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The Impact of AI Attitudes and Digital Capabilities on Business Performance and Burnout

Dan-Ioan Coman

Doctoral School of Economics and Business Administration, Alexandru Ioan Cuza University of Iași, Iași, Romania.
danioancoman@gmail.com,
<https://orcid.org/0009-0000-5795-8795>

Andreea-Gabriela Filimon

Faculty of Psychology and Educational Sciences, Alexandru Ioan Cuza University of Iași, Iași, Romania.
andreeagabrielafilemon@gmail.com,
<https://orcid.org/0009-0004-6175-1462>

Adriana Manolică

Doctoral School of Economics and Business Administration, Alexandru Ioan Cuza University of Iași, Iași, Romania.
manolica@uaic.ro,
<https://orcid.org/0000-0003-1724-1516>

Abstract: *The rapid diffusion of artificial intelligence (AI) has reshaped digital transformation and organisational performance, yet the mechanisms linking entrepreneurs' AI attitudes to business outcomes remain underexplored. This study examines how digital transformation processes mediate the relationship between positive attitudes towards AI and firm performance. Specifically, it tests the sequential mediating roles of digital business orientation and digital capabilities in relation to financial and non-financial performance, while also considering entrepreneurial burnout. Data were collected through an online survey distributed via Facebook and LinkedIn and analysed using the PROCESS macro (Models 6 and 1) in a sample of 116 Romanian entrepreneurs. Results show that positive AI attitudes significantly predict digital business orientation, which strongly enhances digital capabilities; these capabilities, in turn, positively influence both performance outcomes. The findings confirm a significant serial mediation effect, suggesting that AI attitudes improve firm performance mainly by fostering digital orientation and capabilities. Burnout does not significantly moderate the link between digital capabilities and performance, although it is negatively associated with non-financial performance. The study underscores the strategic value of digital orientation and capabilities for entrepreneurial success in the AI era.*

Keywords: *artificial intelligence; digital transformation; digital business orientation; digital capabilities; entrepreneurial burnout; firm performance; entrepreneurship.*

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1. Introduction

Artificial intelligence (AI) and digital technologies are rapidly reshaping the way businesses operate, creating both new opportunities and new challenges for organisations (Oyekunle & Boohene, 2024). As companies increasingly integrate AI into their activities, they are not only improving efficiency and decision-making but also redefining how work is structured and experienced by employees (Kaggwa et al., 2024). This shift is particularly important because the adoption of AI can disrupt traditional organisational practices and generate uncertainty among employees, which may influence their engagement and commitment (Kong et al., 2021).

AI has become a key driver of organisational agility, helping firms leverage their digital capabilities and respond more effectively to external pressures (Ştefan et al., 2024). Organisations often face challenges related to employee adaptation, skills development, and talent management, as individuals must learn to work alongside new technologies (Popescu et al., 2024).

Beyond technological aspects, the success of AI adoption also depends on how it is perceived and embraced by entrepreneurs and managers. Attitudes towards AI play a crucial role in shaping the willingness to experiment with new tools and integrate them into business strategies (Troise et al., 2021; Shore et al., 2024). Positive perceptions can encourage innovation and support digital transformation efforts, while negative attitudes may slow down or limit the effective use of these technologies (Singh et al., 2026). In parallel, firms need strong digital business orientation and well-developed digital capabilities to fully benefit from AI, as these enable them to identify opportunities and translate technological potential into concrete outcomes (Truong et al., 2023; Upadhyay et al., 2021).

However, organisational outcomes are not driven by technology alone. Psychological factors also play an important role, especially in entrepreneurial settings. One such factor is burnout, which can result from prolonged exposure to high demands and pressure, potentially affecting decision-making, innovation, and strategic involvement (Delladio & Caputo, 2024). In this sense, while AI may streamline tasks and reduce workload in some cases, it may also contribute to stress and uncertainty, making its overall impact on employee well-being complex (Popescu et al., 2024).

Given these dynamics, it becomes essential to better understand how attitudes towards AI, digital business orientation, digital capabilities, business performance, and burnout interact with one another (Hatos, 2025; Liu et al., 2024). This study aims to explore these relationships by proposing a framework in which digital business orientation and digital capabilities help explain how AI attitudes translate into both financial and non-financial performance outcomes, while burnout influences the strength of these relationships (Bourezig & Bouguerri, 2024; Upadhyay et al., 2021).

Drawing on both psychological and technological perspectives, this research integrates concepts from Conservation of Resources Theory (Hobfoll, 1989; Hobfoll, 2011) and the Technology Acceptance Model (Davis et al., 1989) to examine AI-driven transformation in a more holistic manner. In this way, it contributes to the emerging literature on digital entrepreneurship by clarifying the mechanisms that shape organisational performance alongside employee wellbeing. Furthermore, it offers relevant implications for practitioners aiming to implement digital strategies without compromising workforce sustainability.

The main contribution of this study is threefold. First, it clarifies how favourable attitudes towards AI translate into firm outcomes by testing digital business orientation and digital capabilities as sequential mediators rather than assuming a simple direct effect. Second, it distinguishes between financial and non-financial performance, offering a more balanced understanding of entrepreneurial outcomes in digitally intensive contexts. Third, by incorporating burnout, the study connects the technological and strategic dimensions of AI adoption with entrepreneurs' psychological resources, thereby extending research on digital entrepreneurship beyond purely organisational or technological explanations.

2. Theoretical Framework

2.1. Artificial Intelligence Attitudes in Entrepreneurship

Entrepreneurs' attitudes towards artificial intelligence reflect how they evaluate the usefulness, ease of use, and potential impact of AI technologies for their businesses (Duong, 2024). Positive attitudes may encourage entrepreneurs to integrate AI into business processes, support innovation, improve decision-making, and identify new digital opportunities (Farayola et al., 2023; Giuggioli & Pellegrini, 2023; Moşteanu, 2025). In this sense, AI is not only a technical tool but also a strategic resource that can support long-term growth and competitiveness (Mariani et al., 2023).

At the same time, AI is increasingly valued for its ability to automate repetitive tasks and support managerial decision-making, which can significantly influence how new ventures are run (Truong et al., 2023). However, not all entrepreneurs view AI in a positive light. Concerns about complexity, high costs, lack of skills, or even job displacement can lead to hesitation or resistance (Kong et al., 2021; Popescu et al., 2024). In uncertain environments, such reservations may prevent firms from taking advantage of digital opportunities, keeping them reliant on more traditional ways of operating (Ştefan et al., 2024).

In contrast, entrepreneurs who embrace AI tend to make better use of its capabilities, such as data analysis, pattern recognition, and forecasting. This can strengthen key entrepreneurial behaviors, including proactivity, innovation, and a greater willingness to take risks, ultimately supporting business growth and adaptability in a rapidly changing environment (Farayola et al., 2023; Giuggioli & Pellegrini, 2023; Shore et al., 2024).

2.2. Digital Business Orientation

Digital business orientation refers to the extent to which a firm strategically integrates digital technologies into its core activities, products, processes, and customer interactions (Troise et al., 2021). Rather than using digital tools in isolation, digitally oriented firms embed them into their business strategy to improve efficiency, innovation, adaptability, and value creation (Yaqub & Alsabban, 2023; Adıgüzel, 2024). This orientation supports the identification and exploitation of digital opportunities and provides a foundation for developing stronger digital capabilities.

Therefore, digital business orientation is closely linked to the development of digital capabilities, which are needed to translate digital strategies into tangible organisational outcomes (Amoako et al., 2021).

2.3. Digital Capabilities and Digital Transformation

Digital capabilities refer to a firm's ability to acquire, implement, and use digital technologies to achieve strategic goals (Proksch et al., 2024). Beyond technical infrastructure, these capabilities include employees' digital skills, organisational readiness, and the capacity to transform digital investments into innovation and improved business processes (Chaudhuri et al., 2021; Wang et al., 2022).

Firms with strong digital capabilities are better able to sense market changes, experiment with new technologies, reconfigure resources, and respond to uncertain environments. In this way, digital capabilities help organisations improve operational efficiency, support innovation, and maintain performance and resilience in dynamic contexts (Ciampi et al., 2020; Ahmad et al., 2022; Fischer et al., 2020).

In the context of this study, digital transformation is understood as the broader organisational process through which firms integrate digital technologies into their strategies, operations, and value-creation activities (Yaqub & Alsabban, 2023). While digital capabilities describe what firms are able to do with digital technologies, digital transformation reflects the strategic and organisational changes that emerge from using these capabilities. Therefore, digital capabilities can be seen as a key foundation of digital transformation, because they enable firms to

convert digital tools and investments into improved processes, innovation, adaptability, and performance (Escoz Barragan & Becker, 2025).

2.4. Business Performance: Financial and Non-financial Outcomes

Business performance is widely recognised in entrepreneurship research as a multidimensional construct that captures how effectively a firm achieves its strategic objectives through both financial and non-financial outcomes. Early contributions by Dess and Robinson (1984) emphasised the usefulness of subjective self-reported measures, particularly in situations where objective financial data are limited or difficult to obtain. Building on this perspective, Richard et al. (2009) highlighted the importance of adopting a balanced approach to performance measurement, combining objective and subjective indicators while taking into account contextual and stakeholder-specific factors.

In line with this, business performance is typically assessed using a combination of financial and non-financial indicators. Financial performance may include revenue or sales growth, profitability, return on investment, cash flow, return on assets, employment growth, and venture survival, while non-financial performance may include customer satisfaction, market share, operational efficiency, innovation outputs, adaptability, and responsiveness to market changes (Rahiminezhad Galankashi & Mokhatab Rafiei, 2022).

Strong digital capabilities and effective digital transformation processes, characterised by agility, innovation, and the ability to reconfigure resources, play a key role in enhancing both financial and non-financial outcomes (Troise et al., 2021; Baharuddin & Omar, 2024). Moreover, innovation, as a critical non-financial dimension of performance, is strongly supported by digital capabilities (Nasiri et al., 2020).

2.5. Burnout

Burnout is characterised by emotional exhaustion, cynicism, and a reduced sense of personal accomplishment (Maslach, 1998; Maslach et al., 2001). In entrepreneurial settings, where individuals often face uncertainty, pressure, and heavy workloads, these symptoms can accumulate over time and affect both wellbeing and performance (Müller, 2026). As a result, burnout can reduce entrepreneurs' ability to think strategically, stay creative, and make effective decisions, ultimately impacting overall business performance (Panutur et al., 2025).

On the one hand, digital technologies and AI can improve efficiency, innovation, and competitiveness (Ali et al., 2024). On the other hand, the pressure to continuously adapt and perform can increase stress and lead to burnout, potentially offsetting some of these benefits (D'Angelo et al., 2024).

Given this context, it is important to better understand how attitudes towards artificial intelligence, together with digital capabilities, shape both business performance and burnout (Amoako et al., 2021; Ebuka et al., 2023; Wang et al., 2022; Baharuddin & Omar, 2024; Troise et al., 2021).

3. Conceptual Model and Hypothesis Development

Based on the theoretical relationships described above, this study proposes a conceptual model linking entrepreneurial attitudes towards AI, digital business orientation, digital capabilities, entrepreneurial burnout, and business performance.

Sequential Mediation

Positive attitudes towards AI may encourage entrepreneurs to adopt a stronger digital business orientation, which promotes openness to digital innovation and motivates firms to pursue digital transformation initiatives. Digital business orientation, in turn, facilitates the development of digital capabilities that allow firms to effectively implement and leverage digital technologies.

Through enhanced operational efficiency, data-driven decision-making, and innovation, these capabilities ultimately contribute to improved business performance. Consequently, digital

business orientation and digital capabilities may operate as sequential mediators linking entrepreneurial AI attitudes to business performance.

H1: Digital business orientation and digital capabilities sequentially mediate the relationship between positive attitudes towards artificial intelligence and (a) financial performance and (b) non-financial performance.

Moderating Role of Entrepreneurial Burnout

Although digital capabilities provide firms with the resources necessary to leverage digital technologies, the extent to which these capabilities translate into improved performance may depend on the psychological condition of the entrepreneur.

Entrepreneurs experiencing burnout may lack the cognitive and motivational resources necessary to effectively utilise digital technologies and implement digital strategies. Consequently, the positive impact of digital capabilities on business performance may be weakened under conditions of high entrepreneurial burnout.

H2: Burnout moderates the relationship between digital capabilities and (a) financial performance and (b) non-financial performance, such that the relationship becomes weaker when burnout levels are high.

4. Method

The aim of this study is to investigate how positive attitudes towards artificial intelligence contribute to firm performance by examining the underlying digital transformation mechanisms and potential boundary conditions. Specifically, the study explores whether digital business orientation and digital capabilities sequentially mediate the relationship between attitudes towards artificial intelligence and both financial and non-financial firm performance. In addition, the study examines whether entrepreneurial burnout moderates the relationship between digital capabilities and business performance, potentially weakening the positive effects of digital capabilities when burnout levels are high.

5. Participants and Procedures

Data were collected through an online questionnaire distributed via social media platforms, including Facebook and LinkedIn. A non-probability convenience and purposive sampling strategy was used, targeting Romanian entrepreneurs and business owners who were familiar with the strategic and operational activities of their firms. Participation was voluntary and respondents were included if they reported entrepreneurial or managerial involvement in a business context and were able to evaluate the firm's digital business orientation, digital capabilities, and performance.

The final sample consisted of 116 respondents. Although this sample is appropriate for an exploratory survey-based study using mediation and moderation analyses, its size and non-random nature should be considered when interpreting the generalisability of the findings. Regarding gender distribution, the majority of participants were male (69.8%, $n = 81$), while 30.2% ($n = 35$) were female. Regarding educational attainment, 41.4% ($n = 48$) of respondents held a master's degree, 36.2% ($n = 42$) had a bachelor's degree, and 22.4% ($n = 26$) had a doctoral degree. Entrepreneurial experience varied across the sample. Specifically, 7.8% ($n = 9$) reported less than one year of experience, 23.3% ($n = 27$) reported between 1 and 3 years, 22.4% ($n = 26$) reported between 4 and 7 years, 19.8% ($n = 23$) reported between 8 and 15 years, and 26.7% ($n = 31$) reported more than 15 years of entrepreneurial experience. With respect to the type of business activity, 51.7% ($n = 60$) operated primarily in B2C markets, 38.8% ($n = 45$) in B2B markets, and 9.5% ($n = 11$) reported operating in a mixed B2B/B2C environment. Finally, the frequency of artificial intelligence use varied among respondents: 13.8% ($n = 16$) reported very low usage, 19.8% ($n = 23$) low usage, 30.2% ($n = 35$) moderate usage, 20.7% ($n = 24$) high usage, and 15.5% ($n = 18$) very high usage of AI technologies.

6. Measures

Burnout was measured using the Oldenburg Burnout Inventory (Demerouti et al., 2003). The OLBI is a widely used instrument designed to assess burnout through two core dimensions: exhaustion and disengagement from work. The scale consists of 16 items rated on a four-point Likert scale ranging from 1 = strongly disagree to 4 = strongly agree. The exhaustion dimension reflects feelings of physical, emotional, and cognitive fatigue caused by work demands, while the disengagement dimension captures psychological distancing from work and negative attitudes towards work tasks. Example items include statements such as *“During my work, I often feel emotionally drained”* and *“It happens more and more often that I talk about my work in a negative way.”* The OLBI has been widely applied in organisational and occupational research and demonstrates strong reliability and construct validity across different work contexts (Demerouti et al., 2003).

Entrepreneurs' attitudes towards artificial intelligence were measured using the Artificial Intelligence Attitude Scale (AIAS-4) developed by Grassini (2023) and recently validated by Satıcı et al. (2025). The scale consists of four items designed to assess individuals' beliefs and perceptions regarding the usefulness and potential impact of AI technologies in professional and societal contexts. Respondents evaluated each statement using a Likert-type scale, where higher scores indicate more positive attitudes towards AI. Example items include statements such as *“I believe that AI will improve my work”* and *“I think AI technology is positive for humanity.”* The scale has demonstrated a unidimensional structure with strong psychometric properties, including high factor loadings and satisfactory reliability levels. Previous studies have shown that attitudes towards AI reflect individuals' cognitive, emotional, and behavioural evaluations of intelligent technologies and play a significant role in shaping technology adoption and acceptance processes (Grassini, 2023; Satıcı et al., 2025).

Business performance was measured using a multidimensional scale capturing both financial and non-financial aspects of firm performance (see Appendix 1). The scale consisted of eight items, including four indicators of financial performance (sales growth, operating profits, annual profits, and return on assets) and four indicators of non-financial performance (market share, customer satisfaction, employee satisfaction, and success in developing new products or services). Although operating profits and annual profits are closely related indicators, both were retained because they capture different aspects of financial performance: operating profits reflect profitability from core business activities, whereas annual profits provide a broader overall assessment of yearly financial outcomes. Respondents rated each item using a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. This approach is consistent with prior research suggesting that firm performance should be assessed through both financial and operational indicators (Dess & Robinson, 1984; Venkatraman & Ramanujam, 1986), and with more recent studies integrating these dimensions when evaluating organisational performance (Richard et al., 2009; Zhang et al., 2023).

Digital business orientation was measured using a four-item scale adapted from Soe Moe Khin and Tin Ching Ho (2019). The wording of the items followed the operationalisation used in Guthrie et al. (2025). Respondents indicated their level of agreement with each statement using a seven-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Higher scores indicate a stronger strategic orientation towards leveraging digital technologies for innovation and business development.

Digital capabilities were measured using a five-item scale adapted from Soe Moe Khin and Tin Ching Ho (2019), following the operationalisation used in Guthrie et al. (2025). Respondents were asked to evaluate their organisation's digital capabilities relative to other firms in their industry using a seven-point Likert scale, ranging from 1 (poorer than most firms in the industry) to 7 (superior to most firms in the industry). Higher scores indicate stronger organisational capabilities to acquire, deploy, and leverage digital technologies to support innovation and business processes.

To account for the potential pressure generated by rapid technological change, a set of items capturing entrepreneurs' perceived strain related to technological adaptation was included (see

Appendix 2). These items reflect feelings of detachment from the business and reduced perceived effectiveness in managing technological demands. The scale was developed for the purpose of this study based on concepts from the burnout and technostress literature. Respondents indicated their level of agreement using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). Higher scores indicate greater perceived strain associated with technological change and digital transformation. Because this measure was developed specifically for the present study, its results should be interpreted cautiously. Internal consistency was assessed in the current sample, but future studies should further validate the scale using larger samples and additional procedures such as exploratory and confirmatory factor analyses.

7. Data Analysis

Descriptive statistics and Pearson correlations were computed using SPSS. Mediation and moderation analyses were conducted using the PROCESS macro for SPSS (version 4.2; Hayes, 2022). Model 6 was used to test the proposed serial mediation effects, and Model 1 was used to test the moderation effects. Significant interactions, when present, would be further examined using simple slope analyses at -1 SD, the mean, and $+1$ SD of the moderator.

Because the study is based on cross-sectional, self-reported survey data, the analyses should be interpreted as evidence of statistical associations that are consistent with the proposed theoretical model rather than as definitive proof of causal relationships.

8. Results

8.1. Preliminary analyses

Table 1. Descriptive statistics, reliability, and correlations

Variable	α	M	SD	1	2	3	4	5	6	7
1. Financial performance	.91	13.01	3.98							
2. Non-financial performance	.87	14.41	3.67	.827**						
3. Digital business orientation	.95	17.92	6.72	.621**	.705**					
4. Digital capabilities	.96	22.78	8.24	.681**	.767**	.882**				
5. AI attitudes	.93	27.07	8.69	.664**	.713**	.574**	.570**			
6. Technology entrepreneurial strain	.93	22.57	8.96	-.172	-.179	-.167	-.135	-.202*		
7. Burnout	.82	36.59	7.69	-.448**	-.578**	-.429**	-.503**	-.386**	.616**	

The correlation analysis reveals several statistically significant relationships consistent with the theoretical expectations. Financial and non-financial firm performance are strongly and positively correlated ($r = .827$, $p < .001$), indicating that organisations reporting higher financial outcomes also tend to experience stronger non-financial performance outcomes. Both digital business orientation and digital capabilities show strong positive correlations with firm performance indicators. Digital business orientation is positively associated with financial performance ($r = .621$, $p < .001$) and non-financial performance ($r = .705$, $p < .001$), while digital capabilities exhibit even stronger relationships with financial ($r = .681$, $p < .001$) and non-financial performance ($r = .767$, $p < .001$).

Additionally, digital business orientation and digital capabilities are highly correlated ($r = .882, p < .001$), suggesting that organisations with a stronger strategic digital orientation tend to develop more advanced digital capabilities. Positive attitudes towards artificial intelligence are also positively related to both digital transformation variables and performance outcomes, including financial performance ($r = .664, p < .001$), non-financial performance ($r = .713, p < .001$), digital business orientation ($r = .574, p < .001$), and digital capabilities ($r = .570, p < .001$). These findings suggest that positive perceptions of AI may play an important role in facilitating digital transformation and improving organisational performance.

In contrast, burnout shows significant negative correlations with both performance and digital transformation variables. Burnout is negatively associated with financial performance ($r = -.448, p < .001$), non-financial performance ($r = -.578, p < .001$), digital business orientation ($r = -.429, p < .001$), digital capabilities ($r = -.503, p < .001$), and AI attitudes ($r = -.386, p < .001$). This indicates that higher levels of burnout are linked to lower organisational performance and weaker digital transformation processes.

Finally, technology-related entrepreneurial strain was positively associated with burnout ($r = .616, p < .001$), indicating that entrepreneurs who reported greater strain related to technological adaptation also tended to report higher burnout. Technology-related entrepreneurial strain was also negatively associated with AI attitudes ($r = -.202, p < .05$), suggesting that greater perceived pressure from technological change may be linked to less favourable attitudes towards artificial intelligence. However, its correlations with financial performance, non-financial performance, digital business orientation, and digital capabilities were weak and non-significant, indicating that this construct was more closely related to burnout than to the main performance and digital transformation variables.

8.2. Testing Hypothesis

H1a: Digital business orientation and digital capabilities sequentially mediate the relationship between positive attitudes towards artificial intelligence and firm financial performance.

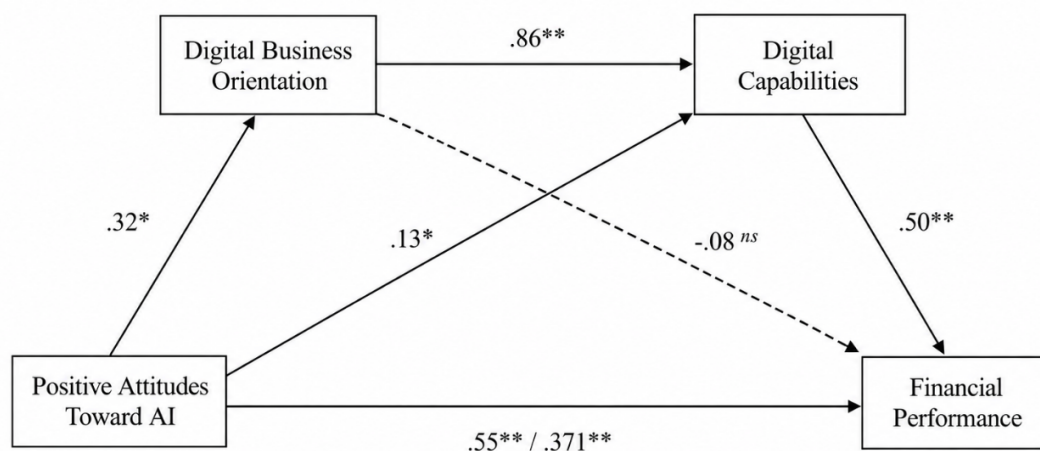


Figure 1. Serial mediation model illustrating the roles of digital business orientation and digital capabilities in the relationship between positive attitudes towards artificial intelligence and firm financial performance.

To test the first hypothesis, a serial mediation analysis was conducted using Model 6 of the IBM SPSS PROCESS macro (Hayes, 2022). In this model, positive attitudes towards artificial intelligence were specified as the independent variable, financial performance as the dependent variable, and digital business orientation and digital capabilities as sequential mediators. The

analysis also controlled for gender, age, education level, work experience, technology-related entrepreneurial strain, type of business activity, frequency of AI use, and technological level.

The results indicated that positive attitudes towards artificial intelligence significantly predicted digital business orientation, and the model was statistically significant ($R = .637$, $R^2 = .406$, $F(8,107) = 9.13$, $p < .001$). Positive attitudes towards artificial intelligence had a positive and significant effect on digital business orientation ($\beta = .325$, $p = .002$).

In the second stage of the model, digital capabilities were predicted by both positive attitudes towards artificial intelligence and digital business orientation. The model was statistically significant ($R = .902$, $R^2 = .813$, $F(9,106) = 51.34$, $p < .001$). Positive attitudes towards artificial intelligence had a positive effect on digital capabilities ($\beta = .132$, $p = .035$), while digital business orientation strongly predicted digital capabilities ($\beta = .867$, $p < .001$).

In the final model predicting financial performance, 63.5% of the variance in performance was explained, and the model was statistically significant ($R = .797$, $R^2 = .635$, $F(10,105) = 18.23$, $p < .001$). Digital capabilities had a strong positive and significant effect on financial performance ($\beta = .510$, $p < .001$), whereas digital business orientation did not have a significant direct effect on financial performance ($\beta = -.082$, $p = .564$).

The total effect of positive attitudes towards artificial intelligence on financial performance was positive and statistically significant ($\beta = .555$, $p < .001$). After including the mediators, the direct effect decreased but remained significant ($\beta = .371$, $p < .001$), indicating partial mediation.

Bootstrapping results indicated that the total indirect effect was significant ($\beta = 0.084$, $BootSE = 0.027$, 95% CI $[0.030, 0.138]$). When examining the specific indirect pathways, only the serial mediation effect proved to be significant. Specifically, positive attitudes toward artificial intelligence were associated with stronger digital business orientation, which in turn was associated with stronger digital capabilities and higher financial performance through a significant serial indirect effect ($B = 0.066$, $BootSE = 0.030$, 95% CI $[0.015, 0.133]$).

The indirect effects through digital business orientation alone ($\beta = -0.012$, $BootSE = 0.023$, 95% CI $[-0.062, 0.033]$) and digital capabilities alone ($\beta = 0.031$, $BootSE = 0.022$, 95% CI $[-0.013, 0.073]$) were not significant, as their confidence intervals included zero. Therefore, the direct path from digital business orientation to financial performance is marked as non-significant in Figure 1.

H1b: Digital business orientation and digital capabilities sequentially mediate the relationship between positive attitudes towards artificial intelligence and firm non-financial performance.

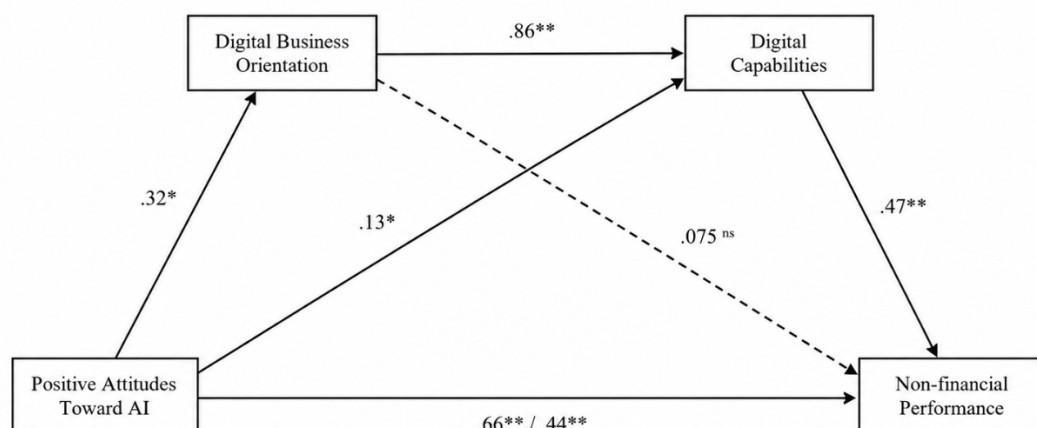


Figure 2. Serial mediation model illustrating the roles of digital business orientation and digital capabilities in the relationship between positive attitudes towards artificial intelligence and firm non-financial performance.

To examine the relationship between positive attitudes towards artificial intelligence and non-financial firm performance, a serial mediation analysis was conducted using Model 6 of the IBM SPSS PROCESS macro (Hayes, 2022). In this model, attitudes towards artificial intelligence were specified as the independent variable, non-financial performance as the dependent variable, and digital business orientation and digital capabilities as sequential mediators. The analysis also controlled for gender, age, education level, work experience, technology-related entrepreneurial strain, type of business activity, frequency of AI use, and technological level.

As in the financial performance model, positive attitudes towards AI significantly predicted digital business orientation, and digital business orientation strongly predicted digital capabilities. The final model predicting non-financial performance was statistically significant and explained 73.1% of the variance in non-financial performance ($R = .855$, $R^2 = .731$, $F(10,105) = 28.50$, $p < .001$).

The total effect of positive attitudes towards artificial intelligence on non-financial performance was positive and statistically significant ($\beta = .668$, $p < .001$). After introducing the mediators, the direct effect remained significant, although smaller ($\beta = .445$, $p < .001$), indicating partial mediation.

Bootstrapping results showed that the total indirect effect was significant ($\beta = .094$, $BootSE = .031$, 95% CI [0.038, 0.160]). When examining the specific indirect pathways, only the serial mediation effect was significant. In particular, positive attitudes towards artificial intelligence were associated with stronger digital business orientation, which in turn was associated with stronger digital capabilities and with higher non-financial performance through a significant serial indirect effect ($\beta = .057$, $BootSE = .027$, 95% CI [0.014, 0.120]).

The indirect effects through Digital Business Orientation alone ($\beta = .010$, $BootSE = 0.021$, 95% CI [-0.026, 0.061]) and Digital Capabilities alone ($\beta = 0.027$, $BootSE = 0.019$, 95% CI [-0.012, 0.062]) were not significant, as the confidence intervals included zero.

H2a: Burnout moderates the relationship between digital capabilities and financial performance, such that the relationship becomes weaker when burnout levels are high.

To examine whether burnout moderates the relationship between digital capabilities and financial performance, a moderation analysis was conducted using Model 1 of the IBM SPSS PROCESS macro (Hayes, 2022). Prior to the analysis, the variables were standardised (Z-scores) to facilitate interpretation and reduce potential multicollinearity in the interaction term. In this model, digital capabilities were specified as the independent variable, financial performance as the dependent variable, and burnout as the moderator. The analysis also controlled for gender, age, education level, work experience, technology-related entrepreneurial strain, type of business activity, frequency of AI use, and technological level.

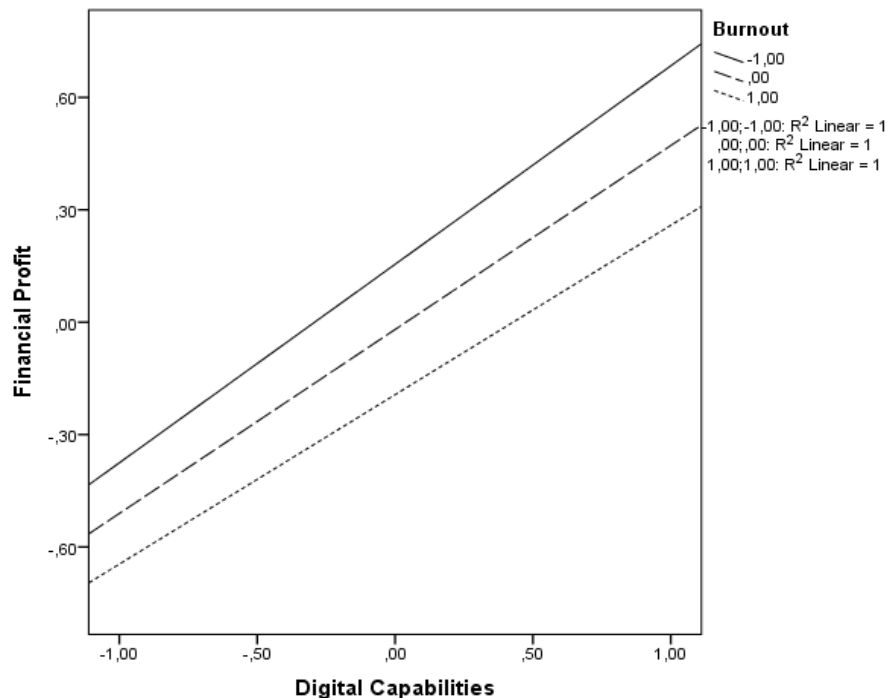


Figure 3. Moderation model illustrating the role of burnout in the relationship between digital capabilities and financial performance.

The overall model was statistically significant and explained 58.4% of the variance in financial performance ($R = 0.764$, $R^2 = 0.584$, $F(10,105) = 14.73$, $p < .001$). Digital capabilities had a positive and significant effect on financial performance ($\beta = 0.491$, $SE = 0.086$, $t = 5.71$, $p < .001$), indicating that higher levels of digital capabilities are associated with higher financial performance. Burnout showed a negative but non-significant effect on financial performance ($\beta = -0.174$, $SE = 0.101$, $t = -1.73$, $p = .087$).

The interaction term between digital capabilities and burnout was not statistically significant ($\beta = -0.039$, $SE = 0.068$, $t = -0.57$, $p = .571$). The test of the highest-order interaction confirmed that the moderation effect was not significant ($\Delta R^2 = 0.001$, $F(1,105) = 0.32$, $p = .571$).

These results indicate that burnout does not significantly moderate the relationship between digital capabilities and financial performance. In other words, the positive effect of digital capabilities on financial performance appears to be relatively stable across different levels of burnout. Among the control variables, gender showed a significant positive effect on financial performance ($\beta = 0.343$, $SE = 0.153$, $t = 2.24$, $p = .027$), while the other control variables were not statistically significant. Since neither interaction term reached statistical significance, simple slope analyses were not performed.

H2b: Burnout moderates the relationship between digital capabilities and non-financial performance, such that the relationship becomes weaker when burnout levels are high.

To examine whether burnout moderates the relationship between digital capabilities and non-financial performance, a moderation analysis was conducted using Model 1 of the IBM SPSS PROCESS macro (Hayes, 2022). Prior to the analysis, the variables were standardised (Z-scores) to facilitate interpretation and reduce potential multicollinearity in the interaction term. In this model, digital capabilities were specified as the independent variable, non-financial performance as the dependent variable, and burnout as the moderator. The analysis also controlled for gender, age, education level, work experience, technology-related entrepreneurial strain, type of business activity, frequency of AI use, and technological level.

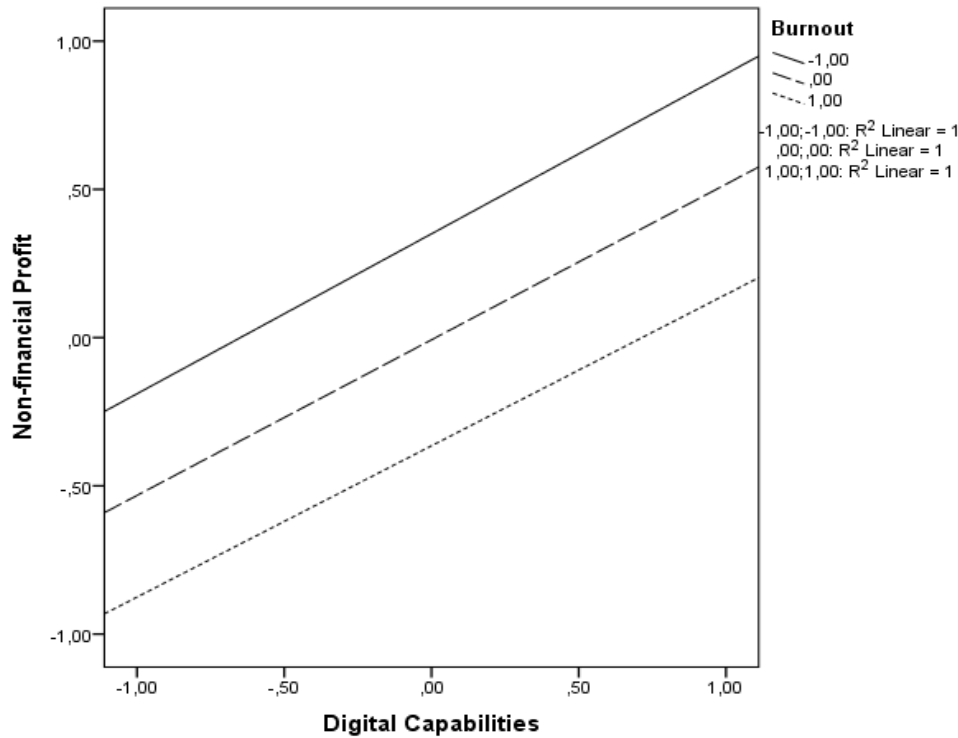


Figure 4. Moderation model illustrating the role of burnout in the relationship between digital capabilities and non-financial performance.

The overall regression model was statistically significant and explained 69.2% of the variance in non-financial performance ($R = 0.832$, $R^2 = 0.692$, $F(10,105) = 23.60$, $p < .001$).

Digital capabilities had a positive and statistically significant effect on non-financial performance ($\beta = 0.525$, $SE = 0.074$, $t = 7.10$, $p < .001$), indicating that higher levels of digital capabilities are associated with higher levels of non-financial organisational performance. Burnout showed a significant negative effect on non-financial performance ($\beta = -0.358$, $SE = 0.087$, $t = -4.13$, $p < .001$), suggesting that higher levels of burnout are associated with lower non-financial performance outcomes.

However, the interaction between digital capabilities and burnout was not statistically significant ($\beta = -0.015$, $SE = 0.059$, $t = -0.25$, $p = .805$). The test of the highest-order interaction confirmed that the moderation effect was not significant ($\Delta R^2 = 0.0002$, $F(1,105) = 0.06$, $p = .805$).

Among the control variables, age showed a small but statistically significant negative effect on non-financial performance ($\beta = -0.165$, $SE = 0.082$, $t = -2.01$, $p = .048$), whereas the remaining control variables were not statistically significant. Since neither interaction term reached statistical significance, simple slope analyses were not performed.

Table 2. Summary of Hypothesis Testing

Hypothesis	Expected relationship	Result
H1a	AI attitudes - digital business orientation - digital capabilities - financial performance	Supported
H1b	AI attitudes - digital business orientation - digital capabilities - non-financial performance	Supported
H2a	Burnout moderates the digital capabilities-financial performance relationship	Not supported
H2b	Burnout moderates the digital capabilities-non-financial performance relationship	Not supported

Note. Although H2a and H2b were not supported, burnout showed a significant negative association with non-financial performance.

As shown in Table 2, the mediation hypotheses were supported, whereas the moderation hypotheses were not supported. Therefore, the interpretation of burnout focuses mainly on its direct negative association with non-financial performance rather than on its moderating role.

9. Discussion

The findings of the present study provide strong empirical support for hypotheses H1a and H1b, showing that positive attitudes towards artificial intelligence indirectly influence both financial and non-financial firm performance through the sequential mediation of digital business orientation and digital capabilities. Rather than translating directly into improved performance, entrepreneurs' positive perceptions of AI appear to be associated with a strategic process in which favourable attitudes towards AI encourage the development of a digital business orientation, a proactive strategic commitment to digital technologies. This orientation then serves as a foundation for building digital capabilities, which ultimately translate into improved organisational outcomes.

These findings highlight the importance of adopting a strategic perspective on digital transformation. Positive attitudes towards AI appear to represent an important starting point, but their performance benefits emerge mainly when entrepreneurs develop a clear digital business orientation and strong digital capabilities. From a theoretical perspective, this result supports digital transformation and dynamic capabilities perspectives, which suggest that managerial mindsets and strategic orientations precede the development of organisational capabilities and subsequent performance improvements (Hanelt et al., 2021; Dubey et al., 2019; Pinski et al., 2024).

In contrast, hypotheses H2a and H2b were not supported, as burnout did not moderate the relationship between digital capabilities and either financial or non-financial firm performance. Nevertheless, burnout showed a significant negative direct association with non-financial performance. This suggests that although entrepreneurial burnout can be independently associated with weaker aspects of organisational functioning, it does not substantially weaken the positive relationship between digital capabilities and firm performance (Troise et al., 2021; Wang, 2022). One possible explanation is that digital capabilities, once established, function as structural organisational assets embedded in processes, technologies, and routines (Firmansyah et al., 2023). As such, their performance-enhancing effects may remain relatively stable even when entrepreneurs experience psychological strain or fatigue.

This result suggests that burnout may be more appropriately understood as an independent psychological risk factor than as a moderator in the present model. In other words, entrepreneurs experiencing higher burnout may report weaker non-financial outcomes, such as employee satisfaction, customer satisfaction, innovation, or market responsiveness, but this does not necessarily mean that burnout changes the extent to which digital capabilities support performance. A possible explanation is that digital capabilities are embedded in organisational routines, systems, and skills, whereas burnout primarily reflects the entrepreneur's individual psychological state. Future research could examine alternative mechanisms, such as whether burnout mediates the relationship between digital transformation pressure and wellbeing, or whether it moderates earlier stages of digital adoption rather than the link between established capabilities and performance.

This finding may also indicate that the influence of digital capabilities on performance is sufficiently robust to persist despite temporary fluctuations in entrepreneurial wellbeing (Drydakis, 2022). Alternatively, burnout may affect other aspects of entrepreneurial activity, such as strategic decision-making, innovation behaviour, or leadership effectiveness, rather than directly interfering with the operational use of digital technologies. Previous research has similarly highlighted the importance of digital capabilities for organisational resilience and performance, particularly during periods of crisis or environmental turbulence (Bürgel et al., 2023; Lee et al., 2023). In this sense, the present findings suggest that the benefits associated with digital capabilities may extend beyond crisis contexts and continue to support firm performance under more stable conditions.

Overall, these findings suggest that digital capabilities may operate as relatively stable organisational resources. Once embedded in routines, systems, and skills, their contribution to firm performance may remain less dependent on temporary variations in entrepreneurs' psychological states. However, burnout remains relevant because it may affect other entrepreneurial outcomes, such as leadership effectiveness, innovation behaviour, employee satisfaction, and customer responsiveness.

10. Conclusions and Limitations

Despite these insights, the study is subject to several limitations. First, the cross-sectional nature of the research design limits the ability to draw definitive causal conclusions regarding the relationships among the examined variables. The results should therefore be interpreted as associations that are theoretically consistent with the proposed model, rather than as evidence that AI attitudes directly cause later changes in digital capabilities or performance. Future research employing longitudinal designs could provide a deeper understanding of how digital capabilities, entrepreneurial attitudes towards AI, and burnout evolve over time and jointly influence firm performance. Second, the study relies on self-reported data, including entrepreneurs' subjective assessments of financial and non-financial performance measured through Likert-scale items rather than objective financial indicators. This may increase the risk of common method bias and social desirability bias. Future studies could address this limitation by incorporating multi-source or multi-wave research designs. Additionally, incorporating objective indicators of business performance, such as revenue growth, profitability ratios, or market share, would provide a more comprehensive assessment of organisational outcomes. Third, the sample included 116 Romanian entrepreneurs recruited through social media platforms, which limits the generalisability of the findings to other national, institutional, and sectoral contexts. Future research should replicate the model using larger and more diverse samples across industries and countries. Fourth, the measure of technology-related entrepreneurial strain was developed for this study; although it showed satisfactory internal consistency, additional validation is needed before stronger conclusions can be drawn from this construct.

The findings highlight the importance of entrepreneurs' attitudes towards artificial intelligence as a catalyst for digital transformation within firms. Positive attitudes towards AI appear to be associated with the development of a digital business orientation, which is subsequently associated with stronger digital capabilities. These capabilities, in turn, play an evident role in enhancing both financial and non-financial performance outcomes. In this sense, the results suggest that the benefits of AI-related attitudes do not emerge directly but operate through a strategic and capability-based pathway, reinforcing the importance of aligning technological openness with organisational digital development.

At the same time, the results show that burnout did not significantly moderate the relationship between digital capabilities and firm performance. Therefore, H2a and H2b were not supported. However, burnout showed a significant negative association with non-financial performance. This suggests that, although burnout did not function as a boundary condition in the present model, it remains relevant as an individual-level psychological factor associated with weaker non-financial organisational outcomes.

This finding suggests that while entrepreneurial wellbeing remains an important factor influencing organisational functioning, the performance benefits associated with digital capabilities appear to be relatively stable and resilient to variations in individual psychological states. Once digital capabilities are embedded within organisational processes and routines, they may function as structural assets that sustain performance even in the presence of entrepreneurial strain.

Overall, this study underscores the strategic importance of developing a strong digital business orientation and investing in digital capabilities as key drivers of entrepreneurial performance in the age of artificial intelligence. By highlighting the mechanisms linking AI-related attitudes with organisational outcomes, the findings offer valuable insights for entrepreneurs,

managers, and policymakers seeking to foster digital transformation and long-term business success in increasingly technology-driven environments.

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Appendix 1

Financial performance

Our company has experienced strong sales growth in recent years.

Our company has achieved high operating profits.

Our company has achieved strong overall annual profits.

Our company has achieved a high return on assets.

Non-financial Performance

Our company has achieved a high market share.

Our company has high customer satisfaction.

Our company has high employee satisfaction.

Our company successfully develops new products or services.

Appendix 2

Entrepreneurial Detachment

Sometimes I feel increasingly detached from my business due to rapid technological changes.

There are moments when the pressure to adopt new technologies makes entrepreneurial work less satisfying.

Recently, I have felt less emotionally involved in my business activities because of constant technological changes.

Reduced Entrepreneurial Effectiveness

Sometimes I feel that I am no longer as effective in managing my business in the context of new technologies.

I find it increasingly difficult to manage the technological demands of my business.

Sometimes I feel that I cannot keep up with the pace of technological change in the business environment.

AI Use

This study utilised several artificial intelligence-based tools, including ChatGPT Plus, Claude, Perplexity AI, Jenni AI, Gemini, and Grammarly to support the refinement of English language expression, text editing, and the identification of relevant academic sources. These tools were used strictly as supportive instruments to enhance clarity, coherence, and linguistic quality. All generated or suggested content was critically reviewed, validated, and, where necessary, revised by the authors to ensure accuracy, originality, and alignment with academic standards. The authors retain full responsibility for the content and integrity of the final manuscript.