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AI Adoption and Microbusiness Performance: The Mediating Role of Organisational Agility in UK Retail

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Abstract

Artificial Intelligence (AI), when adopted by microbusinesses, can be of huge benefit in improving their operational efficiency. But on the impact of AI on small retail business performance, there is limited evidence. The relationship between AI adoption and microbusiness performance in the UK retail sector was examined in this study, alongside the mediating role of organizational agility. A cross-sectional survey design with a qualitative approach that included 200 microbusinesses in the UK was employed; data were analyzed using descriptive statistics, correlation analysis, and regression-based mediation analysis. The results revealed that the adoption of AI was significantly correlated with microbusiness performance ($\beta = .503$, $p < .001$) and organizational agility ($\beta = .604$, $p < .001$). From the mediation analysis, organizational agility was found to partially mediate the relationship between AI adoption and performance (indirect effect: $\beta = .267$; 95% CI [.174, .367]), alongside a direct effect ($\beta = .236$, $p = .001$). The findings show how AI influences microbusiness performance and support organizations' ability to adapt to a changing business environment. By identifying organizational agility as a key mechanism through which UK retail microbusinesses can convert AI adoption into improved performance, the study contributes to the ongoing research on AI adoption.

Introduction

Artificial intelligence (AI) is revolutionizing various industries globally, with the potential to significantly impact work efficiency, decision-making processes, and profitability. There has been an increase in the adoption of AI in the 21st century, which is a result of the increase in computing power and access to large volumes of data in data-heavy industries such as retail (Ratia et al. 2018; Haenlein and Kaplan 2019). Gujarati (2016) also noted that retailers can utilize AI technologies that include business intelligence (BI) tools to analyze big data, generate knowledge that is actionable, personalize customer experiences, maximize productivity, and gain competitive advantage. Small retailers can also achieve a lot more in terms of productivity and profitability with the help of applications such as AI chatbots, inventory optimization, demand prediction, and personalized marketing. (Plastino and Purdy 2018; Ajiga 2024).

UK's microbusinesses, with fewer than 10 workers, are a critical part of the country's economic health, particularly in retail, with general stores and kiosks serving the local populations. (Makiwa 2018; Zamba et al. 2018). While AI technologies present opportunities for enhancing business operations and competitiveness, the context in which microbusinesses operate is very different from that of larger organizations. They may face constraints in adopting and effectively putting in place new technologies due to limited financial resources, lack of specialized technological expertise, informal organizational structures, and owner-centered decision-making. (Badghish 2024). With these constraints, it is not clear as to whether microbusinesses can achieve the same performance benefits from AI as larger businesses. However, the performance potential of AI adoption is unlikely to be the same at every organization. Implementing AI technology is not a standalone solution to increase productivity, efficiency, or competitiveness. Instead, the ability of the organization to integrate and react to technological shifts

will decide the success of AI implementation in driving real business results. This is especially relevant for micro businesses due to their limited resources, and organizational structure may affect their ability to convert technological capabilities into improved business performance.

The potential for the use of artificial intelligence (AI) to transform the performance of microbusinesses in the UK retail sector has yet to be explored, despite the known capabilities of AI (Schwaeke et al. 2024). AI-related studies are more focused on medium-sized and large companies and do not take into account the specifics and challenges of microbusinesses in the retail sector. (Yang and Amrollahi 2024). This gap is an obstacle when it comes to proving the measurable and tangible performance impact of AI integration in microbusinesses. As a result, there is no concrete evidence at this point to assess when and how AI integration can create or catalyze meaningful improvements in the performance of microbusinesses.

A possible explanation for this gap is that the adoption of AI might not directly or automatically impact business outcomes. But the value of AI adoption might depend more on how organizational processes and capabilities react to technological change. This relationship can be explained in terms of organizational agility, which refers to the ability of a company to adapt quickly to changes in the environment, redefine its processes, and make decisions in time. In recent studies, it has been found that organizational agility partly moderates the link between AI-related resources and organizational performance, suggesting that AI-related resources can lead to better organizational performance by increasing the responsiveness of the organization (Aldossary et al. 2026). In light of this, microbusinesses in saturated markets may need to adjust quickly to market conditions, evolving customer preferences, and business needs, which are critical in the conversion of AI-powered capabilities into improved performance.

This paper, therefore, examines the mediating effect of organizational agility between AI adoption and microbusiness performance based on the Dynamic Capabilities Theory. Specifically, it investigates the effects of AI adoption on microbusiness performance and organizational agility, the effect of organizational agility on microbusiness performance, and the mediating role of organizational agility in the AI adoption–performance relationship among microbusinesses in the UK retail sector. The study contributes to the literature by addressing the limited empirical evidence on AI adoption and performance in microbusinesses and by moving beyond a direct-effect relationship to examine organizational agility as a mechanism through which AI adoption may generate performance outcomes.

AI Adoption and Microbusiness Performance

Artificial Intelligence (AI) is the creation of computer systems that can perform tasks that require human intelligence to be done, such as visual perception, speech recognition, decision-making, and language translation (Russell and Norvig 2020). A significant factor in the business relevance of AI is its ability to handle vast amounts of data and provide real-time analysis, allowing businesses to transform data into

insights that can inform business decisions. (McAfee et al. 2012; Dogan and Gurcan 2019; Wamba et al. 2017).

For microbusinesses, AI can streamline operations, optimize decisions, and enhance customer service, among other applications (Mikalef et al. 2018; Nguyen et al. 2022; Ajiga et al. 2024). Predictive analytics, which are part of these AI applications, can help microbusinesses optimise inventory management by predicting demand trends, while AI-powered analytics can provide real-time information on financial performance and operational efficiency (Ajiga 2024; Ali 2024). Activities such as invoicing, data entry, and order processing can be simplified by AI automation, which helps microbusinesses to save resources and time (Perez 2023). Additionally, metrics that include profitability, productivity, and customer satisfaction can be used to assess business performance in micro businesses (Taouab and Issor 2019), and AI can play a role in each of these areas by optimizing inventory, cutting operational expenses, providing data-driven decision-making, and enhancing customer engagement. For instance, AI-driven inventory management systems can help minimize stockouts and overstocking, and automation can boost operational efficiency, freeing up time and resources for owners to engage in productive activities, among other benefits (Mohan 2021; Kundu et al. 2023). Such operational effectiveness translates to increased productivity and profitability, which is important in microbusinesses with limited resources.

Research on AI adoption, however, focuses largely on small and medium-sized enterprises, although microbusinesses vary significantly in size, access to resources, decision-making, and digital maturity. This means that the effects of the integration of AI technology on the performance of microbusinesses may be different than those that are reported for bigger SMEs because of the informality of processes and limited technological abilities. There is limited evidence specific to the UK retail micro business, especially in relation to measurable performance in terms of operations and business outcomes.

H1: AI adoption has a significant positive effect on microbusiness performance in UK retail.

Organizational Agility as a Mechanism

Organizational agility refers to the capacity of an organization to quickly remodel and adjust processes and react to market fluctuations. This is especially critical in microbusinesses in the retail sector, where buffers are limited, and consumer demand is subject to change. Organizational agility's relevance to AI adoption is its ability to convert technological information and capabilities into organizational responses. Organizational agility is perceived as a link between AI capability, performance, and competitiveness based on structural flexibility and participatory learning. (Chintalapati and Pandey 2022).

Dynamic Capabilities Theory (DCT) provides an appropriate theoretical basis for understanding this mechanism. DCT focuses on the ability of firms to sense opportunities, seize them, and transform or reconfigure resources in response to changing environments (Hanelt et al. 2021). In the microbusiness context, AI can support sensing through data analysis and seizing through faster responses to

consumer-related information, while organizational agility enables the business to adjust its operations to changing conditions.

Thus, the concept of organizational agility has been used as a theoretical explanation of performance outcomes arising from the use of AI by microbusinesses, as AI provides the technological capabilities, but the ability of the business to respond and reconfigure its operations may determine whether those capabilities result in improved performance.

AI Adoption and Organizational Agility

AI adoption can strengthen the ability of microbusinesses to identify market changes, process information, and respond to customer needs. AI-powered analytics provide real-time information that can help microbusiness owners make informed decisions, while predictive models allow businesses to anticipate changes in market conditions and consumer demand (Adom et al. 2022; Ali 2024). This implies that AI-based applications can support faster decision- making and operational adjustments.

In the context of Dynamic Capabilities, such AI-powered features can contribute to improving the sensing and seizing capacities of organizations. Information about the market can be provided by AI-based analytics, and automation can be utilized for faster responses to consumer-related information. Furthermore, AI systems that learn continuously from context and customer interactions contribute to the transformation of organizations (Kalthaus 2020; Sjodedin et al. 2021). This can be a significant contributor to organizational agility if AI is adopted in this manner.

This is important for UK microbusinesses in the retail sector as they are likely to have limited resources, and making quick and effective changes is important to remain competitive. While there is evidence from the literature that adopting AI can support an organization’s agility, the amount of empirical evidence in the context of microbusinesses is limited. The findings indicate that AI adoption is having a notable positive impact on the agility of organizations in UK retail micro-businesses.

H2: AI adoption has a significant positive effect on organizational agility in UK retail microbusinesses.

Organizational Agility and Business Performance

Organizational agility enables businesses to change rapidly in response to market shifts, customer needs and operational requirements. The ability to monitor a small business's performance is critical for retail microbusinesses that need to keep their eyes on performance and make quick decisions about managing limited resources and adapting to shifts in competition and demand. Profitability, productivity, and customer satisfaction are part of a retailer's performance in a micro business. (Taouab and Issor 2019). Operational efficiency is also very important as it has a direct impact on productivity and profitability by increasing output while reducing the input cost (Porter 2019; Azim 2018). The key to success for microbusinesses is partly their ability to identify and meet customers' needs quickly, while

also developing their competitive advantage through innovation in customer service and leadership cost (Jerab 2023).

Organizational agility can therefore contribute to performance by enabling microbusinesses to adjust processes, respond to market changes and make timely decisions. In an AI-enabled environment, the ability to respond to information generated through AI applications may be particularly important because technological information creates value only when it can be translated into appropriate organizational action.

H3: Organizational agility has a significant positive effect on microbusiness performance in UK retail.

Mediating Role of Organizational Agility

The preceding discussion establishes three related relationships. First, AI adoption has the potential to improve microbusiness performance through automation, improved decision-making, inventory management, and customer engagement (Mohan 2021; Kundu et al. 2023). Second, AI adoption can strengthen organizational agility by providing timely information and supporting faster responses to market and customer changes (Adom et al. 2022; Ali 2024). Third, organizational agility can contribute to performance by enabling microbusinesses to adjust their operations and respond effectively to changing market conditions.

Taken together, these relationships suggest that AI adoption may affect microbusiness performance indirectly through organizational agility. This mediation provides a stronger explanation than a simple direct-effect relationship because it considers the organizational process through which technological capabilities are translated into business outcomes. Previous research similarly identifies the limited empirical attention in the microbusiness context. Accordingly, this study proposes that organizational agility mediates the relationship between AI adoption and microbusiness performance.

H4: Organizational agility significantly mediates the relationship between AI adoption and microbusiness performance in UK retail.

Conceptual Framework

The study finds that, based on the literature reviewed, AI adoption impacts microbusiness performance directly and indirectly via organizational agility. The conceptualization of the variables for this study is presented as follows:

Independent variable = AI adoption

Dependent variable = Microbusiness Performance

Mediating variable = Organizational agility

The conceptual framework is therefore expressed as: The relationships among the study variables are illustrated in Fig. 1.

The framework is based on Dynamic Capabilities Theory, which defines how organizations or businesses leverage and restructure their resources and capabilities to respond to the environment (Teece et al. 1997; Hanelt et al. 2021).

Methods

The study utilized a quantitative, cross-sectional survey design to explore the relationships between the use of AI, organizational agility and micro business performance in the retail sector in the UK. The use of a quantitative approach was appropriate due to the objective of statistically testing the relationship between the study constructs and verifying a mediating role of organizational agility between the constructs of AI adoption and microbusiness performance. This study was conducted using a post-positivist paradigm that assumed that there is an empirical relationship which can be examined by conducting a systematic measurement, and there are limitations that can be encountered in the process of empirical measurement (Willis 2023; Musa and Aldiabat 2024).

Population and Sampling

The target population was made up of owner-managers and senior decision-makers of retail microbusiness of retail businesses in the United Kingdom. Microbusinesses were considered to be those with fewer than 10 employees, as defined by the European Commission (2003). The study particularly targeted retail companies, as AI applications are gaining traction in areas like customer service, marketing, inventory management, and business and sales decisions. The participants were obtained using purposive sampling to achieve a sample of individuals who had a level of knowledge of their company's operations and technology use. The valid responses received and analyzed statistically were 200 in numbers.

Data Collection and Measurement

The study made use of a structured questionnaire to collect data on the three constructs, namely adoption of artificial intelligence, organizational agility and the performance of microbusinesses. The OECD AI Use in Business Survey (2021) and the McKinsey Global AI (2023) were adapted as an index to measure AI adoption, while information on adoption status, scope, and level of AI integration was also incorporated. Six items adapted from Tallon and Pinsonneault (2011) were used to measure organizational agility and were modified to reflect AI-supported responsiveness, operational reconfiguration, and decision-making speed. And 12 items assessing productivity, operational efficiency, customer service, revenue, customer retention, cost reduction, inventory management, responsiveness, overall commercial performance, and competitive advantage were used to measure performance

Data Analysis

Descriptive statistics, correlation analysis, and regression-based mediation analysis were used to analyze the data in this study. The characteristics of the sample and the distribution of the study variables were summarized using descriptive statistics. To examine the internal consistency of multi-item constructs, reliability was utilized. The relationship between the use of AI adoption, organizational agility, and microbusiness performance was then examined using correlation analysis to identify both the direction and intensity of these relationships. Regression analysis was then employed to test the direct relationships specified in the hypotheses. The mediation analysis examined whether organizational agility provides an explanatory mechanism through which AI adoption is associated with microbusiness performance. Specifically, the analysis tested the relationship between AI adoption and microbusiness performance (H1), AI adoption and organizational agility (H2), and organizational agility and microbusiness performance (H3). The indirect effect of AI adoption on microbusiness performance through organizational agility was then examined to test H4. Thus, the mediation model assessed whether organizational agility serves as a mechanism through which the adoption of AI influences performance. Hypotheses were tested at a 0.05 level of significance, while the direct and indirect effects were reported in the form of regression coefficients, significance values, and confidence intervals.

Results

200 responses were received from retail microbusinesses in the UK. Eight retail categories were represented by the respondents. Fashion and apparel were the largest category (19.0%), followed by independent food and grocery (18.0%) and homeware and gifts (15.0%). As for business size, 49.5% of businesses had 2–4 employees, 37.5% had 5–9 employees, and 13.0% were sole traders. The main groups of respondents were owners or senior managers, followed by owner/founders (46.5%). Based on AI adoption, 43.0% of the businesses said that they are using AI tools currently, while 22.0% have tried AI previously but stopped using it right now. In addition, on average, 15.0% intended to implement AI within the next 12 months, and 20.0% had no plans for AI implementation. The results indicated that there is a considerable number of micro businesses in the exploratory, discontinued, or pre-adoption stage, which reflects the significance of the adoption of AI.

Reliability of the Measures

The organizational agility and microbusiness performance internal consistency of measurement was high. The Cronbach's alphas for the six organizational agility items were .901, and the 12 microbusiness performance items resulted in an alpha of .914. The values are above the .70 recommended value, which shows that there is strong internal consistency. The organizational agility measure adapted from Tallon and Pinsonneault (2011) was modified to reflect AI-supported responsiveness, operational reconfiguration, and decision-making speed as specified in the methodology.

Table 1
Reliability of the Study Measures

Construct	Items	Cronbach's α
Organizational agility	6	0.901
Microbusiness performance	12	0.914

AI adoption was represented by an adoption index rather than a conventional multi-item Likert scale. The index incorporated information concerning the status, scope, and level of AI adoption, which adapted the AI adoption module from the *OECD AI Use in Business Survey (2021); McKinsey Global AI Survey (2023)*

Correlation Analysis

The correlation analysis showed positive and statistically significant relationships among the three study variables. AI adoption was positively associated with organizational agility ($r = 0.604$, $p < .001$) and microbusiness performance ($r = 0.503$, $p < .001$). Organizational agility was also positively associated with microbusiness performance ($r = 0.585$, $p < .001$).

Table 2
Correlations Among Study Variables

Variable	Mean	SD	1	2	3
1. AI Adoption	—	—	1		
2. Organizational Agility	2.95	0.99	.604***	1	
3. Microbusiness Performance	3.04	0.80	.506***	.584***	1

***p < .001.

Hypothesis Testing

The hypotheses were tested using regression analysis. AI adoption explained **25.3%** of the variance in microbusiness performance, **$R^2 = .253$, $F(1,198) = 67.12$, $p < .001$**.

Table 3
Direct Effects

Hypothesis	Relationship	β	T	R^2	F	p	Decision
H1	AI Adoption → Microbusiness Performance	0.503	8.193	0.253	67.12	< .001	Supported
H2	AI Adoption → Organizational Agility	0.604	10.670	0.365	113.85	< .001	Supported
H3	Organizational Agility → Microbusiness Performance	0.442	6.271	0.377	59.73	< .001	Supported

**R² = .377 for the model containing AI adoption and organizational agility as predictors of performance.*

AI adoption had a significant positive effect on microbusiness performance (β = 0.503, t = 8.193, p < .001), accounting for 25.3% of the variance in performance (R^2 = 0.253). AI adoption also significantly predicted organizational agility (β = 0.604, t = 10.670, p < .001), explaining 36.5% of its variance (R^2 = 0.365). When both AI adoption and organizational agility were included in the performance model, organizational agility remained a significant positive predictor of performance (β = 0.442, t = 6.271, p < .001), while the model explained 37.7% of the variance in microbusiness performance.

Mediating Effect of Organizational Agility

The mediation analysis examined whether organizational agility provides a mechanism through which AI adoption is associated with microbusiness performance.

Table 4
Mediation Analysis

Effect	Path	β	SE	t	p	95% Bootstrap CI	Decision
Total effect	AI Adoption → Microbusiness Performance	0.503	0.061	8.193	< .001	—	Significant
Indirect effect	AI Adoption → Organizational Agility → Microbusiness Performance	0.267	0.051	—	—	[0.170, 0.367]	Significant
Direct effect	AI Adoption → Microbusiness Performance	0.236	0.071	3.343	.001	—	Significant
Mediation	AI Adoption → Organizational Agility → Microbusiness Performance	0.267	0.051	—	—	[0.170, 0.367]	Partial mediation; H4 supported

Note. *β = standardized regression coefficient; SE = standard error; CI = confidence interval. The 95% bootstrap confidence interval was based on 10,000 bootstrap samples.*

The findings indicated a significant mediation of organizational agility between the adoption of AI and microbusiness performance. Overall, the effect of the use of AI on performance was significant (β = 0.503, p < .001). The indirect effect of organizational agility was also significant (β = 0.267, 95% CI [0.170, 0.367]), as the CI did not contain zero. Moreover, the direct effect of the use of AI on microbusiness performance was still significant, even after controlling for organizational agility (β =

0.236, p = .001). These results suggest a partial mediation, which supports H4 and validates that the use of AI affects the performance of microbusinesses directly and indirectly through organizational agility.

The analysis revealed that there is a significant relationship between the integration of AI and microbusiness performance through mediation of organizational agility. In general, the integration of AI affects performance (β = 0.503, p < .001). The indirect effect of organizational agility was also notable, with a (β = 0.267, 95% CI [0.170, 0.367]), as the CI did not include a value of zero. Also, the direct effect of the integration of AI on microbusiness performance was still significant even after the inclusion of organizational agility (β = 0.236, p = .001). These findings indicate a partial mediation, consistent with Hypothesis 4 and it provides validation of the direct and indirect pathway between the integration of AI and the performance of microbusinesses through the pathway of organizational agility.

Discussion

The findings revealed that AI adoption had a positive significant relationship with microbusiness performance (β = 0.503, p< .001; R^2 = 0.253), which indicates that a higher level of AI adoption leads to a better level of performance, both operational and commercial, in the sample microbusinesses. This suggests that leveraging AI can lead to or contribute to improvements in areas such as operational efficiency, productivity, customer-related operations, and other aspects of business performance. This discovery is in alignment with the findings of previous studies that found AI to be a technology that can improve business processes, decision-making, and competitive results (Plastino and Purdy 2018; Prasanth 2023; Schwaeke et al. 2025). It also leverages empirical evidence of the performance benefits AI can deliver in the context of microbusinesses, an area typically overlooked by research that focused primarily on larger businesses (Yang and Amrollahi 2024).

Another finding from the study indicated that the correlation between AI adoption and organizational agility was very high (β = 0.604, p < .001; R^2 = 0.365). This suggests that not only did AI adoption have a positive impact on performance, but it also contributed to the ability to adapt to market fluctuations, reconfigure operations, and make informed decisions. This is in line with the Dynamic Capabilities Theory that suggests that organizations' ability to adapt to the environment is mediated by three processes: sensing, seizing, and transforming (Teece et al. 1997). Similarly, Hanelt et al. (2021) relate digital transformation to organizational change and capability development. Microbusinesses can benefit from AI-powered analytics to enhance their ability to gather customer and market data, while utilizing AI automation and decision support tools to improve decision-making and operations as they adjust.

While AI adoption was held constant, there was a significant positive relationship between organizational agility and microbusiness performance (β = 0.442, p < .001). This overall model accounted for 37.7% of the variance in performance, while the model that included the adoption of AI alone accounted for 25.3% of the variance. This contribution of organizational agility increased the explained variance by 12.4 percentage points. The finding supports the view that performance outcomes depend not only on access

to technological resources but also on the organizational ability to use those resources effectively. This is consistent with the dynamic-capabilities perspective of Teece et al. (1997), in which firms derive value from their capacity to sense opportunities, seize them and reconfigure resources. It is also consistent with the performance literature linking operational efficiency and competitive advantage to the effective use of resources and responsiveness to customer needs (Porter 2019; Jerab 2023).

The study's central finding is that organizational agility plays a significant mediating effect between the use of AI and microbusiness performance. The indirect effect was 0.267, with a 95% confidence interval of (CI [0.170, 0.367]. Because the confidence interval did not include zero, there was a significant mediation effect of organizational agility between the use of AI and performance. AI adoption was also directly associated with performance ($\beta = 0.236$, $p = .001$). The presence of both a significant direct and indirect effect indicates partial mediation. In other words, AI improves performance both on its own and by enhancing organizational agility.

Conclusion

Based on the findings of this study, it is concluded that the use of AI is positively related to the performance of the microbusiness in the UK retail sector and that organizational agility acts as a mediating link between the use of AI and the performance of the microbusiness. The results further add to the existing literature on AI and business performance, showing that the value of AI adoption is not just related to the technology itself, but also to the organizational ability to respond to market changes and/or effectively implement AI-enabled information and capabilities. This will be of significant importance to microbusinesses with limited financial, technological, and human resources (Yang and Amrollahi 2024; Schwaeke et al. 2025).

An important implication is that the value of AI should be considered in two parts: the technology itself and the capacity of the organization to deploy it. For resource-constrained microbusinesses, building the organization’s agility to quickly adapt to customer needs, market dynamics and operational requirements can be a key factor in unlocking the potential value of AI implementation.

Therefore, it is essential for microbusiness owners and business-support stakeholders to prioritize the building of organizational agility alongside the adoption of AI. Effective AI implementation should be accompanied by appropriate training, adaptive management processes and the capacity to modify business operations depending on new information. Likewise, policymakers and industry support programmes should go beyond assisting microbusinesses in accessing AI tools and instead offer practical support and guidance for integrating AI into everyday business processes. This could help promote effective and sustainable use of AI in the UK microbusiness retail sector.

Declarations

A**uthor Contribution**

The authors contributed to every aspect of the study, including conceptualization, methodology, formal analysis, and manuscript writing. Also, the authors reviewed and approved the final manuscript.

Declaration of Conflicting Interests

The authors declares that there are no conflicts of interest in relation to the research, authorship, and publication of this article.

AI use declaration

The authors declare that no AI tools were used in the preparation of this manuscript.

Ethical Statement.

Ethical principles were considered throughout the research process. Participation in the study was voluntary, and participants were informed about the purpose of the research before completing the online questionnaire. Informed consent was obtained from participants, and confidentiality and anonymity were maintained in the handling and reporting of responses. The data were used solely for academic research purposes and were handled responsibly to protect participants' privacy. The study was conducted in accordance with applicable ethical standards for research involving human participants. The protocol was approved by Technical University of Cartagena, Spain in accordance with the GDPR regulation.

Ethics Approval

The study was reviewed and approved by the Technical University of Cartagena, Spain Review Board.

Consent to Participate

Informed consent was obtained from participants involved in this study. Participation was voluntary and participants were informed their rights to withdraw from the study in accordance with the laid down research procedures.

Consent to publish

The authors confirms that he has obtained all necessary consent to publish this manuscript. The manuscript does not contain any personally identifiable information without appropriate consent.

Data Availability Statement

The datasets analyzed in this course of the study are to be made available upon request from corresponding Author.

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Figures

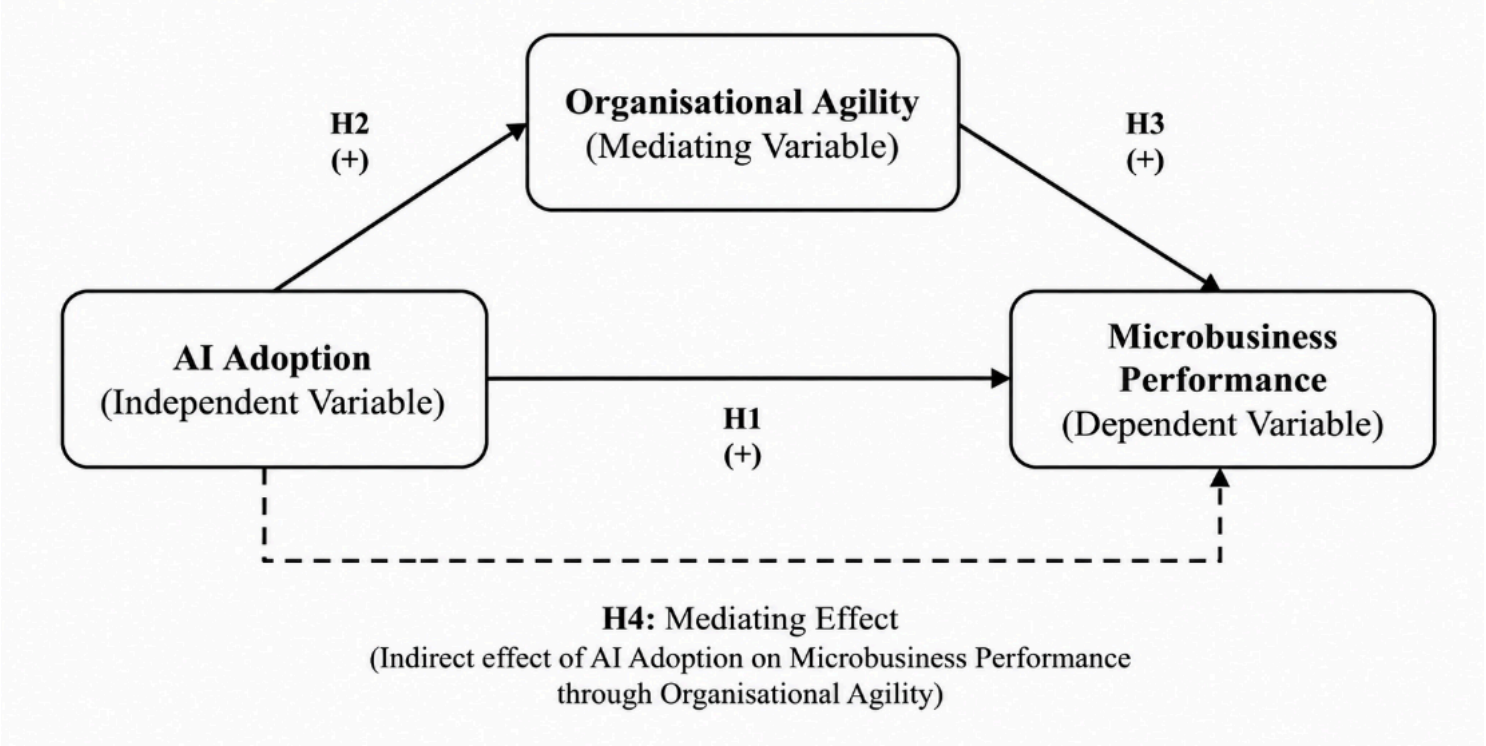

Figure 1

Conceptual framework