMS	The respondent recognizes that having structured, consistent inventory management is critical for profitability, sustainability, and decision-making, even if their current system is not yet ideal.	"Inventory is where you win or lose money. That's why we monitor it closely."	A-04 – Threshold Logic: Value vs. Effort	1,2,3,4,5,6,7,8, 10, 13	The Value-Effort Calculation
O-12	Lack of proper IMSs	The respondent indicates that suitable inventory management solutions are either unavailable, overly complex, or poorly suited to the	"We don't really have a proper tool for this. What's available is either too complex or doesn't fit our business."	A-02 – Perceived Complexity and Knowledge Gaps	1,2,4,5,7,9, 12	The Competency Barrier

		operational realities of small or medium-sized restaurants.		A-04 – Threshold Logic: Value vs. Effort		The Value-Effort Calculation
O-13	Understanding the differences	The respondent shows a clear awareness of what separates informal inventory practices (e.g., Excel or estimation) from fully structured IMCS — such as real-time tracking, deviation analysis, write-offs, or integration with sales data.	"We now track everything — not just what comes in and out, but how it deviates from the ideal. That's the difference real systems make."	A-04 – Threshold Logic: Value vs. Effort	1,2,4,6,9,8,9,13	The Value-Effort Calculation
O-14	Labor and time-consuming procedures	The respondent reports that inventory-related processes (e.g., stock counts, data entry, adjustments) are extremely time-consuming and require significant manual labor, often creating friction, fatigue, and errors.	"Counting everything takes hours. We have to print out Excel sheets, walk around, write things down, and input them again."	A-04 – Threshold Logic: Value vs. Effort	1,2,4,5,7,8,9,10	The Value-Effort Calculation
O-15	Owners are happy with IMS and profitability	The respondent observes that restaurant owners who implemented inventory management systems express satisfaction and report improved profitability, suggesting that the perceived value of IMCS is validated through lived experience.	"The owners are happy because now they see where the money goes, and they are making more profit than before."	A-04 – Threshold Logic: Value vs. Effort	2,4,6,7,8	The Value-Effort Calculation
O-16	Being better than competitors in IMS	The respondent believes their business is ahead of peers in adopting or executing inventory management practices, seeing this as a source of resilience, efficiency, or strategic advantage.	Compared to most local restaurants, we are far ahead in how we manage inventory. That's why we survive better in hard times."	A-04 – Threshold Logic: Value vs. Effort	1,2,3,4,8,9,13	The Value-Effort Calculation
O-17	Portuguese being conformist	The respondent characterizes Portuguese restaurant operators as culturally conservative and change-averse. This worldview favors stability, routine, and local norms over experimentation or digital adoption.	"They are extremely conformist and traditional. Even when new things would benefit them, they view them with suspicion."	A-03 – Traditionalism and Change Aversion	1,3,5,6,11	The Power of Inertia

O-18	Portuguese are very suspicious	The respondent remarks that Portuguese restaurant owners and managers often distrust new solutions or external advice. This skepticism manifests as resistance to innovation and reluctance to adopt new systems.	"They see everything with a really big lens of suspicion — even things that would help them."	A-03 – Traditionalism and Change Aversion	,	The Power of Inertia
O-19	Not having basic management	The respondent points out that some restaurants lack essential management foundations — such as P&L statements, cost tracking, or standardized processes — instead relying on intuition or cash-in-bank to judge performance.	"They don't even have a P&L. They just see how much is in the bank and say 'we're fine.'"	A-01 – Structural Pressure to Professionalize A-03 – Traditionalism and Change Aversion	1,3,5,6,7,11,12	The Scale Factor The Power of Inertia
0-20	Lacking digital culture in Portugal	The respondent observes that many restaurant operators in Portugal lack the mindset, skills, and exposure needed to adopt digital tools like IMCS. This absence of digital culture contributes to hesitation and long-term underinvestment in technology.	"There's just no digital culture here — people don't know the tools and don't want to know them."	A-03 – Traditionalism and Change Aversion	1,2,3,5,6,7,11	The Power of Inertia
O-21	Having a face-to-face approach in business	The respondent emphasizes that many business interactions in the Portuguese restaurant sector are still handled through personal meetings and long-standing relationships, rather than digital tools or automated systems.	"They still arrange meetings and discuss everything in person — like it's been done for decades."	A-03 – Traditionalism and Change Aversion	1,2,3,5,6,7,11	The Power of Inertia

O-22	Being moneywise and savvy	The respondent describes Portuguese restaurant owners as extremely cost-focused, often prioritizing short-term savings over long-term strategic gains. This frugality can lead to underinvestment in systems like IMCS, especially if the ROI isn't immediate or visible.	"They're extremely moneywise — anything that doesn't bring direct revenue is seen as a waste."	A-05 – Short-Term Orientation and ROI Myopia	3,5,6,11	The Power of Inertia
O-23	Not seeing value in improving	The respondent describes a mindset of complacency or resignation, where current practices are seen as "good enough," and the idea of improvement is met with indifference or skepticism.	"They just don't see why it needs to be improved. If it works, why change it?"	A-05 – Short-Term Orientation and ROI Myopia	3,5,6,7,9,11,12	The Power of Inertia
O-24	Having a procurement system	The respondent reports the existence of a structured procurement workflow for ordering supplies, often including stages like request, approval, delivery confirmation, and integration with finance or inventory.	"We have a procurement system. Everything goes through it — requests, approvals, deliveries."	A-04 – Threshold Logic: Value vs. Effort	3,4,8	The Value-Effort Calculation
0-25	Lacking human resources in smaller enterprises	The respondent explains that small restaurants often lack sufficient personnel to maintain structured inventory practices. Staff are overworked, multitasking, or simply not trained to handle IMCS tasks on top of their regular duties.	"You need someone to update it every day. But in a small team, there's just no one to do it."	A-02 – Perceived Complexity and Knowledge Gaps	4,5,8,10	The Scale Factor
O-26	Having a fear of automatic IMSs	The respondent expresses fear or reluctance toward adopting automated inventory systems. This includes fear of revealing inefficiencies, losing intuitive control, or not understanding how to use the technology.	"They're afraid of these systems — afraid of what they'll show, or that they won't know how to use them."	A-03 – Traditionalism and Change Aversion	4,5,9,11	The Power of Inertia
O-27	Being a big restaurant	The respondent mentions operating a large-scale restaurant (e.g., high seating capacity or guest volume), which naturally increases complexity	"We have 400 seats. That's why we started doing regular inventory and using the system properly."	A-04 – Threshold Logic: Value vs. Effort	1,3,4,5,6,7,11	The Value-Effort Calculation

		and justifies the adoption of structured inventory systems.				
O-28	Not having food costs for every dish	The respondent acknowledges that while overall or average food costs might be monitored, they do not calculate detailed costs for each individual menu item, often due to a lack of tools, knowledge, time, or due to culture.	"I know the average food cost, but not for every dish. It's too much work to calculate all of them."	A-02 – Perceived Complexity and Knowledge Gaps A-04 – Threshold Logic: Value vs. Effort	3,5,6,7,11,12	The Competency Barrier The Value-Effort Calculation
O-30	Company cultures prevent changes and improvements	The respondent indicates that internal company culture — shaped by hierarchy, inertia, or interpersonal dynamics — actively prevents innovation or the adoption of new practices, even when those changes are logical or clearly beneficial.	"It's not that people don't understand. The company culture just doesn't allow change. Everyone's used to doing it the old way."	A-03 – Traditionalism and Change Aversion	3,5,6,7,11	The Power of Inertia
O-31	Having seniority-based privileges	The respondent describes how long-standing employees are informally exempt from new procedures, training, or expectations — often out of respect, fear of conflict, or emotional loyalty.	"They've worked here for ten years, so no one wants to force them to change. It's like, 'don't touch them.'"	A-03 – Traditionalism and Change Aversion	3,5,6,11	The Power of Inertia
O-32	Running a restaurant like a family	The respondent describes the restaurant's internal culture as being deeply personal, emotionally close-knit, and resistant to formal structures	"They're like family. We know each other's kids, we talk all the time — it's hard to	A-03 – Traditionalism and Change Aversion	3,5,6,7,11	The Power of Inertia

		— where staff are treated as family and management decisions are shaped by relational loyalty.	change things in that environment."			
O-33	Not changing anything for 10 years	The respondent refers to businesses that have continued using the same informal or outdated management routines for a decade or more — resisting updates, automation, or restructuring even in the face of inefficiency or growth.	"They've been doing it the same way for 10 years. No one wants to touch anything."	A-03 – Traditionalism and Change Aversion	3,5,6,7,11	The Power of Inertia
O-34	Stealing from the owner	The respondent reports incidents of employee theft, often occurring over long periods due to excessive trust, absence of control systems, and informal management cultures. The theft is typically discovered only after significant losses.	"They were stealing from me every day for ten years, and I didn't know — because I trusted them like family."	A-03 – Traditionalism and Change Aversion	2,5,6,11	The Power of Inertia
0-35	Putting other parts of the business before inventory management	The respondent admits that inventory management is often deprioritized compared to other areas such as customer service, team management, marketing, or daily operations, typically due to time pressure or perceived return on effort.	"First, I need to make sure the guests are happy. I'll think about inventory later."	A-02 – Perceived Complexity and Knowledge Gaps	3,6,7,9,11,12	The Competency Barrier
O-36	Struggling with inserting data	The respondent highlights the difficulty of manually entering data into inventory or procurement systems. Problems stem from poor usability, lack of automation, errors from staff, or time pressure during service.	"We spend too much time just typing everything into the system. People make mistakes or give up halfway."	**A-04** Threshold Logic: Value vs. Effort	1,2,4,5,6,9,11,12, 13	The Value-Effort Calculation
O-37	Feeling more resistance with age	The respondent notes that older employees often show greater resistance to new inventory procedures or technologies. This is typically linked to long-standing habits, fear of making mistakes, or lack of confidence in using digital systems.	"It's harder to explain things to the older team members. They just don't want to change anything."	A-03 – Traditionalism and Change Aversion	5,6	The Power of Inertia

O-38	Being more experienced with FOH	The respondent acknowledges that their core competencies — or those of their team — lie in front-of-house operations (e.g., guest service, ambiance, experience), which results in weaker back-of-house processes such as inventory or cost control.	"We're good at service. That's where our strength is — not numbers or inventory."	A-02 – Perceived Complexity and Knowledge Gaps	7,9,11,12	The Competency Barrier
O-39	Not having enough IT expertise	The respondent acknowledges a personal or organizational lack of technical skills needed to understand, configure, or operate digital systems for inventory management. This limitation contributes to hesitation, dependence on others, or rejection of software tools.	"I'm not a tech-savvy guy. Anything to do with software is already a challenge for me."	A-02 – Perceived Complexity and Knowledge Gaps	2,5,7,9,11,12	The Competency Barrier
O-40	People from other cultures are more specific to IM	The respondent observes that professionals from other national or corporate cultures tend to be more detail-oriented, methodical, and structured in their approach to inventory management than their Portuguese counterparts.	"When I worked with international teams, they were more precise with inventory, always tracking details. It's different here."	A-03 – Traditionalism and Change Aversion	3,6,7,11	The Power of Inertia
O-41	Thinking that tax evasion is a factor number one	The respondent states that widespread tax evasion in the restaurant industry is the primary reason why many businesses avoid implementing inventory and financial management systems, since such systems would require transparency and generate audit trails.	"I think tax evasion is the number one reason why people don't implement proper systems. They just don't want visibility."	A-01 – Structural Pressure to Professionalize A-03 – Traditionalism and Change Aversion	7,13	The Scale Factor

						The Power of Inertia
O-42	Not liking changes and generalizing this	The respondent acknowledges resistance to change but frames it as a natural, universal condition, often to justify the lack of process improvement or digital adoption within the organization.	"No one likes change. It's just how people are — not just here, it's everywhere."	A-03 – Traditionalism and Change Aversion	9	The Power of Inertia
O-43	Scattered data between documents	The respondent reports that essential operational data — such as purchases, inventory counts, and sales — is dispersed across multiple documents and formats (Excel, email, paper, etc.), making analysis, consistency, and efficiency difficult.	"We have too many spreadsheets. It's hard to know where to find the answer — it's all over the place."	A-01 – Structural Pressure to Professionalize A-03 – Traditionalism and Change Aversion	9,11,12	The Scale Factor The Power of Inertia
O-44	Using common sense to order	The respondent explains that ordering decisions are based on intuition, routine checks (e.g., opening the fridge), or staff experience, rather than data analysis or systematic planning.	"We just use common sense. We look at the fridge, we know what's needed — no calculations."	A-03 – Traditionalism and Change Aversion	10	The Power of Inertia

O-45	Having but not using IMS	The respondent acknowledges that an inventory management system is already available in the business, but is not actively used. This is typically due to perceived complexity, lack of training, insufficient time, or absence of clear benefits.	"I have the software, it's there — I just don't use it. It's too complex and I don't have time."	A-02 – Perceived Complexity and Knowledge Gaps	10	The Competency Barrier
O-46	Having no time to learn how to use	The respondent says they are unable to implement or properly use an inventory management system because they lack the time to learn how it works, despite acknowledging its usefulness.	"I have the software, but I never had time to learn it. Maybe next month my son will teach me."	A-02 – Perceived Complexity and Knowledge Gaps	9,10,11	The Competency Barrier
O-47	Lacking support from the supplier	The respondent highlights that vendors or software providers did not offer sufficient help with training, onboarding, or troubleshooting, creating a barrier to adopting or fully using the inventory system.	"The system might be good, but they didn't help us at all. We had no support to set it up or learn it."	A-02 – Perceived Complexity and Knowledge Gaps	10	The Competency Barrier
O-48	Having the same menu as competitors	The respondent reports that local restaurants often replicate one another's menus and pricing, instead of developing differentiated offerings or basing prices on cost analysis. Menu decisions follow social proof or market convention.	"All the restaurants around here serve the same menu. Prices are set by what others charge, not by actual cost."	A-03 – Traditionalism and Change Aversion	10	The Power of Inertia
O-49	Not ready to admit incompetence	The respondent describes how some owners or managers avoid structured management practices (like IMCS) because they fear these systems will expose their lack of knowledge or reveal how little control they actually have over the business.	"He was scared by the numbers themselves. He couldn't admit how little he knew."	A-03 – Traditionalism and Change Aversion	10,11	The Power of Inertia
O-50	Having survival oriented approach	**Definition**: The respondent describes a business mentality focused not on growth, optimization, or long-term planning, but on **day-to-day survival**. Inventory control, cost calculations, or structured	"Nobody was interested in long-term financials… the maximum goal was to survive. If there was some money	A-03 – Traditionalism and Change Aversion	10,11	The Power of Inertia

		decision-making are deprioritized in favor of just staying operational.	left at the end of the month — good."			
O-51	Resisting innovations due to a lack of education	The respondent explains that resistance to inventory systems or other innovations stems from low levels of education or business literacy. Without foundational understanding, restaurant owners or staff often avoid new systems out of fear, confusion, or perceived irrelevance.	"They didn't even have a basic understanding of why this matters. For them, improving quality or implementing software doesn't translate into revenue — they just don't see the logic."	A-03 – Traditionalism and Change Aversion	10,11	The Power of Inertia
O-52	Willing low-effort gains	The respondent notes that many small restaurant owners or managers are motivated by short-term, low-effort results, preferring small wins that require minimal investment of time, money, or learning, rather than strategic improvements or long-term system adoption.	"Desire to learn is not their motivation. […] The desire to work less is definitely there. The desire to spend as little time as possible on calculations is definitely there."	A-03 – Traditionalism and Change Aversion A-04 – Threshold Logic: Value vs. Effort	6,10,11	The Power of Inertia The Value-Effort Calculation
O-54	Having prior business knowledge improves level of IM	The respondent suggests that owners or managers with prior business education or entrepreneurial experience are more likely to adopt structured inventory practices, understand financial control, and value the use of IMCS.	"The second partner, who had a higher level of education, he was engaged in at least some analysis of competitors and calculated the cost very approximately." "The other partner […] absolutely did not see the need to keep any records."	A-02 Perceived Complexity and Knowledge Gaps	11	The Competency Barrier

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