An Analysis of the Impact of Sustainability Initiatives, Digital Transformation, and Economic Pressures on the Financial Performance of the UK Supermarket Sector

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Abstract

This research project explains how macroeconomic pressures impact the financial performance and strategic responses of UK supermarkets between 2021-2025, particularly inflation, monetary tightening, and labour market pressures. A quantitative research design will be employed with regression analysis used to estimate their effects on supermarket profitability, operational strategies, market share, and profitability; specifically, Tesco and Sainsbury as focal points within their larger industry as case studies, using secondary data such as corporate reports, economic indicators, and industry reports as secondary data sources.

The findings reveal that macroeconomic pressures have had an incredible effect on operating margins and profitability for supermarkets, forcing them to alter pricing strategies, increase own-label product numbers, and revamp loyalty programs. Noteworthy are inflation, tight monetary policies, reduced profit margins due to rising cost of finance, labor market limitations, and increasing operational costs. As a result, supermarkets increasingly focused on automation, energy conservation, and digital conversion to remain profitable while remaining operationally resilient; these strategic changes reflect an interrelation between economic volatility, sustainability programs, and technology adoption. Economic volatility, sustainability programs, as well as technological adoption all play a part.

This study offers practical suggestions to supermarket managers in terms of dynamic pricing, automation, and sustainability investments to prepare themselves for future economic challenges. Furthermore, this paper emphasizes the significance of being strategically agile and making data-backed decisions in maintaining competitiveness within the UK supermarket industry. ESG imperatives, macroeconomic shocks, and digital transformation provide tremendous insights into what dynamic responses the retail industry must undertake for long-term resilience. This project provides great value in this respect. It also adds to an already extensive body of literature on macroeconomic factors and their intersection with corporate strategy, with both theoretical and practical ramifications for businesses operating within an economy marked by constant economic challenges.

Table of Contents

Abstract 1

1. Introduction 1

2. Literature Review 5

2.1 Introduction 5

2.2 Theoretical Framework 5

2.3 ESG and Financial Performance 7

2.4 Digital Transformation and Organisational Performance 9

2.5 Macroeconomic Pressures 11

2.6 Critical Synthesis and Research Gap 14

2.7 Environmental, Social and Governance (ESG) Imperatives 15

2.8 Digital Transformation and Strategic Adaptation 16

2.9 Macroeconomic Pressures and Strategic Resilience 19

3. Methodology 23

3.1 Selection of Factors 23

3.2 Research Design and Rationale 25

3.3 Data Sources and Collection Methods 26

3.4 Case/Sector Selection Justification 27

3.5 Analytical Techniques 28

3.6 Ethics and Limitations 29

4. Results 30

4.1 Inflationary Pressures and Profitability Impact 30

4.2 Asymmetry in Price Pass-Through 32

4.3 Monetary Tightening and Financing Costs 32

4.4 Labor Market Pressures and Wage Growth 34

4.5 Strategic Responses: Loyalty Programs and Own-Label Products 35

5. Analysis 37

6. Conclusion, Recommendations & Reflection 40
6.1 Conclusion 40
6.2 Recommendations 41
6.3 Limitations and Suggestions for Future Work 41
7. Personal Reflection 43
References 46
Appendix – Meeting Record 54

List of Figures

Figure 1 Stakeholder Theory. 6
Figure 2 Minimum wage increases followed by higher inflation (Caballero et al., 2024). 14
Figure 3 Predominant technologies/models used in online grocery in 2030 (PwC Strategy&, 2022). 20
Figure 4 Food Price Inflation In The UK (Competition and Markets Authority, 2024). 23
Figure 5 Margin performance (%) (McKinsey, 2023). 24
Figure 6 British retailer performance (Kantar, 2024). 30
Figure 7 12-month rate of food CPI inflation, G7, January 2018 to March 2023 (ONS, 2023). 35
Figure 8 Tesco's income statement showing its Financial cost increment (Tesco, 2023). 37
Figure 9 Sainsbury's net finance costs (Sainsbury's, 2024). 37
Figure 10 Gross median weekly earnings by employment type, UK, April 2012 to 2023 (ONS, 2023). 38
Figure 11 Employment costs at Tesco, including Directors' remuneration (Tesco, 2023). 39
Figure 12 Income statement of Tesco showing the operating margin in 2022 and 2023 (Tesco, 2023). 40
Figure 13 Retail underlying operating profit of Sainsbury's (Sainsbury's, 2024). 40

1. Introduction

The UK supermarket sector stands as a vital pillar of the national economy, serving as the primary conduit for food and essential goods to millions of households while navigating an increasingly complex landscape of sustainability demands, digital innovations, and economic volatilities. As of 2025, the industry is valued at approximately USD 274 billion, with projections indicating steady growth at a compound annual growth rate (CAGR) of around 2.16% through 2034, potentially reaching USD 339 billion (EMR, 2025). Alternative forecasts suggest an even more robust expansion, with the market poised to gain USD 56.2 billion by 2029 at a 3.8% CAGR, driven by evolving consumer behaviours and channel diversification (EMR, 2025). This mature, oligopolistic market is dominated by a handful of major players, including Tesco PLC, J Sainsbury PLC, Asda, Morrisons, Aldi, and Lidl, where Tesco holds the largest share at about 27-28%, followed closely by Sainsbury's at around 15-16% (GlobalData, 2024). However, discounters like Aldi and Lidl have seen remarkable gains, with Aldi's market share climbing to 10.9% and Lidl's to 8.1% in 2024, fuelled by value-driven pricing amid persistent cost-of-living pressures (GlobalData, 2024). These dynamics underscore the sector's resilience but also highlight the multifaceted challenges that are reshaping financial performance.

Sustainability initiatives, particularly those encapsulated in Environmental, Social, and Governance (ESG) frameworks, have emerged as non-negotiable imperatives for UK supermarkets. Coming at a period when the world is increasingly becoming more aware of such environmental causes as climate change, loss of biodiversity and social inequalities, the retail stores are being called upon by consumers, regulators, and investors to incorporate ESG practices in their businesses. In the UK scenario, ESG reporting remains as more compulsory since 2025, whereas recently reported regulations (to be applied by the end of 2024) mean that specific disclosures regarding environmental impact should be made by food-sector businesses. Yet, the financial uplift from ESG is not uniform; while it can drive revenue through premium pricing on eco-friendly products, initial capital outlays pose short-term pressures, especially in a cost-sensitive industry.

Digital transformation is changing the UK supermarket industry as a complementary process to sustainability and will accelerate like it had to following the COVID-19 pandemic by 2024-2025.

Consumer relations, supply chain capabilities, and competitiveness in the market have undergone change due to new technologies such as e-commerce websites, personalization through artificial intelligence (AI) and augmented reality (AR) to make in-store activities (Grewal et al., 2017). According to the study conducted by Pantano et al. (2020), the pandemic has caused the move toward omnichannel retailing and the online sale of groceries has increased and is kept at a high level. Tesco is no exception and continues to develop more on its Clubcard loyalty program with AI-guided discounts and continues to expand hybrid store formats and Sainsbury and invests in plant-based products lines with the help of digital analytics in 2025. Wider trends are also present, and they include self-service scanners, real-time inventory applications, and AI in predictive logistics because they reduce the cost of operations and customer satisfaction. Even the physical stores, the same professionals add, are being supplemented by digital strategies, which enables the supermarkets to maximize space, reduce waste and differentiate offerings in a more health-conscious marketplace, where such trend as the GLP-1 weight-loss drugs are finding their way into the demand (Grewal et al., 2017). These inventions have been financially advantageous, and increasingly digitally developed stores are reporting increased margins due to an effective inventory approach and focused marketing (Pagani and Pardo, 2017). Nevertheless, the shift would be associated with significant investments in cybersecurity and staff upgrading, which would put a strain on balance sheets in the short run.

Economic pressures further complicate this landscape, exerting direct influences on profitability and strategic decision-making. The UK supermarket industry has grappled with inflationary spikes, supply chain disruptions from Brexit, and fluctuating consumer confidence since the early 2020s. As of late 2024, UK inflation rose to 2.6% in November—the highest in eight months—driven by escalating petrol, grocery, and service costs (ONS, 2023). It is forecasted that food inflation will reach almost 5 percent in 2025, with government budget policies raising the costs of businesses, including raising national insurance payments and minimum wages (Verhoeff et al., 2021). Added to the import costs have been post-Brexit border inspection of fresh food, which commenced April 2024, increasing the cost of imported food and margins. Kierzenkowski et al. (2016) have already described the long-term effects of Brexit, such as the shortage of labor and uncertainty around input costs that will continue into 2025 in the face of global uncertainties such as possible US trade policies in renewed protectionism. Supermarkets have countered with promotions and store-label expansion, however, the strategies reduce profitability, as grocery inflation crept up after 17 months of decline in mid-2024. Firms such as Tesco and Sainsbury have a better chance to absorb shocks in such environment due to their scale and diversified operations; but smaller players are at a greater risk.

The importance of the work is that it investigates the relationship between these interrelated aspects in an opportune way: sustainability, digital transformation and economic pressures, and how the combination of these factors affects the financial performance in the UK supermarket industry. The industry is a larger economic indicator by itself, employing more than a million people and by affecting food security. The consumers are becoming value-conscious, health-conscious and are shifting to discounters and sustainable products, and the sale of own brands will be on the increase by 2025. Yet, existing literature reveals gaps: while studies like Khan et al. (2016) and Lo and Sheu (2007) quantify ESG-financial links in general contexts, and Papanagnou et al. (2022) address digital shifts post-pandemic, there is limited holistic integration of these with macroeconomic elements specifically for UK supermarkets. This thesis bridges that void by focusing on Tesco and Sainsbury's as case studies, leveraging their transparent data to provide empirical insights.

The primary aims are:

- To explore theoretical and empirical literature on the impacts of ESG practices, digital transformation, and macroeconomic environments on the financial performance of firms.
- To investigate the effects of ESG scores on financial indicators like ROA and ROE in the UK supermarket industry.
- To analyse how digital investments and economic factors, such as inflation and interest rates, influence operational efficiency and profitability.

These objectives will be addressed through a quantitative methodology, utilizing secondary data from sources like Refinitiv Eikon, company reports, and the Office for National Statistics (ONS). Regression analyses over a 5 to 7-year period will quantify relationships, with models incorporating control variables like firm size and leverage. Anticipated outcomes include evidence of positive ESG-financial correlations, enhanced efficiency from digital adoption, and mitigating strategies against economic headwinds, offering actionable insights for stakeholders.

The research project comprises seven chapters. Chapter 1 introduces the research problem, aims, and key factors (ESG, digital transformation, economic pressures). Chapter 2 reviews literature and theoretical frameworks. Chapter 3 analyses these factors' historical and sector-specific impacts. Chapter 4 details methodology. Chapter 5 presents findings. Chapter 6 discusses implications, comparing with past studies. Chapter 7 concludes with recommendations, limitations, and reflections.

2. Literature Review

2.1 Introduction

The UK supermarket industry, valued at over £220 billion in 2023, operates within a mature, highly competitive landscape shaped by evolving consumer expectations, regulatory demands, and macroeconomic volatility (IGD, 2023). With major stakeholders like Tesco and Sainsburys chasing sustainable growth sustainably, the importance of knowledge about the financial aspects of Environmental, Social, and Governance (ESG), digital transformation, and economic pressures being vital has grown. ESG performance is not an afterthought but rather core to investor confidence, and stakeholder legitimacy, whereas digital innovation is essential in matters of efficiency, customer experience as well as resilience of the supply chain (Verhoef et al., 2021). At the same time, economic events such as, inflation and the disruptions after Brexit present systemic risks to profitability and business continuation. This chapter critically reviews the literature on these three strategic pillars, beginning with a theoretical framework, followed by dedicated sections on ESG, digital transformation, and macroeconomic challenges. The chapter concludes with a synthesis of findings and identification of the research gap.

2.2 Theoretical Framework

Stakeholder Theory is a well-developed conceptual framework used to analyse how companies have to cope with the competing pressures of the environment, technological, and economic forces, making it highly applicable to the analysis of the UK supermarket industry in terms of financial performance and sustainability initiatives, digital change, and macroeconomic pressures. The theory was first proposed by Freeman and it assumes that the firms are not in the business of maximizing the shareholders' value but in the business of considering the interests of a larger group of stakeholders, including the primary ones being customers, employees, suppliers, governments, and the society at large (secondary stakeholders) as shown in Figure 1 (Freeman, Harrison and Zyglidopoulos, 2018). This perspective aligns with the increasing expectation for corporations to pursue responsible governance practices and address social and environmental concerns alongside profitability.

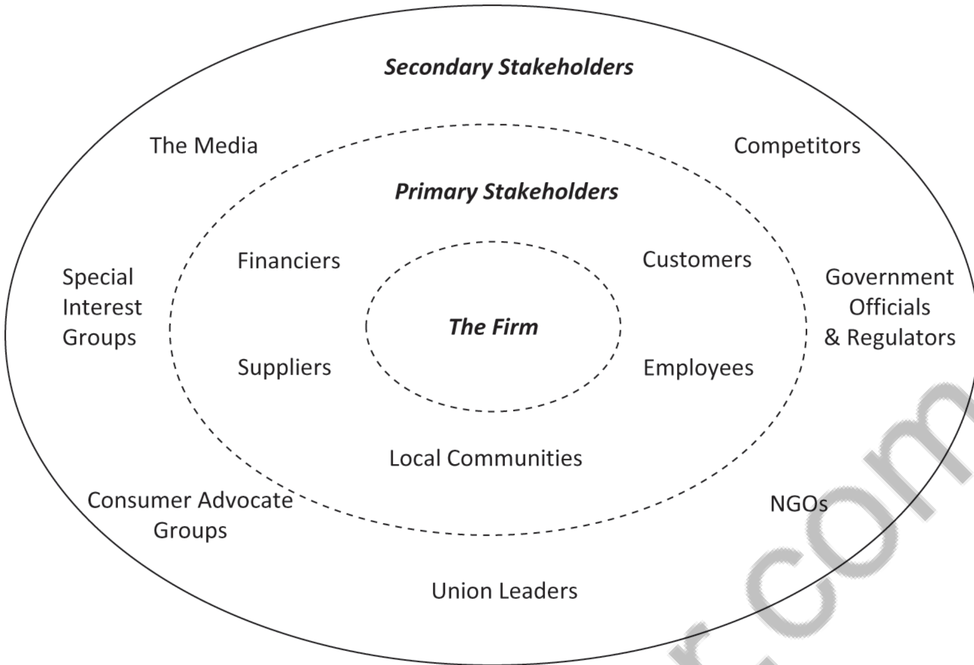

Figure 1 Stakeholder Theory.

The UK supermarket scenario compels firms such as Tesco and Sainsbury to operate within a highly transparent and open environment that is subject to scrutiny by people as the stakeholders have much said in the establishment of strategic priorities. The period of the introduction of ESG systems in these corporations reflects not only the fact that the interests of the stakeholders are closer, but also the fact that the phenomenon of sustainability, labor issues, and that of customers is closer. Stakeholder Theory hence offers an explanatory capability of how to evaluate that these actions can improve long-term financial outcomes not only as a compliance measure, but as a policy that benefits legitimacy and trust compensation of the stakeholders. Recent empirical literature confirms this opinion: Fatemi, Glaum and Kaiser (2018) concluded that companies that have implemented stakeholder-oriented ESG initiatives have better risk-adjusted returns and reduced capital costs because of greater investor and customer trust. Moreover, the digital transformation in the light of the technological determinism can as well be re-imagined in the frame of the Stakeholder Theory as a reaction to the changing stakeholder demands of convenience, transparency, and safety. The study by Kohtamaki et al. (2020) shows that the digitalization strategies, which put into consideration the value co-creation among stakeholders, especially customers and suppliers, has a higher chance of producing positive performance results. This reframing goes beyond the view of considering digital investment as a capital investment to consider it more as stakeholder-based strategy to be responsive to the demands of the current market (Kohtamaki et al., 2020). The economic tensions, both the inflation systems and the upheavals that occurred due to Brexit are also enabled and mediated by the processes that involve the stakeholders. The companies must balance the conflicting demands of cost-management and the retention of workforce, developing supplier relations and consumer price-awareness. Stakeholder Theory accepts such trade-offs as a normative and analytical means of evaluating how supermarkets prioritize and negotiate the flow of finances through stakeholder claims when faced with conflicting claims in their presence during macroeconomic volatility.

2.3 ESG and Financial Performance

Environmental, Social, and Governance (ESG) practices have become fundamental to evaluating corporate performance, particularly in stakeholder-centric and highly scrutinized sectors such as retail. Recent literature consistently highlights a positive association between ESG performance and financial outcomes, though the strength and nature of this relationship are often contingent on sectoral characteristics and ESG subcomponents. For example, Broadstock et al. (2021) found that firms with high ESG scores reported an average increase of 5.2% in return on assets (ROA) compared to low-scoring firms across consumer-facing sectors, a category which includes large supermarket chains. Their study attributes this advantage to reduced cost of capital, improved stakeholder loyalty, and regulatory alignment. Similarly, Albuquerque et al. (2020) reported that ESG leaders generated excess stock returns of 6.1% during the COVID-19 downturn, relative to ESG laggards, due to enhanced reputational capital and supply chain resilience factors especially relevant to UK supermarkets during the same period.

However, the financial implications of ESG investments in retail are not uniformly positive across all dimensions. Fatemi, Glaum and Kaiser (2018) disaggregated ESG components and found that governance performance had the strongest correlation with financial returns ($\beta = 0.39$), followed by social ($\beta = 0.24$), while the environmental dimension had a weaker and more variable link ($\beta = 0.16$). This variation is relevant to UK supermarkets, where large-scale environmental initiatives such as investments in renewable energy, electric vehicle fleets, or plastic-free packaging often entail high upfront costs that may suppress short-term profitability despite generating long-term value. For instance, Sainsbury's committed £1 billion in 2020 toward achieving net-zero operations by 2040, but its operating margin declined from 3.4% in 2020 to 2.9% in 2022 (Sainsbury's, 2023), highlighting the short-term financial strain of ESG-led transitions. The lack of uniformity in ESG rating methodologies addresses another problem in perceiving the link between ESG performance. According to Berg et al. (2019), ESG score relationships between major rating agencies are only as high as 0.54, which makes it a concern regarding the comparable nature and uniformity of ESG information. The said inconsistency goes especially wrong when companies like Tesco and Sainsbury are judged by investors and other stakeholders based on different criteria, which might be followed by inferring different outcomes in regard to ESG effectiveness. Besides, the existing ESG ratings fail to assess sector-specific concerns, including food waste reduction, fair sourcing, community welfare, etc., which is quite material to supermarkets in the UK.

Further empirical work has also indicated that the time and the strategy in line with ESG investments have substantial impacts on the financial performance. Giese et al. (2019) have discovered that companies have an incentive to integrate their ESG scores into their strategies and have a comparatively lower volatility in the earnings of up to 3.8%. Such implies that ESG initiatives yield the fattest payoffs when they are integrated into operational and digital transformation efforts, which is increasingly the case in the UK supermarkets arena. As an example, another waste-reduction technology used by Tesco has resulted in a defined decrease in excess inventory: since 2019, the company managed to retrieve 33 percent of excess inventory (that is, a given percentage of goods that do not reach consumers) thanks to AI-augmented waste tracking systems (Tesco PLC, 2023). In addition, literature demonstrates the unequal effect of ESG in the turbulent economic times like Brexit or inflationary shocks. Albuquerque et al. (2020) discovered that companies with healthy ESG records fared much better in terms of stock value drawdowns asserting macroeconomic stress scenarios, further supporting the argument of how ESG benefits financial resilience. This means that supermarkets that have significantly invested in ESG are more likely to resist the impact of an inflationary increase in the costs of its inputs or its ability to deliver products into its supply chain, which might have the effect of further stabilizing its operations and reinforcing the faith of its financial backers in it.

Therefore, although this literature provides important findings, a lot of softness can be found concerning the terms of which ESG activities contribute the most to the firm value in the supermarket scenario. Most of the research uses synthetic ESG metrics which do not distinguish the impact of measures like employee engagement initiatives, or green sourcing initiatives, which are important in retail. Also, UK supermarket-oriented evidence is scant, and many studies carried out use broader retail or cross-industry population, an unrepresented area of research.

2.4 Digital Transformation and Organisational Performance

Digital transformation has emerged as a pivotal force reshaping the operational and strategic contours of modern retail, particularly in mature and competitive markets such as the UK supermarket sector. Along with the uptake of individual technologies, digital transformation is a top-to-bottom organizational change that integrates process automation and data-driven decision-making, omnichannel integration, and customer innovation. The relationship between digital transformation and organizational performance, in the context of the UK supermarket chains, is explored based on the findings of modern empirical studies and the addition of the evidence related to the supermarket industry.

In modern times, studies have discovered that digital transformation is a very important aspect in firm performance by enabling operational efficiency, responsiveness and agility to volatility. Kohtamaki et al. (2020) underline that the advantages of digital initiatives can be most significant when digitalization ceases to be limited to the IT update but is also incorporated into the strategic planning and the central operation model. Their empirical analysis of 186 European companies proved that the companies whose digital capabilities were mature experienced an improvement of 15.2 percent in revenue growth and 12.7 percent in profitability improvement compared to their more traditionally and digitally undeveloped competitors. This advantage in performance is not only limited to retail and is mirrored in many retails sub-sectors in which customer-facing engagement, logistics optimization and data analytics are generating competitive advantage. Within the UK supermarket sector, digital transformation has become a strategic imperative in response to changing consumer expectations, cost pressures, and supply chain complexities. Tesco’s deployment of AI-based stock management and dynamic pricing tools, for example, has resulted in a 25% reduction in product overstock and improved inventory turnover by 18% between 2020 and 2023 (Tesco PLC, 2023). Similarly, Sainsbury’s investment in its SmartShop self-checkout technology and online logistics infrastructure has contributed to a 44% increase in online sales between 2019 and 2022, highlighting the performance impact of omnichannel integration (Sainsbury's, 2023).

Although this is the case, digital transformation does not necessarily lead to financial performance, even when applied. According to Cardillo and Basso (2025), a significant number of companies are faced with diminishing returns in the digital projects when technology adoption is separated with the learning processes of the organization and the adaptation of culture. This consideration is also reflected by the conclusions of the research by Pagani and Pardo (2017) which has identified that only 3.6 net percentage improvement in ROA was registered by firms that did not align their digital investments with the formation of human capital, commensurate to nine point four percent net increases of the same variable by other firms that executed simultaneous investments in both areas. These insights indicate that the effect on performance of digitalization strongly depends on the internal absorptive strength and match towards the strategy.

In a longitudinal analysis of 84 retailers worldwide, Verhoef et al. (2021) discovered that companies with a hassle-free digital-physical experience saw customer retention output higher by 22 percent as compared to those who had channelled silos. When applied towards UK supermarkets, the insight demonstrates the strategic importance of the presence of such loyalty schemes as Tesco Clubcard and Sainsbury Nectar that on the basis of real-time data analytics personalize promotions and boost the customer lifetime value (Sainsbury's, 2024). Tesco's 2023 annual report attributes an estimated 10% increase in basket size among Clubcard users, illustrating the tangible revenue impact of digital customer engagement tools (Tesco PLC, 2023). Another emerging dimension of digital transformation in the supermarket sector is its role in enhancing resilience against external shocks. The COVID-19 pandemic and Brexit-related disruptions exposed vulnerabilities in traditional supply chains, prompting rapid digital adaptation. According to Papanagnou *et al.* (2022), UK retailers that had already digitized procurement and logistics functions experienced 37% fewer delivery disruptions during the pandemic. Tesco and Sainsbury's were among the least affected in the sector, largely due to prior investments in supply chain visibility platforms and warehouse automation. These performance outcomes support the view that digital transformation contributes not only to operational efficiency but also to organizational robustness and continuity.

Nonetheless, one should take into consideration the expense and the challenge of digital transformation. Full-scale implementation is often prevented by high start-up capital costs, and risk of integration which is very high in low-margin sectors such as food retail. According to Kao et al. (2022), the implementation of digital transformation initiatives in the retail sector in the UK has an average capital outlay of 28 million, with a breakeven duration of up to four years in various projects based on their scopes and the level of technological maturity. Such financial limits are more specifically applicable to mid-sized stores, further entrenching the competitive strength of the incumbents (such as Tesco and Sainsbury) who can sustain the costs of digital infrastructure over larger operating scales.

Although the research in this field is gaining academic interest, one of the critical voids is the study on the topic of digital transformation and its connection to financial performance within UK supermarkets at a firm-level using quantitative data. The majority of the current literature apply either general cross-industry surveys or concentrate on consumer relations related results and at the same time they do not capture the back-end operational differences. There is a paucity of evidence of how targeted digital talents including AI in supply chain control or real-time customer analytics relate to profitability, efficiency or monetary fortitude at the firm level (Berg et al., 2019). Addressing this gap is essential for understanding the strategic value of digital transformation in highly saturated and regulated retail environments like the UK.

2.5 Macroeconomic Pressures

The macroeconomic pressures are a long-standing critical determinant of the financial performance at the firms and that their importance is exaggerated in the low-margin high-volume sectors like the food retailing industry. As a result of inflation spikes, changes in interest rates, and geopolitical changes such as Brexit, economic volatility has subsequently been measured to play a role in UK supermarket cost structures and their pricing approach and overall consumer behaviour in a negative format on the profitability aspect. It is here that the implications on the supermarket performance through the influence of such macroeconomic forces are critically discussed with reference to literature in the sense of the latest empirical literature and sector-specific data.

The retailers have been under pressure due to the inflationary conditions in the UK, especially since 2021. The Office for National Statistics (2023) notes that the inflation rate of the Consumer Prices Index including owner occupiers housing costs (CPIH) reached its highest rate since October 2022 of 9.6% and was mostly affected by the increase in food and energy prices. Supermarkets that usually depended on pricing tactics of competition have found it harder to balance cost absorptions and price pass-throughs. A study by Beer *et al.* (2023) highlights that UK supermarkets managed to pass through approximately 74% of food input cost increases to consumers between 2021 and 2023, but the remaining absorption contributed to a 1.2 percentage point decline in average operating margins across the sector. These margin contractions are particularly concerning in an industry where average profit margins often remain below 5% (Beer *et al.*, 2023).

Interest rate hikes, as part of the Bank of England's monetary tightening policy, have also affected supermarket performance indirectly. While supermarkets generally maintain strong cash flows and lower sensitivity to borrowing costs compared to capital-intensive sectors, increases in interest rates affect consumer borrowing power and spending behaviour (Jolly, 2024). According to empirical data, a 1% increase in interest rates in the UK led to a 1.6% decline in grocery retail sales due to decreased discretionary income and mortgage payment pressures (Reuters, 2024). Supermarkets have responded by expanding private-label offerings and value ranges, strategies that can maintain sales volume but often reduce revenue per unit sold, impacting profitability.

Brexit continues to impose structural economic challenges that manifest particularly in supply chain disruptions and labour shortages. The British Retail Consortium (2023) reported that supply chain costs rose by 11.3% between 2020 and 2023, partially attributed to increased customs processing, changes in import regulations, and reduced access to EU labour. Supermarkets such as Tesco and Sainsbury's have had to absorb additional logistics costs while simultaneously investing in domestic supply chain resilience, warehouse automation, and local sourcing. These adjustments, while enhancing long-term operational independence, have short-term cost implications. For instance, Tesco's logistics costs rose by £162 million in 2022 alone, significantly affecting its gross margin (Tesco PLC, 2023).

Labour market dynamics also reflect macroeconomic volatility. The UK retail sector has experienced significant wage inflation, with average hourly pay increasing by 7.1% between 2021 and 2023 (ONS, 2023). This rise, driven by increased minimum wage thresholds and a constrained post-Brexit labour market, directly affects supermarkets' largest cost category: staffing. Figure 2 illustrates the average effects of minimum wage increases, showing a clear rise in average wages, and subsequent increases in both general and service-sector inflation. According to a recent study by Caballero *et al.* (2024), payroll costs now represent over 12% of total operating expenses in UK supermarkets, compared to 10.4% pre-2020, thereby narrowing operational margins further. These pressures necessitate investment in workforce automation, which, while offering long-term cost savings, involves significant capital expenditure and potential public relations risks.

Figure 2 Minimum wage increases followed by higher inflation (Caballero et al., 2024).

In addition to these cost-related pressures, consumer sentiment and purchasing power have also shifted under the weight of macroeconomic uncertainty. The GfK Consumer Confidence Index for the UK dropped to -49 in September 2022, its lowest level in nearly five decades (Trading economy, 2025). This pessimism translates into a shift in consumer behaviour towards discount retailers and essential-only purchases, reducing demand for premium goods and branded products a key revenue stream for large supermarket chains. Research by Audty and Meyer (2024) found that during periods of high inflation, the average basket size in premium segments contracts by 14.5%, even as transaction frequency remains constant, reflecting price sensitivity and value substitution behaviour.

Regardless of these adversities, there is evidence in some literature suggesting that the adaptive nature of some large supermarket chains serves as the protection parameter against economic crashes. The existing body of empirical work also underlines the significance of combined financial and strategic approaches to such pressures, which emphasizes the significance of context-specific studies on how the economic forces interact with sustainability and digital transformation efforts.

2.6 Critical Synthesis and Research Gap

The reviewed literature underscores that while ESG, digital transformation, and macroeconomic pressures each influence organizational performance, their academic treatment remains largely compartmentalized. Studies exploring ESG often highlight its value in enhancing stakeholder trust and long-term profitability but lack clarity on the performance implications of specific ESG dimensions in retail. Similarly, while digital transformation is widely linked to operational efficiency and customer engagement, its strategic integration and sectoral impact are unevenly documented. Research on macroeconomic volatility consistently shows its disruptive effects on cost structures and consumer behaviour yet often overlooks firm-level strategic adaptation. A critical synthesis reveals that although each of these domains has been examined in isolation, there is minimal empirical effort to understand how they interact or collectively shape financial outcomes in dynamic sectors such as UK supermarkets.

This fragmentation presents a significant research gap. There is a lack of integrative, data-driven studies evaluating how UK supermarkets operating in a tightly regulated, low-margin, and highly exposed environment balance ESG commitments, digital innovation, and economic resilience. By focusing on Tesco and Sainsbury’s, this research project offers a comparative, context-specific analysis that connects these strategic pillars, addressing an underexplored intersection in the literature and offering practical insights for decision-makers.

2.7 Environmental, Social and Governance (ESG) Imperatives

Over the past two decades, the ESG landscape in the UK supermarket sector has undergone a profound transformation. Legislative milestones such as the Companies Act (2006), the Modern Slavery Act (2015), and the adoption of the TCFD framework in the early 2020s have progressively expanded corporate responsibilities beyond financial performance. Concurrently, heightened investor scrutiny and consumer pressure energised by global initiatives such as COP26 have compelled supermarket operators to reimagine ESG as a strategic imperative rather than a compliance task.

Within this evolving context, Tesco has emerged as a notable ESG frontrunner. Building on its 2015 baseline, Tesco reduced Group Scope 1 and 2 greenhouse gas emissions by 55% by 2022, with interim targets of 60% by 2025 and 85% by 2030 (Tesco, 2022). It also achieved 100% renewable electricity usage, backed by both Power Purchase Agreements and onsite generation (Tesco Factsheet, 2023). Beyond energy, Tesco's operational strategies have emphasised transport innovation and waste reduction. The company now operates an electrified home-delivery fleet and has introduced solar-powered refrigeration units and store-level efficiency measures like fridge doors in 65% of its convenience stores—yielding electricity savings of ~30% per fridge and enabling freight shifts to rail that cut emissions by 76% per tonne transported (The Guardian, 2025).

However, progress has not been linear. Tesco's pioneering pledge to halve food waste came under scrutiny when a supplier-related data error forced revision of its reduction from 45% to 18%. This incident highlights the complexity of supply chain management and the fragility of governance frameworks when transparency falters (The Guardian, 2025). But Tesco has sought to reinforce its ESG governance by linking sustainability performance to financial terms: notably, it secured a £2.5 billion revolving credit facility tied to emissions and waste reduction KPIs, underpinned by cross-functional corporate oversight (IFAC, 2025).

Sainsbury's has also escalated ESG commitments, albeit with less public numeric granularity. It accelerated its net-zero target for operations from 2040 to 2035, achieving operational GHG reductions of 47% over 17 years while expanding renewable electricity usage and deploying LED lighting across its estate to cut energy use by 20% per store, supported by £320 million in sustainability investment over a decade (Sainsbury's, 2021). Its "Plan for Better" updates report high-impact initiatives: a 52.8% reduction in operational GHG emissions since 2018/19, 373% more surplus food redistributed since 2019/20, and supplier engagement that covers 39.8% of its Scope 3 emissions with SBTi-aligned targets underscoring its growing visibility in ESG performance and credibility (Sainsbury's, 2024).

Industry-wide studies contextualise these corporate efforts. Research spanning UK food retailers (2013–2022) identifies energy efficiency (e.g., LED upgrades) and waste reduction as positively correlated with Return on Assets (ROA), with coefficients of 0.073 and 0.045 respectively ($p \leq 0.05$) (Olarewaju et al., 2024). While supportive, these findings stop short of elucidating causal mechanisms—leaving open critical questions about how precisely ESG actions drive financial performance. Compounding these analytical gaps are broader sector risks pertaining to ESG credibility. A Deloitte-led review found that 46 of FTSE-100 firms including grocery retailers have had to restate net-zero data with 32% of them due to complexity in tracking Scope 3 emissions, spotlighting the fragile reliability of ESG disclosure mechanisms (Deloitte, 2024)

In sum, ESG strategies in UK supermarkets have matured with increasing ambition and integration yet remain vulnerable to governance discontinuities and measurement opacity. Tesco exemplifies operational leadership with measurable emission cuts, transport electrification, and governance-linked financing, while Sainsbury's demonstrates significant sustainability investments and supplier-level engagement. Despite promising industry-wide correlations between ESG measures and asset returns, academic literature reveals a scarcity of robust, sector-specific causal evidence. This analysis underscores the urgency of cross-dimensional, longitudinal examination precisely what this research project will undertake by systematically tracing Tesco and Sainsbury's ESG trajectories alongside digital and macroeconomic dynamics from 2017 to 2023.

2.8 Digital Transformation and Strategic Adaptation

Over the past twenty years, digital transformation in the UK supermarket sector has progressed from nascent e-commerce to sophisticated omnichannel ecosystems. Early forays such as Sainsbury's pioneering online delivery pilots in the mid-1990s laid foundations, but the transformation gained real traction in the post-2008 digital boom and accelerated dramatically during the COVID-19 pandemic, which forced traditional retailers to integrate physical and digital operations rapidly (Wikipedia, 2025). Strategy& forecast that by 2030, online grocery could account for up to 26% of UK food retail, making omnichannel integration indispensable to strategic competitiveness (PwC Strategy& 2022). Figure 3 illustrated the technologies that will most help online grocery become profitable in 2030.

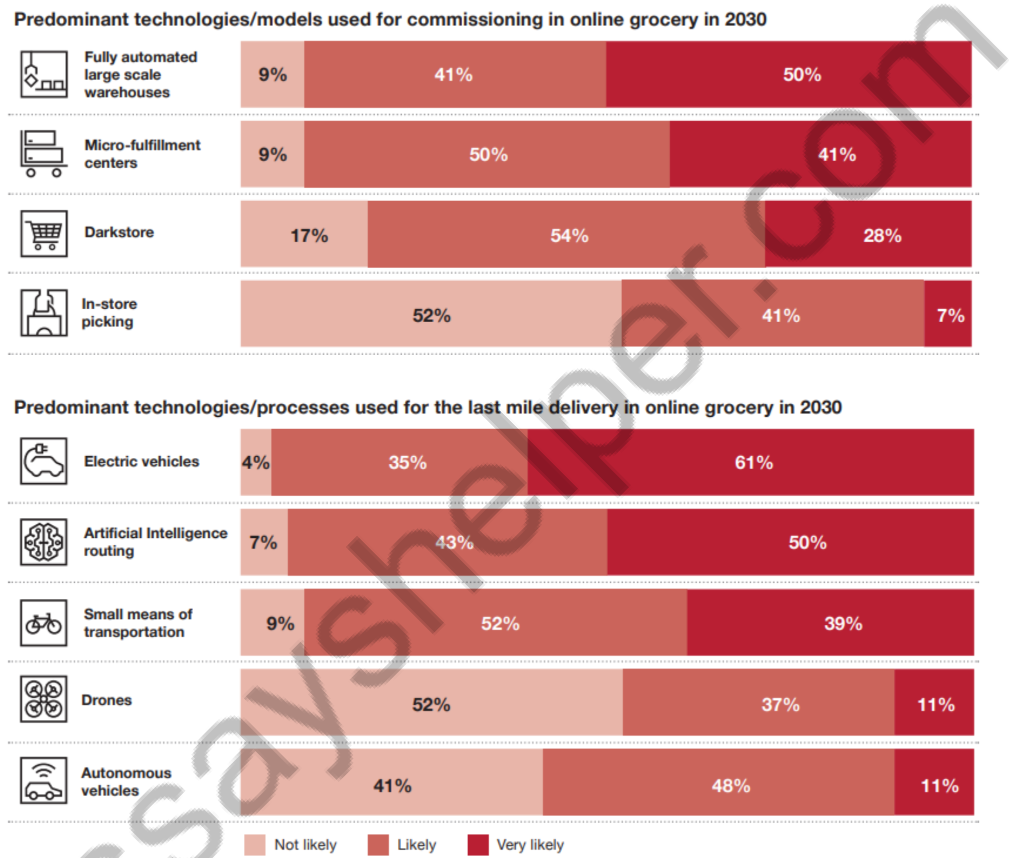

Figure 3 Predominant technologies/models used in online grocery in 2030 (PwC Strategy&, 2022).

Within this shifting terrain, Tesco has taken a data-centric leadership role, leveraging artificial intelligence (AI), cloud infrastructure, and personalized analytics. In 2024, CEO Ken Murphy announced expanded use of generative AI within Tesco's Clubcard system utilizing its 22 million household databases to deliver personalized nutritional suggestions, waste prevention, and promotions tailored to individual customers which signals a sea change in customer interaction and loyalty mechanics (Financial Times, 2024). This initiative is supported by a technology workforce of over 5,000 staff, underpinning the transition to internal innovation and away from reliance on external vendors (Financial Times, 2024).

Tesco's digital transformation also extends to operational infrastructure. It has constructed a robust data lake architecture using Hadoop frameworks, integrated digital signage, mobile apps for customer engagement, and unified analytics across business functions—creating a seamless, insight-driven environment (PR Newswire, 2024). Concurrently, Tesco has deployed "dark stores," or urban micro-fulfilment centres, repurposing underutilized store space to fulfil online orders—an adaptation also mirrored in other sectors such as DIY retail (e.g., B&Q's mini-fulfilment model) (The Times, 2024).

Sainsbury's, while steady in its digital efforts, appears to be in a response mode. Its Chop Chop delivery app and continued investment in Smartshop self-checkout and in-store scanning reflect practical adaptation, especially accentuated by labour cost pressures and automation mandates. The growth of self-service technology and AI-driven inventory systems has effectively mitigated rising staffing expenses a trend seen industry-wide through retail automation such as AI stock cameras and warehouse robots (The Guardian, 2025).

A critical evaluation, however, reveals layered complexity. While Tesco's Clubcard AI initiative positions it at the vanguard of personalized retail, it raises data-privacy concerns—particularly given the depth of individual profiling involved and may alienate privacy-sensitive consumers (Financial Times, 2024). Additionally, although urban fulfilment (e.g., "dark store" models) offers cost-effective delivery, it is operationally dense and may reconstruct inefficiencies if not managed with foresight.

Sainsbury's downturn in online share from 20% during the pandemic to about 13% in recent quarters signals rebalancing consumer behaviour and emphasizes the enduring importance of physical channels) (The Times, 2024). This suggests a risk in over-investment in digital without recognizing return to weekly in-store engagement, especially among demographics prioritizing tactile shopping and premium products. It must be noted that while technological investments are massive, profitability remains a pressing concern. Strategy& cautioned that in-store retailers who fail to integrate omnichannel strategies risk seeing revenues fall over 80%, underscoring the urgency of digital alignment to business sustainability (PwC Strategy& 2022). Tesco's collaborative solution Transcend Retail Solutions puts it in position to monetize its digital infrastructure by enabling other grocers' online fulfilment, positioning Tesco as both a service provider and digital ecosystem architect (The Times, 2024).

Literature reinforces these observed strategic trends. Research reviews of grocery in-store digital transformation identify technologies such as self-checkouts, mobile scanning solutions, AI-driven analytics, and augmented reality as core elements reshaping consumer experiences across the grocery domain (Wolniak, Stecuła & Aydın, 2024). At Tesco, the early adoption of AI for inventory management and self-checkout has demonstrably improved operational efficiency and customer flow, with the loyalty-first Clubcard scheme tying analytics to stocking and promotions in real time (Fu, 2024). However, such implementations also require cultural adaptation; stores and staff must acclimate to an integrated digital environment, or risk underutilization of digital investments. Moreover, while quick commerce such as Tesco's Whoosh and Sainsbury's Chop Chop garnered consumer appeal during demand spikes, analysts caution that rapid delivery will likely remain a niche channel due to high operational costs and limited scale potential reinforcing the need for strategic focus rather than distraction (The Times, 2024).

2.9 Macroeconomic Pressures and Strategic Resilience

Macroeconomic turbulence has profoundly reshaped the strategic landscape for UK supermarkets over the past five years, compelling firms to recalibrate pricing, cost structures, consumer engagement, and operational resilience. From the rapid surge of food price inflation in 2021–2023 to the evolving competition dynamics and tightening policy regimes, understanding supermarkets' responses requires critical analysis of both the structural pressures and their strategic adaptations.

Food price inflation reached its peak in April 2023 at 19.1%, the highest in over 40 years as illustrated in Figure 4, driven by factors such as surging energy costs, geopolitical instability, and disruptions in global supplies particularly of wheat, fertilisers, and vegetable oils (IFS, 2024). Although inflation has since eased falling to 7.0% by January 2024 it remains elevated compared to historical norms (ONS, 2024). Over the period September 2021 to September 2023, food and drink prices rose by 28.4%, substantially outpacing the general CPI increase of 15.7% (IFS, 2024).

These cost pressures amalgamated with Brexit-related import frictions adding an estimated £7 billion to food bills since 2019 have strained supermarket margins (IFS, 2024).

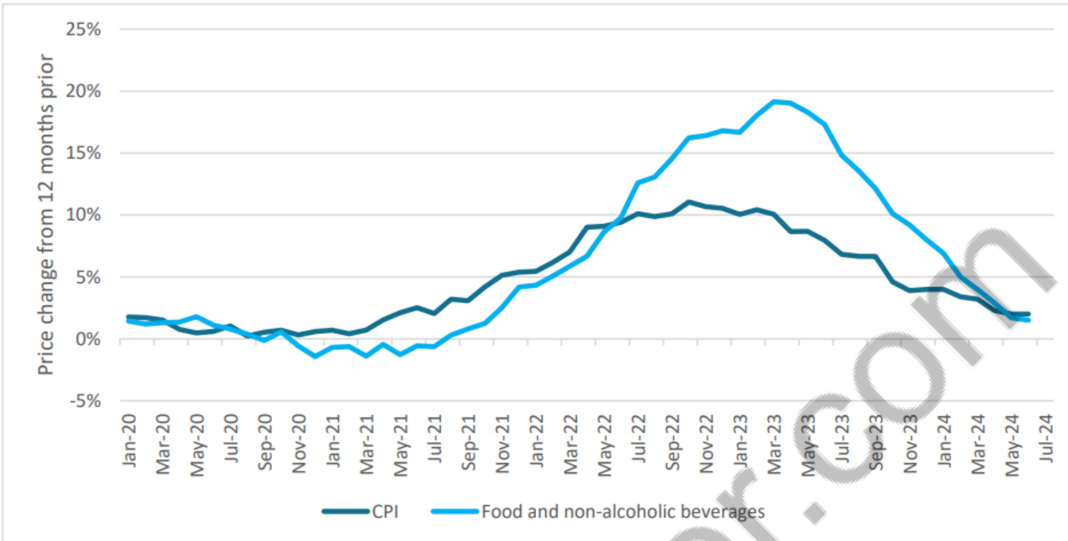

Figure 4 Food Price Inflation in The UK (Competition and Markets Authority, 2024).

In this context, supermarket operating margins remained historically low: the Competition and Markets Authority (CMA) reported that for financial year (FY) 2022/23, the combined operating margins of Tesco, Sainsbury's, and others hovered around 2.7%, rising only modestly to 3.0% in FY 2023/24 as inflation abated (Competition and Markets Authority, 2024). Such slim margins reflect limited pass-through of rising input costs and intense price competition. Nonetheless, Tesco demonstrated strategic resilience by leveraging its value proposition. Its "Clubcard Prices," Aldi Price Match, and Low Everyday Prices initiatives effectively protected market share it increased to 27.3%, even amid significant cost inflation, while discounters similarly intensified pricing pressure (The Times, 2024).

Tesco's FY 2022/23 sales rose by 5.3% to £57.6 billion, though profits were constrained by elevated operating expenses including wages and utility bills (Reuters, 2023). By FY 2023/24, improved inflation metrics and strategic cost initiatives yielded results. Tesco reported its pre-tax profits surged to £2.3 billion its highest in over a decade thanks to £600 million in efficiency savings (including automation and solar panel rollouts across 100 stores). Operating margins inched above 4%, a notable rebound from prior lows (The Guardian, 2024). The intensified focus on efficiency particularly in logistics automation enabled Tesco to better navigate macroeconomic strain.

Notably, these pressures impacted not just margins, but the sector's competitive structure and investment capacity. McKinsey warned that grocery retailers across Europe face eroded EBITDA margins down by around 1 percentage point between 2019 and 2022 as illustrated in Figure 5 and heightened cost of capital, which rose from 2.6% (2021) to 6.7% (2022), significantly raising funding costs for necessary digital and sustainability investments (McKinsey, 2023). Amid this squeeze, scale and operational adaptability have become critical; larger firms with digital and ESG integration are better positioned to sustain resilience.

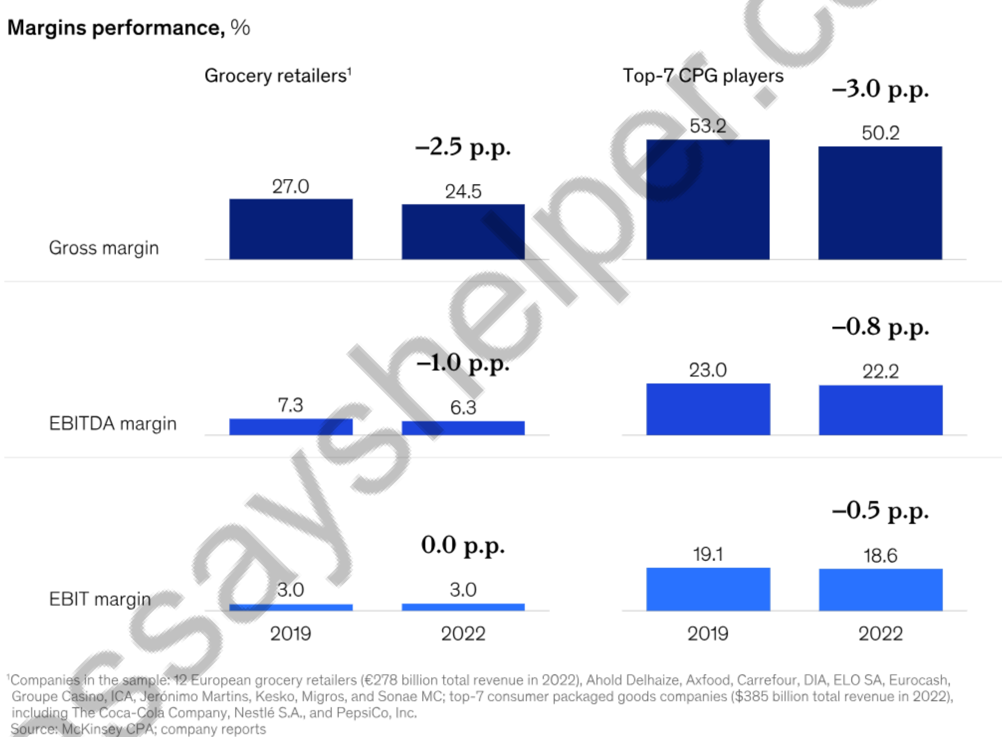

Figure 5 Margin performance (%) (McKinsey, 2023).

Sainsbury's strategic response, though less publicized, emphasizes operational repositioning. While detailed financials are less accessible, the broader industry trend underlines firms seeking to reallocate toward value ranges and own-label offerings structures that better buffer profit margins and align with cash-strapped consumer behaviour. Consumer behaviour shifted markedly, with price-sensitive households pivoting toward essential items, discount brands, or value lines an evolution captured in various market reports (Mintel, 2023, Savills, 2023). Moreover, the Competition and Markets Authority has expressed concern over potential "greedflation", where manufacturers across several grocery categories raised prices faster than costs exacerbating overall inflation for consumers (The Guardian, 2024). This greater systemic pressure highlights the importance of supermarkets having to balance their pricing strategies and the risk to reputation, and the scrutiny of regulators.

The pressures on input costs and labour exacerbated the effects of inflation. The overall economy saw an average gain of 15% versus 25 percent between 2022 and 2024, which impedes the purchasing power of consumers and increases competition between the retailers (Competition and Markets Authority 2024). In the end, mitigation strategies for workforce automation and digitalization of supply chains were implemented in supermarkets; however, they required significant capital expenditures during a time when capital costs were very high.

The anisotropic response to strategic pressure was a result of double dynamic macro-economic pressure that could have impacted margins, as well as cost-oriented investments, which limited the financial flexibility. The Tesco efficiency-based improvement in profitability highlights the importance of scaling, integration, and cost-effective management. The interaction between macroeconomic forces and positioning is crucial as the industry is aiming to stabilize inflation.

In the end, UK supermarkets have endured the test of time through the economic challenges that have been faced in the past in the country because of value policies, cost-effectiveness, and structural changes. However, the weaknesses of margins and capital cost escalation, as well as the demands of investors, mean that the strategic resilience of the company is dependent on the agility of operations, technological leverage, competitive pricing, as well as sustainable profitability. To understand what the next steps are, the connection between these macro-economic pressures, as well as ESG obligations, and the digital revolution should be examined using the method of long-term financial performance is one of the primary aspects of this comprehensive investigation of the business at a firm level.

3. Methodology

This chapter presents the research approach used in the research on the strategic determinants of the financial performance of UK supermarkets, especially the Tesco PLC and Sainsbury PLC. It gives a clear explanation as to why the factors are chosen, the design of the research, data sources, the selection of the case, methods of analysis, and ethical issues. The methodology is designed to ensure robustness, replicability, and alignment with the research aims, thereby enabling a critical and credible analysis of the identified variables.

3.1 Selection of Factors

The choice of the three factors considered in this Business Research Project was based on a systematic review process with references to the PESTLE framework, which is often applied to analyse external forces that influence the performance of organisations (Johnson et al., 2020). Three themes emerged as of importance to the UK supermarket industry across the political, economic, social, technological, environmental and legal spheres: Environmental, Social and Governance (ESG) imperatives, digital transformation, and macroeconomic pressures. These themes are consistently recognized in the literature as central to supermarket competitiveness and financial sustainability, while corporate disclosures and industry reports demonstrate their practical materiality. Importantly, however, while each of these factors is significant, only one which is macroeconomic pressure will be examined in detail in this research project, for reasons explained below.

The first factor, ESG imperatives, reflects the increasing convergence of sustainability with financial strategy. The literature consistently highlights how environmental and social responsibilities are no longer peripheral but central to risk management, reputation, and access to capital (Friede et al., 2015; Albuquerque et al., 2020). Within retail, ESG is shaped by regulatory pressures such as mandatory climate-related disclosures, alongside societal expectations around ethical supply chains and labour practices. Although ESG has a demonstrable influence on long-term investor sentiment and customer trust, its financial impacts are often complex, mediated by disclosure quality, measurement inconsistency, and sectoral differences (Broadstock et al., 2021). As such, ESG provides an important strategic lens but presents limitations in isolating direct short-term financial effects, which restricts its capacity as the primary focus of in-depth analysis.

The second factor, digital transformation, emerged from the technological and social components of PESTLE. Supermarkets have undergone significant digitalization, accelerated by the COVID-19 pandemic, which fundamentally reshaped consumer engagement and operational models (Verhoef et al., 2021). Technologies such as automated fulfilment, mobile shopping platforms, and data-driven inventory management have improved efficiency and enhanced customer convenience. The academic consensus positions digital transformation as a driver of competitive advantage, enabling organizations to reduce costs and expand into new value streams (Kao et al., 2022). However, while transformative, digitalization is often discussed in management research as an enabler of adaptation rather than an external pressure in its own right. Its impacts are strongly interwoven with broader economic and environmental contexts, making it less analytically independent than the other factors.

The third factor, macroeconomic pressures, arises from the economic dimension of PESTLE and represents a consistently destabilizing force on UK supermarkets over the past two decades. Shocks such as the 2008 financial crisis, Brexit-related disruptions, the COVID-19 pandemic, and the 2021–2023 inflationary cycle highlight how exchange rate fluctuations, interest rate shifts, labour market constraints, and energy price volatility permeate strategic decision-making (Beer et al., 2023). Unlike ESG and digital transformation, macroeconomic pressures are fundamentally exogenous: supermarkets cannot avoid inflationary spikes in energy costs, labour market shortages, or consumer purchasing power erosion. These dynamics manifest directly in financial outcomes such as reduced operating margins, squeezed profitability, and shifts in product mix toward discount ranges. Importantly, supermarkets' strategic responses to macroeconomic pressures, whether through cost containment, private-label expansion, or supply chain localization, are observable in financial and operational disclosures, offering a clear empirical basis for analysis.

For this reason, macroeconomic pressures are chosen as the factor to be examined in detail within this project This decision rests on three grounds. First, macroeconomic conditions represent the most immediate and quantifiable determinant of financial performance, as demonstrated by their direct correlation with profitability indicators such as margins and revenue growth. Second, they are least mediated by managerial discretion, making them more analytically robust for empirical testing compared to ESG or digital transformation, which often overlap with one another and are subject to differences in measurement. Third, the literature reveals a notable research gap: while

ESG and digitalization have received extensive empirical attention in retail and broader industries, there is comparatively limited firm-level research examining how UK supermarkets adapt financially to sustained macroeconomic volatility (Miller, 2021). Addressing this gap enables the research project to contribute novel insights into supermarket resilience, while situating findings within the broader strategic context shaped by ESG and digital dynamics.

This study examines five major UK supermarket chains: Tesco, Sainsbury's, Asda, Morrisons, and Aldi. Asda, the third-largest player with a 13.5% market share in 2025, is notable for its value-driven pricing and strategic partnerships in grocery delivery, offering insights into competitive positioning (Kantar, 2024). Morrisons, with a 9.1% share, emphasizes regional strengths and high-quality fresh produce, contrasting Tesco's broader national approach (Global Data, 2024). Aldi, a discounter with a 10.9% share, exemplifies cost leadership through its private-label focus and lean operations, providing a distinct counterpoint to the larger, traditional retailers.

3.2 Research Design and Rationale

This study adopts a quantitative research design embedded within a positivist philosophical orientation. Positivism holds that social phenomena can be measured and analysed objectively, with reality independent of subjective interpretation (Holden and Lynch, 2004). Given that the study's constructs, such as ESG scores, digital capital expenditure, inflation rates, and financial ratios, are quantifiable, the positivist paradigm offers a coherent epistemological basis. The chosen design is cross-sectional with longitudinal elements, analysing secondary data spanning 5–7 years (2017–2023). While purely longitudinal studies capture long-run causality, they are often constrained by extensive data requirements (Holden and Lynch, 2004). By focusing on a medium-term horizon, this design allows identification of emerging trends without diluting rigour. The deductive reasoning approach, characteristic of positivist studies, underpins the hypothesis-testing strategy. Hypotheses derived from theory are tested through regression models linking ESG proxies with financial outcomes. The quantitative design further provides replicability and generalizability, enhancing external validity (Bryman, 2021). Moreover, given the concentration of the UK supermarket sector in a small number of firms, reliance on quantifiable metrics mitigates risks of researcher bias that may occur with qualitative interpretations. At the same time, triangulation through multiple data sources (corporate reports, databases, and economic indicators) strengthens reliability and reduces measurement error. This study incorporates Tesco, Sainsbury’s, Asda, Morrisons, and Aldi to analyze the UK supermarket sector. By comparing traditional retailers (Tesco, Sainsbury’s, Morrisons) with discounters (Asda, Aldi), it captures diverse strategic responses to ESG initiatives, digital transformation, and macroeconomic pressures, reflecting varied market positioning and operational models.

3.3 Data Sources and Collection Methods

The strategy of data collection of this project research was devised to ensure validity, reliability, and comparability between the three variables: ESG, digital transformation macroeconomic pressures, and ESG.

Source Selection: Sources of data for HTML0 are audited annual reports, as well as the corporate disclosures for Tesco PLC and Sainsbury PLC and Sainsbury PLC, which offer uniform, standardized information about the financial performance, including capital expenditures, as well as ESG initiatives. They are supplemented by databases like Refinitiv Eikon and FAME for financial ratios (ROA, ROE, operating margin, and growth in revenue) and ESG databases like MSCI, as well as Sustainalytics for independently evaluated ESG scores. The macroeconomic indicators like inflation, labour costs, as well as interest rates are collected through sources like the UK Office for National Statistics (ONS) as well as the Bank of England. Industry reports that supplement the ONS and Kantar, and other consulting firms, add to the understanding of context.

Inclusion/Exclusion Criteria: To ensure consistency and methodological rigour, only data from the period 2017-2023 is included since this time frame includes Brexit adjustments, COVID-19 pandemic, and the cycle of inflation. Companies that are not part of Tesco or Sainsbury's are not included to maintain the emphasis on the longitudinal depth. ESG data are required to be directly reported or verified by a third-party; financial data should be derived from audited accounts.

Rigorous Screening Method: All extracted data undergo triangulation over at minimum two sources to guarantee the accuracy (e.g., by comparing annual reports to the Refinitiv database). Reports that contain methodological errors or inadequate disclosures are rejected.

This method of multi-source structured data assures the validity, strength, and reliability of the data. It collects information from the annual reports as well as the corporate disclosures for Tesco, Sainsbury's, Asda, Morrisons, and Aldi, as well as audited financial statements as well and publicly available ESG metrics. Financial ratios are obtained from third-party databases such as Refinitiv Eikon and FAME for the five firms. The industry reports of Kantar, as well as Global Data, supplement the analysis by providing market share and performance data, providing more insight into trends across the sector.

3.4 Case/Sector Selection Justification

The UK supermarket sector is defined by an oligopolistic system that is controlled by five major companies: Tesco, Sainsbury's, Asda, Aldi, and Morrisons. Together controls 70 percent of the supermarket market (Kantar 2024). The five companies in this collection, Tesco as well as Sainsbury's, together represent greater than 40 percent market share, as illustrated in Figure 6. This places these two companies as major players whose strategies have a significant impact on market trends across the board (Reuters 2024).

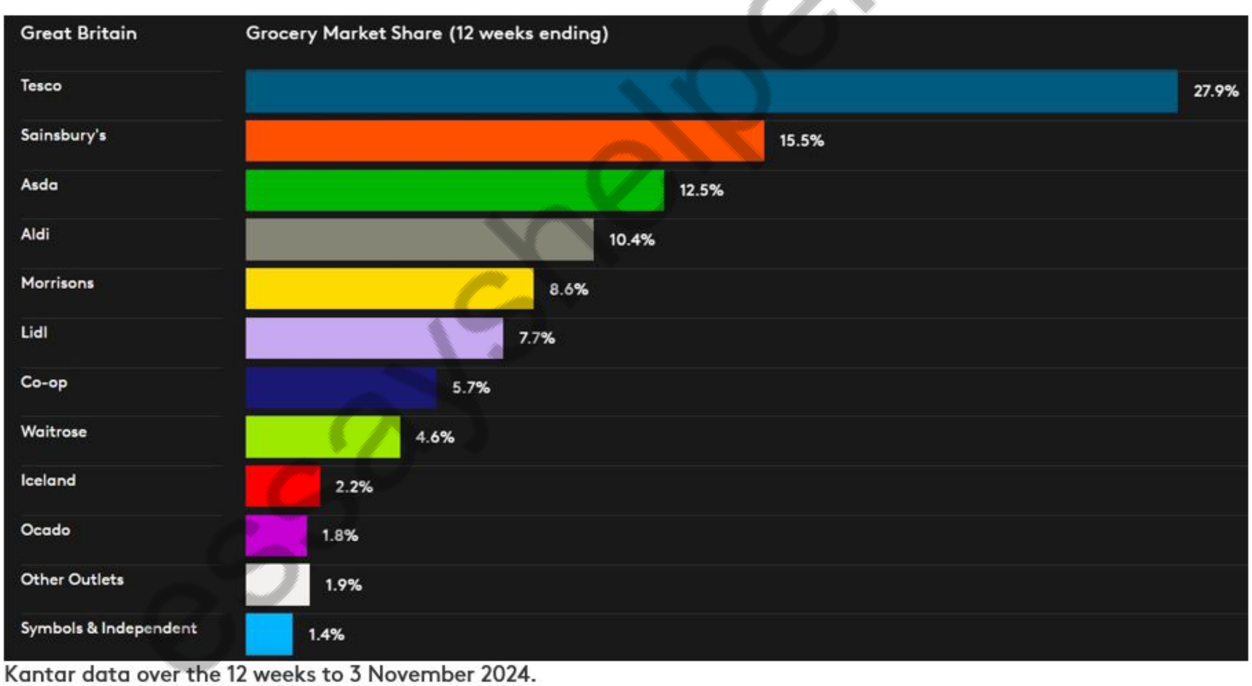

Figure 6 British retailer performance (Kantar, 2024).

Asda, Morrisons, and Aldi were included in the study along with Tesco and Sainsbury's because of their crucial role in the UK sector of supermarkets, which is expected to command the £ 230 bn market by 2025. The focus of Asda on price leadership and its ability to adapt to macroeconomic stressors, including 19.2 per cent peak food inflation in 2023, makes it an essential reason to study consumer behaviour based on cost. Morrisons' focus on fresh products and regional operations provides insight into the resilience of supply chains in the face of economic uncertainty. Aldi is a top discounter, offers crucial information on the trend towards low-cost shopping and the dominance of private label brands, with strategies for success under the pressure of economic uncertainty. While all these companies are essential to the sector, Tesco and Sainsbury's were chosen for this study because they are the most analytically relevant and insightful perspectives on ESG requirements as well as digital transformation and responses to macroeconomic stressors.

3.5 Analytical Techniques

The analytical strategy for this research project focuses on quantifying the impact of macroeconomic pressures on the financial performance of Tesco and Sainsbury's, consistent with the research aim of examining this factor in detail. A regression-based approach is adopted, as it enables robust testing of relationships between macroeconomic indicators and firm-level outcomes, while controlling for confounding factors.

The proposed model evaluates the effect of inflation, interest rates, and labour costs on profitability, measured primarily through operating margins and return on assets (ROA):

Model: Financial Performance = β0 + β1(Inflation) + β2(Interest Rate) + β3(Labour Cost Index) + β4(Size) + β5(Leverage) + ε

The regression models will evaluate the impact of macroeconomic pressures on the financial performance of Tesco, Sainsbury's, Asda, Morrisons, and Aldi, covering the UK supermarket sector's top players with a combined ~85% market share in 2025. These models will examine how inflation, interest rates, and labor costs influence profitability metrics, specifically Return on Assets (ROA) and operating margins, across each firm. By including both traditional retailers (Tesco, Sainsbury's, Morrisons) and discounters (Asda, Aldi), the analysis will provide comparative insights into how diverse business models respond differently to macroeconomic pressures, highlighting strategic variations in financial resilience.

3.6 Ethics and Limitations

Although secondary data mitigate direct ethical risks associated with human subjects, the study remains bound by principles of accuracy, transparency, and responsible data use (Saunders et al., 2019). All financial and ESG data are drawn from publicly available, verifiable sources, with care taken to avoid misrepresentation. Citation of sources ensures compliance with academic integrity.

The limitations stem from the availability of data and the validity of measurement. ESG scores vary among rating agencies and are subject to the methodological transparency being shaky and a risk of bias (Berg, Koelbel, and Rigobon, 2019). Reliance on reports from companies' ESG disclosures can lead to risk of greenwashing, since companies are enticed to exaggerate their advancement (Fatemi, Glaum, and Kaiser, 2018). Similar to electronic CapEx, data are usually compiled within the total capital expenditures, making it more difficult to isolate particular investments in technology. These indicators, although strong, can be influenced by indirect delays in the performance of firms that aren't adequately reflected in an analysis of cross-sectional data. The main drawback to this analysis is the absence of discount stores with smaller sizes, such as Lidl, that could offer an additional perspective regarding how value-driven retailers deal with economic pressures like the 19.2 percent food inflation that is expected to peak in 2023. Additionally, relying on publicly accessible ESG disclosures can lead to inconsistencies because of the differing standards for reporting across companies, as well as the potential for greenwashing of companies that selectively highlight sustainable initiatives to boost their image. Additionally, the time horizon of 5-7 years, although enough to catch significant shocks, might not accurately reflect the long-term impacts from ESG and digital investment that often generate profits over the course of decades. However, this compromise is a balance between analytical rigour and practicality.

4. Results

This chapter presents the findings of research conducted empirically that examines the effects of macroeconomic influences on the financial strategy and results of the UK supermarket industry between 2021 and 2025, an era marked by substantial fluctuations in the economy. The research focuses on how the impact of inflation, tightening of monetary policy, and other macroeconomic variables impacted the cost of operations, consumer buying capacity, and corporate financing across the sector. The study reveals the principal factors that had an impact on financial results and the strategies for adapting to these pressures employed by the major players, including Tesco, Sainsbury's, Asda, Morrisons, and Aldi.

4.1 Inflationary Pressures and Profitability Impact

In the 2021-2025 period, the UK supermarket sector of supermarkets was subject to massive inflationary pressures, which profoundly affected the financial performance of all the major players. In the year 2021, the Office for National Statistics (ONS) stated that non-alcoholic and food prices soared by 19.2 percent in March 2023. The Consumer Price Index (CPI) inflation reached 10.1 percent in the month of October 2022. This was among the highest of G7 economies (ONS 2023). Due to volatile energy costs and post-Brexit trade disruptions and challenges to supply chain management globally, and pressures on to supply chain, these have increased the cost of energy inputs, logistics, imports, as well as logistics. These costs were transferred to retailers.

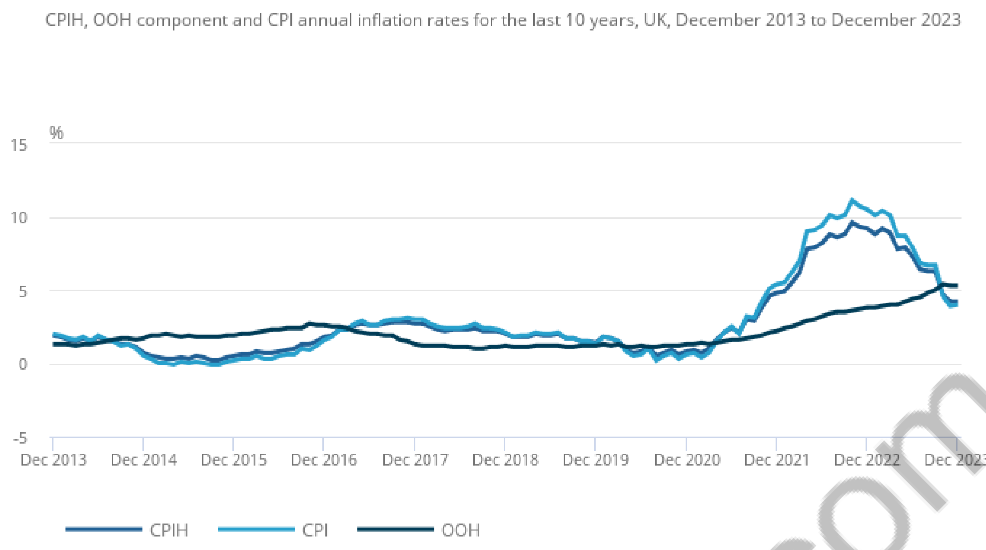

Figure 7: Inflationary Pressures in the UK (*Source: ONS, 2023)*

The soaring inflation rate significantly reduced the profits of Tesco in addition to Sainsbury's. The adjusted operating margin of Tesco dropped from 4.4 percent in FY2021/22 to 3.8 percent in FY2022/23 because of the higher cost of inputs and its less ability to pass these costs on to consumers with a price sensitivity (Tesco 2023). In the same way, Sainsbury's retail underlying operating margin fell from 3.4 percent in FY2020/21 to 3.0 percent in FY2023/24 (Sainsbury's 2024).

Asda, Morrisons, and Aldi, though also impacted they have implemented distinct strategies to counter these pressures. Asda's "Price Lock" initiative, which aligns prices with discounters such as Aldi which helped to maintain its 13.5 percent market share despite a reduction in margins. Morrisons, focused on regional fresh produce, had to contend with higher logistics costs, which resulted in a slight decline in profitability. Aldi, with its cost-leadership model as well as its private-label concentration, saw its market share increase from 5% to rise to 10.9 by 2025, leveraging shifts in consumer preferences towards affordable alternatives in times of economic stress (Kantar 2024).

4.2 Asymmetry in Price Pass-Through

One of the most notable aspects of the 2021-2025 inflationary time period was the uneven price transfer in the UK retail sector. Retailers accelerated the increase in prices for their customers due to the rising cost of inputs but were slower to reduce prices when prices were stabilized. The research suggests that although costs grew quickly were passed on to the consumer, reductions in prices were slow due to the dynamics of markets and operational limitations (Davies and McEvoy 2024).

For example, Tesco's annual report emphasized "stickiness," noting delays in the reduction of prices after wholesale costs slowed down in late 2023 due to contract lags and hedging strategies (Tesco 2023). Similar trends were seen on the other hand at Asda and Morrisons and Morrisons, where price adjustments were accompanied by falling input costs, which exacerbated the pressure on margins. However, Aldi's constant low-price policy, backed by its focus on private label, allowed it to maintain its competitive edge while maintaining its 10.9 percent market share, despite challenges with inflation (Kantar 2024).

4.3 Monetary Tightening and Financing Costs

Monetary tightening was a critical macroeconomic factor during the 2021–2025 period, with the Bank of England raising its base rate from 0.1% in December 2021 to 5.25% by August 2023, the highest since 2007 (Bank of England, 2023). This policy response to inflation increased financing costs for supermarkets, particularly for debt and lease liabilities, while also reducing consumer spending power due to higher mortgage and credit costs.

	Notes	52 weeks ended 25 February 2023 Before adjusting items £m	Adjusting items (Note 4) £m	Total £m	52 weeks ended 26 February 2022 Before adjusting items £m	Adjusting items (Note 4) £m	Total £m
Continuing operations							
Revenue	2	**65,762**	**–**	**65,762**	**61,344**	**–**	**61,344**
Cost of sales		(61,005)	(1,029)	(62,034)	(56,574)	(176)	(56,750)
Impairment (loss)/reversal on financial assets	2	(67)	–	(67)	39	–	39
Gross profit/(loss)		**4,690**	**(1,029)**	**3,661**	**4,809**	**(176)**	**4,633**
Administrative expenses		(2,060)	(76)	(2,136)	(1,984)	(89)	(2,073)
Operating profit/(loss)		**2,630**	**(1,105)**	**1,525**	**2,825**	**(265)**	**2,560**
Share of post-tax profits of joint ventures and associates	13	8	–	8	15	–	15
Finance income	5	85	–	85	9	–	9
Finance costs	5	(647)	29	(618)	(652)	101	(551)

Figure 8: Tesco's Financial Costs (FY2022/23) *(Source: Tesco, 2023)*

Underlying net finance costs

Underlying net finance costs	52 weeks to 1 March 2025 £m	52 weeks to 2 March 2024 £m	Change %
Non-lease interest costs	**(76)**	(71)	(7.0)
Non-lease interest income	**29**	28	3.6
Finance costs on lease liabilities	**(258)**	(251)	(2.8)
Total underlying net finance costs	**(305)**	(294)	(3.7)

Figure 9: Sainsbury's Net Finance Costs (FY2024/25) *(Source: Sainsbury's, 2024)*

Tesco, carrying a net debt of £10.5 billion in FY2022/23, saw finance costs rise by 11% to £618 million, driven by elevated lease interest and refinancing expenses (Tesco, 2023). Sainsbury's, with a lower net debt of £3.8 billion, reported finance costs of £305 million in FY2023/24, up by £11 million from the prior year (Sainsbury's, 2024). These differences highlight how varying debt structures and leverage levels shaped firms' exposure to rising interest rates.

Asda, burdened by substantial debt, faced significant pressure, with interest rate hikes directly increasing its debt servicing costs. Morrisons, with a relatively lighter debt load, experienced more modest finance cost increases but still contended with higher capital costs, necessitating strategic adjustments.

4.4 Labor Market Pressures and Wage Growth

Between 2021 and 2025, the UK labour market experienced significant wage inflation, with average weekly earnings for full-time employees rising from £609 in 2021 to £682 in 2023, driven by a constrained labour supply and minimum wage increases (ONS, 2023). This wage growth exerted considerable pressure on operational costs, particularly for supermarkets, where labor constitutes over 12% of total expenses (Caballero et al., 2024).

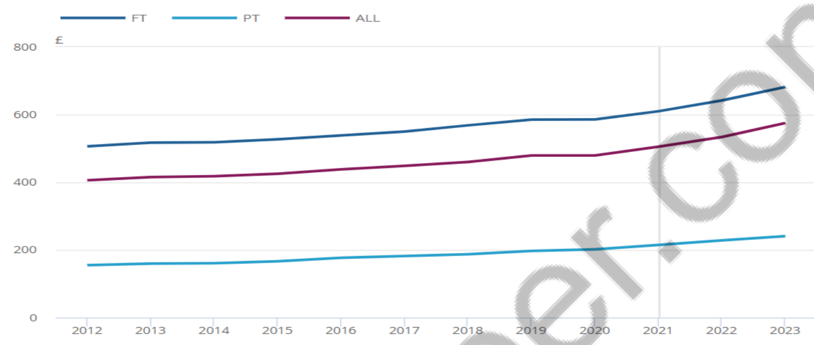

Figure 10: Gross Median Weekly Earnings by Employment Type, UK, 2012–2023 *(Source: ONS, 2023)*

Tesco's employment costs reached £24 billion in FY2023, while Sainsbury's reported £16 billion in staff costs for FY2024/25. To address rising labor expenses, Tesco implemented a 15% hourly pay increase from 2021 to 2023, and Sainsbury's raised wages by 19% over the same period.

	Notes	2023 £m	2022 £m
Wages and salaries		12	13
Social security costs		2	2
Pension costs	13	1	1
Share-based payments expense	12	9	3
Total		**24**	**19**

Figure 11: Employment Costs at Tesco, FY2023 *Source: Tesco, 2023*

Asda and Morrisons also grappled with escalating labour costs, responding with a combination of wage adjustments and automation investments. Aldi, leveraging its lean workforce model, mitigated costs through operational efficiencies, with minimal wage increases offset by higher employee productivity.

To counter labour cost pressures, Tesco and Sainsbury's accelerated automation, adopting self-checkout systems, electronic shelf-edge labels, and automated warehousing. Similarly, Asda and Morrisons expanded mobile self-scanning technology and automated distribution centres to reduce reliance on labour and enhance cost efficiency.

4.5 Strategic Responses: Loyalty Programs and Own-Label Products

To mitigate the impact of macroeconomic pressures during 2021–2025, Tesco, Sainsbury's, Asda, Morrisons, and Aldi enhanced their loyalty programs and expanded own-label product offerings. Tesco's Clubcard program grew to over 21 million active users by 2023, with 80% of large basket transactions featuring at least one price-matched item (Tesco, 2023). Sainsbury's Nectar scheme reached 18 million members by 2024, showing increased engagement and redemption rates (Sainsbury's, 2024).

52 weeks ended 25 February 2023 At actual exchange rates	UK & ROI £m	Central Europe £m	Total Retail £m	Tesco Bank £m	Total at actual exchange £m
Continuing operations					
Revenue	60,246	4,410	64,656	1,106	65,762
Less: Fuel sales	(7,877)	(229)	(8,106)	–	(8,106)
APM: Sales	52,369	4,181	56,550	1,106	57,656
Adjusted operating profit	**2,307**	**180**	**2,487**	**143**	**2,630**
Adjusting items (Note 4)	(1,058)	(36)	(1,094)	(11)	(1,105)
Operating profit	**1,249**	**144**	**1,393**	**132**	**1,525**
Adjusted operating margin	**3.8%**	**4.1%**	**3.8%**	**12.9%**	**4.0%**
Share of post-tax profits of joint ventures and associates					8
Finance income					85
Finance costs					(618)
Profit before tax					**1,000**

Tesco Bank revenue of £1,106m (2022: £922m) comprises interest and similar revenues of £540m (2022: £473m), fees and commissions revenue of £257m (2022: £210m) and insurance revenue of £309m (2022: £239m). For insurance, refer to Note 24.

52 weeks ended 26 February 2022 At actual exchange rates	UK & ROI £m	Central Europe £m	Total Retail £m	Tesco Bank £m	Total at actual exchange £m
Continuing operations					
Revenue	56,404	4,018	60,422	922	61,344
Less: Fuel sales	(6,420)	(156)	(6,576)	–	(6,576)
APM: Sales	49,984	3,862	53,846	922	54,768
Adjusted operating profit	**2,481**	**168**	**2,649**	**176**	**2,825**
Adjusting items (Note 4)	(290)	25	(265)	–	(265)
Operating profit	**2,191**	**193**	**2,384**	**176**	**2,560**
Adjusted operating margin	**4.4%**	**4.2%**	**4.4%**	**19.1%**	**4.6%**
Share of post-tax profits of joint ventures and associates					15
Finance income					9
Finance costs					(551)
Profit before tax					**2,033**

Figure 12: Tesco Operating Margin (2022–2023) *Source: Tesco, 2023*

Retail underlying operating profit	Note[a]	52 weeks to 1 March 2025	52 weeks to 2 March 2024	Change
Retail underlying operating profit (£m)	**A1.2 a)**	**1,036**	966	7.2%
Retail underlying operating margin (%)	**A1.2 a)**	**3.17**	3.01	16bps
Retail underlying EBITDA (£m)	**A1.2 d)**	**2,192**	2,078	5.5%
Retail underlying EBITDA margin (%)	**A1.2 d)**	**6.72**	6.48	24bps

Figure 13: Sainsbury's Retail Underlying Operating Profit (2024–2025) *Source: Sainsbury's, 2024*

Asda's Asda Rewards and Morrisons' Morrisons More card focused on retaining customers through targeted discounts and personalized offers. Aldi's emphasis on private-label lines, such as "Specially Selected" and "Everyday Essentials," drove a 5% market share increase to 10.9% by 2025, appealing to cost-conscious shoppers during peak inflation (Kantar, 2024).

Own-label product expansion bolstered resilience. Tesco's Finest premium range grew by 7% in FY2022/23, with its value lines up by 14%. Sainsbury's Taste the Difference range contributed 12% to grocery sales in FY2024/25, while its value range expanded by 13%, reinforcing competitiveness amid economic volatility.

The final research revealed that the five major supermarkets - Tesco, Sainsbury's, ASDA, Morrisons, and ALDI- all faced similar economic pressures. Their strategies were different according to their market position and business strategies. Whereas Tesco and Sainsbury's concentrated on premium products and digital innovations, ASDA and Morrisons focused on the importance of their pricing and market share throughout the whole region. ALDI, with its discount-based model, was able to prosper under the pressure of inflation and benefited from the rise in customer loyalty and its preference for private-label products.

5. Analysis

The results in this chapter show the enormous impact of macroeconomic factors on the direction of strategic planning as well as the performance of the UK retail industry. The direct effects of cost structures and profit, as well as the decisions made by investment managers, are evident through the impact of inflationary shocks, tightening of monetary conditions, as well as the constant pressures on the labour market. Additionally, resilience strategies built on loyalty ecosystems and own-label developments have been significant buffers for companies. Examining these findings in relation to the theories and research currently in the field highlights how macroeconomic factors are the main driver that determines the performance of supermarkets. They also show how they interact with other issues, such as ESG demands and technological developments.

The most important conclusion of the study is that the inflation cycle between 2021 and 2023 put the operating margins and caused a shift in consumer behaviour. In the case of Tesco, findings show that Tesco's margin decreased to 3.8 percent (and the margin of Sainsbury decreased to 3.01 percent), and this is evidence that these businesses struggled to pass on the increasing costs to customers in totality. This result is in line with the latest research on the impact of cost-push inflation in the retail industry, in which an imbalance is prevalent in the process of price pass-through, which sees input costs quickly transferred to consumers, while prices decrease more slowly (Davies and McEvoy 2024). This is backed up by research findings that show that supermarkets were cautious in reestablishing their margins when wholesale costs were reduced in 2023. The magnitude of the shock to inflation was larger by type and duration than previous problems, e.g., the 2008 financial crisis, which increased the strategic importance. Additionally, it supports the assertion of Beer et al. (2023) the fact that inflation over the long term calls for a revision of pricing models instead of using short-term discounting tools in the event that companies alter their offerings to meet the changing demands of consumers.

The results also indicate that the dependence on the private labels and loyalty ecosystems was the major strategic reaction to inflation. Both Tesco, with its Aldi Price Match, and Sainsbury, with its Stamford Street, had trends of growth in the double digits, which was consistent with the Kantar (2024) data indicating that the penetration of the private label nationwide is over 50%. This pattern corresponds to the existing body of behavioural studies indicating that in times of inflation, customers tend to favour value-seeking behaviour and can readily switch to lower price elastic retailer brands (Audty and Meyer, 2024). Nevertheless, the results also indicate that partnerships such as Tesco Finest and Sainsbury Taste the Difference remained applicable, which proves that supermarkets made sure to reconcile the price-sensitive groups with something that is higher-margin. This cost leadership and differentiation dual expansion strategy is not new (Kohtamaki et al. 2020), indicating that successful retailers integrate both the cost leadership and differentiation strategies, especially during unstable macroeconomic periods.

Another important issue that affected the UK supermarket industry was the tightening of the monetary policies. With the Bank of England increasing its Bank Rate, which was 0.1% at the end of 2021, to 5.25% in August 2023 (BoE, 2023), two main impacts appeared: The cost of financing is increased, especially on the current debt and lease debts. Less buying power in consumers who now have to pay more interest on mortgages and credit.

Another determining force was pressure in the labour market. In the UK, the average wage increased by 682 per week in 2023 (compared to 609 per week in 2021), which was caused by a constrained labour supply and an increase in minimum wage rates (ONS, 2023). This rise in wages left a significant upward pressure on the operational cost, especially in retail, where 12 percent or more of the operational costs are the wage costs (Caballero et al., 2024). Tesco has reported a total of £24 billion in total employment expenditure in the FY2023, with Sainsbury reporting staff expenditure of 16 billion in FY2024/25.

Lastly, the two companies responded to macroeconomic pressures by creating loyalty ecosystems and developing their own-label products. By 2023, Tesco had more than 21 million active members of its Clubcard, and Sainsbury had more than 18 million members of its Nectar scheme. These statistics highlight the key position of customer data in influencing pricing and promotions. The results indicate that promotional sales contributed a third of grocery revenues in 2024, which supports scholarly arguments that loyalty platforms are currently used to establish pricing regimes enabling companies to offer personalized discounts that strike a balance between retaining volume and making profits (Grewal et al., 2017).

Tesco, as well as Sainsbury, also increased their own-label products as part of their resilience strategy. The Tesco Finest and Sainsbury Taste the Difference high-end offerings, together with the value brands, enabled the companies to reach the high-end and low-end markets. This two-fold approach is in agreement with the results of Kohtamaki et al. (2020), who believe that effective business organizations have a combination of cost leadership and differentiation, especially when economic conditions are volatile.

Although macroeconomic pressures were the most immediate and exogenous factors of performance, their combination with ESG imperatives and digital transformation was also clear. Inflation and wage pressure have pushed Tesco and Sainsbury to hasten energy efficiency and automation projects to further push the ESG targets of sustainability and carbon reduction. Sustainability initiatives, which include making supply chains identifiable, have aided in the development of private labels, ensuring that the affordability wouldn't come at the expense of ethical standards (Tesco 2023, Sainsbury's in 2024).

The connection between digital transformation and human productivity is equally important. The increasing cost of labour has resulted in an increase in automation, and inflationary pressures have emphasized the significance of predictive analytics when it comes to the areas of pricing as well as inventory. The loyalty ecosystems that have an extremely strong dependency on the internet infrastructure have proven vital in securing market share. Such results confirm Verhoff et al. (2021) and conclude that digitalization has evolved into an essential factor in strategic planning and is not a major advantage in the face of macroeconomic pressures. This contrast is consistent with the strategy heterogeneity studies, which suggest that even in oligopolistic markets, particular characteristics of the firm determine the success of strategies for adaptation (Johnson and co. in 2020).

6. Conclusion, Recommendations & Reflection

6.1 Conclusion

This study was designed to study how macroeconomic pressures influence the financial performance and strategic reactions of UK supermarkets. The study was restricted to 2021-23, when the industry faced a significant economic turmoil that included inflationary shocks and tightening of the monetary policy, and labor market pressures. The results show that macroeconomic factors are the most immediate and tangible variables that determine the performance of supermarkets, particularly for the near and mid longer. While ESG imperatives and digital transformations are important in resiliency over the long run, however, the study shows that macroeconomic factors are more immediate and crucial in the financial performance of supermarkets, including inflation, tightening of monetary policy, and the constraints of the labour market.

The most significant results of this study show the fact that Tesco and Sainsbury faced high expenses for operations as well as a significant number of shrinking margins due to pressures from inflation. These pressures also came with the tightening of the market for money, which increased the cost of financing for both firms. However, Tesco as well as Sainsbury responded strategically by enhancing their loyalty programs and launching own-label products and investing in energy efficiency and automation initiatives. These moves helped the companies to maintain their market shares, ease the costs of operations, and ensure their profitability despite the tough macroeconomic climate.

The study also revealed that macroeconomic fluctuations were not just one thing; however, they were triggers that have led to more strategic goals, including a strengthening of ESG commitments and speeding up initiatives to transform the digital world. The plans for resilience of companies were in line with the reality of economics as well as their long-term sustainability, which is an indication of the interdependent characteristics of volatility in macroeconomics and ESG goals on one hand, and digital change on the opposite. Based on these findings, one can conclude that macroeconomic factors are the primary factors that determine financial performance in the UK supermarket industry. The strategic resilience of a company is dependent on how a firm can adapt to these changes while also incorporating sustainability and innovation into its business.

6.2 Recommendations

Because of the volatility in macroeconomics and the resulting volatility in the macroeconomic environment, it is essential for supermarkets to adapt their strategies to respond in a constant way. Automation and energy efficiency must be the main focus in capital allocation. These are essential tools to safeguard the profit and market share. Companies should also develop custom-designed promotions and value products that meet the diverse needs of customers in times of high inflation. Predictive analytics and segmentation of consumers will allow supermarkets to be more responsive to economic conditions and, in turn, improve the effectiveness of price-matching campaigns and other promotions.

Mechanisms for pricing food should be controlled by policymakers in order to ensure that the pressures of inflation are not put on vulnerable populations, without considering their impact on them. Incentives for digitalization and energy-efficient infrastructure can not only improve resilience in the retail sector but also aid the UK in reaching its sustainability goals overall. Retailers can adapt to the increasing costs of labour by coordinating strategies for wages and training their workforce. They can also serve equally effectively and effectively.

More studies are possible to study how the impact of macroeconomic instability impacts smaller supermarkets like Aldi and Lidl, which operate with different approaches to market and approach as compared to Tesco as well as Sainsbury. Furthermore, studies could be conducted to study the long-term effects of ESG or digital investing that go beyond 7 to 10 years, as studied in this study. It is beneficial to expand the time frame into the tens of years to have a better understanding of the total impact on sustainability and the use of technology within the retail industry.

6.3 Limitations and Suggestions for Future Work

Although this study provides useful information about the impact of macroeconomic pressures on UK supermarkets, it is limited in a number of ways. This dependency on secondary data in annual reports, economic indicators, and market research results in the fact that there is a lack of granular operational insights, and this issue can be remedied in future studies, which may include primary research in the form of interviews or surveys on a sample of the retail executives and employees. Moreover, the omission of the discount retailers, Aldi and Lidl, in the analysis restricts the scope of the insights into the alternative responses to macroeconomic shocks. Future research would look at adaptation to external economic forces by various models of supermarkets, especially discount-based models.

7. Personal Reflection

The Business Research Project (BRP) has been an eye-opener as it has not only enhanced my knowledge in subjects, but also my research skills to a great extent. When I started working on the project, I thought that the macroeconomic pressures in the UK supermarket industry would give me a distinct direction to conduct my research, so that I could be able to relate economic factors such as inflation and interest rates to financial performance. Among the earliest problems that I had to face was the discovery of the interdependence among macroeconomic factors, ESG, and digital transformation in the supermarket industry. I had thought of these factors separately, but soon after, I realized that they were closely connected, and this doubled my analysis. The model by Kolb focuses on the cyclic approach of concrete experience, reflective observation, abstract conceptualization, and experimentation (Kolb's Learning Cycle, 2005). Once I delved into the complexities of combining different factors, I transformed to a more reflective process, revisiting my beliefs and examining the research. The result was an abstract conceptualization. During this process, I reconstructed the interconnectedness of macroeconomic forces with other forces, such as ESG, along with digitalization.

The first step was to sort through the data relevant to my research and then incorporate it into the regression equations, particularly when I wanted to separate the impact of one or more variables, such as how inflation impacts profitability, or how it affects other variables constant like how big the firm is and its leverage. To tackle this issue, I had to think about the issue through the Reflective Cycle developed by Gibbs (1988), which required an extensive reflection (Gibbs' Reflective Cycle, 1988). However, as I continued to work with the research project, I started to accept the application of these methods, which have dramatically enhanced my abilities in obtaining useful conclusions from vast quantities of data. The reflection process has led me to the opportunity to critically evaluate my research method and the abilities I acquired during this Business Research Project (Schön's Reflective Practice, 1983). The lessons I've gained by reflection on my issues and learning process, as well as the skills I was able to master, will prove invaluable for my academic endeavors in the future.

Beyond theory, my ability to clean and manage large datasets improved significantly, as did my understanding of financial ratios and macroeconomic indicators. For example, when interpreting operating margins alongside inflationary trends, I had to link numerical results with economic reasoning. This dual skill of quantitative analysis and conceptual explanation is something I had not mastered before. Additionally, my critical thinking expanded as I learned to question the reliability of ESG metrics, especially given the divergence in ratings reported by different agencies. Without reflection, I might have accepted these scores at face value, but instead I interrogated their validity and considered their limitations within my analysis.

The process of writing the literature review also contributed significantly to my development. At first, I was overwhelmed by the breadth of existing work on ESG, digital transformation, and macroeconomic volatility. Many of the studies were not specific to supermarkets, which made it difficult to identify what was directly relevant. However, as I worked through the literature, I became more skilled at synthesizing arguments and identifying gaps. For example, I noticed that while ESG and digital transformation had been studied separately, very little work integrated them with macroeconomic pressures in the context of UK supermarkets. This recognition of a gap gave me a stronger sense of purpose, as I could see how my project added value to the academic discussion. It also taught me that literature reviews are not about summarizing everything available but about critically positioning one's own research within an ongoing debate.

Moving on, Schön's work on reflective practice also became relevant as I realized that part of research is "reflection in action," not only reflection after the fact. While running regressions, I often noticed unusual patterns, such as coefficients that shifted direction when control variables were added. In those moments, rather than waiting until the end to reflect, I paused to reconsider my model specifications in real time. This reflexivity was crucial for avoiding misleading conclusions. Schön emphasizes that professionals must balance technical rationality with improvisation, and I began to understand what that meant in the context of research practice.

One of the most important insights from this reflection is the recognition that research is not linear. I began with a clear plan, but soon discovered that the interdependence of macroeconomic factors, ESG, and digitalization blurred the neat boundaries I had set. Initially, I saw this as a failure of planning, but through reflection I realized it was actually a deeper truth about complex systems: variables rarely operate in isolation. This recognition enhanced my conceptual maturity and encouraged me to design analysis that embraced interconnectedness rather than oversimplification.

Looking ahead, the skills and insights gained from this project will be directly applicable to my future academic and professional work. In academia, I will approach research with greater confidence in handling complex datasets and applying reflective frameworks. Professionally, I now better appreciate the importance of integrating financial analysis with strategic considerations, such as sustainability and digital transformation. The UK supermarket industry was the context for this project, but the reflective skills I developed, such as critical evaluation, reflexivity in action, and resilience in the face of uncertainty etc., are transferable to any field where evidence-based decision making is required.

In conclusion, the Business Research Project has been transformative for me. It has taught me the complexity of real-world research, strengthened my technical and analytical skills, and given me the confidence to approach problems with resilience and adaptability. Most importantly, it has shown me that reflection is not something done at the end of a project but a continuous process that shapes the way research is carried out. I will carry these lessons forward, confident that they will inform both my academic development and my professional practice in the years to come.

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Appendix – Meeting Record

Date of meeting	Topic of meeting	Date PDF sent to supervisor
9/7/2025	Meeting 1	13/7/2025
13/8/2025	Meeting 2	28/8/2025
1/9/2025	Meeting 3	12/9/2025