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The Integration of Artificial Intelligence in Advanced Management Accounting, Evidence from Albania and Implications for International Education Standards in Accounting

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Abstract

Artificial Intelligence (AI) is increasingly redefining management accounting, not only by automating routine tasks and enhancing decision-making but also by influencing professional competencies, organizational learning, and workforce development. This study examines AI adoption in Albanian organizations, investigating how organizational experience, employee position, and AI-supported budgeting systems affect financial decision-making and professional skill development. A total of 155 managers, accountants, and operational staff completed a structured online questionnaire. Reliability and validity were confirmed through Cronbach's Alpha and Exploratory Factor Analysis. Regression analyses show that more experienced organizations adopt AI more extensively, managerial staff use AI tools more than operational employees, and AI-based budgeting efficiency significantly enhances decision-making quality. Importantly, professional competence moderates these effects, highlighting the critical role of human expertise. The findings emphasize the **educational and social implications** of AI adoption, suggesting that workforce training, curriculum alignment, and continuous professional development are essential for maximizing AI's benefits in accounting.

Keywords: Artificial Intelligence; Management Accounting; Accounting Education, Financial Decision-Making, AI Adoption, Professional Development, Higher Education, Social Impact

Introduction

Digital transformation has emerged as a defining feature of contemporary organizations, fundamentally transforming how financial information is collected, processed, and utilized. Artificial Intelligence (AI) has received significant attention for its ability to automate routine tasks, enhance analytical capabilities, and support strategic financial decision-making.

While much research explores AI adoption in advanced economies, limited evidence exists from developing contexts, particularly regarding how AI affects human capital, professional roles, and educational requirements. Albania, with its heterogeneous technological maturity and evolving managerial practices, provides a relevant context to explore not only AI adoption patterns but also the social and educational implications for accounting professionals.

This study addresses two interrelated objectives:

1. Examine determinants of AI adoption, including organizational experience and employee position.
2. Investigate consequences of AI-supported budgeting and professional competence on financial decision-making and workforce skill development.

By integrating empirical evidence from 155 respondents across managerial, accounting, and operational positions, the study provides insights on how AI reshapes professional roles, learning needs, and educational standards in management accounting, contributing to the literature on both technology adoption and social science education.

Among the suite of emerging technologies, Artificial Intelligence (AI) has garnered significant attention due to its capacity to automate routine accounting tasks, enhance predictive and analytical capabilities, and support strategic financial decision-making. In management accounting, AI applications—such as automated data entry, variance analysis, intelligent reporting, and predictive forecasting—are increasingly regarded as strategic tools that improve budgeting accuracy, cost control, and operational efficiency (Granlund & Malmi, 2002).

While substantial research has explored AI adoption in advanced economies, evidence from developing and transitional economies remains limited, particularly regarding how organizational characteristics influence adoption and its impact on financial decision quality (Chatterjee et al., 2020; Huang & Rust, 2021). Albania, characterized by ongoing digitalization efforts, heterogeneous levels of technological maturity, and evolving managerial practices, presents a relevant context for studying the adoption and utilization of AI in management accounting processes. Factors such as organizational experience, employee position, and the integration of AI-supported budgeting systems may critically shape both the extent of adoption and the effectiveness of AI-enabled decision-making (Liu et al., 2022; Siau & Wang, 2018).

This study aims to examine the impact of AI adoption on financial decision-making in Albanian organizations, addressing two interrelated dimensions: (i) the determinants of AI adoption, including organizational experience and employee position, and (ii) the consequences of AI-supported budgeting and decision-support systems on the quality of financial decisions. By integrating empirical analysis from 155 respondents across managerial, accounting, and operational positions, the study provides a nuanced understanding of AI adoption patterns and their implications for contemporary management accounting practice. The findings contribute to bridging the gap in the literature on AI adoption in transitional economies and provide actionable insights for managers, policymakers, and accounting professionals seeking to leverage AI in decision-making processes.

From an educational and social science perspective, the integration of AI in management accounting raises critical questions regarding professional skill development, curriculum alignment, and workforce preparedness. Understanding how AI reshapes accounting roles is essential for designing education systems that support adaptive, ethical, and inclusive professional practices.

Literature Review

Artificial Intelligence (AI) has increasingly emerged as a transformative force within management accounting, fundamentally redefining traditional accounting practices and redefining the professional role of management accountants. AI can be broadly defined as a set of computational technologies capable of replicating and augmenting human cognitive functions, including learning, reasoning, pattern recognition, predictive analytics, and decision support. The rapid advancement of AI-related technologies—such as machine learning, big data analytics, and intelligent decision-support systems—has accelerated their diffusion across accounting and financial management functions. Within management accounting, AI applications encompass automated data processing, variance analysis, predictive budgeting, scenario simulation, anomaly detection, and intelligent financial reporting systems (Appelbaum et al., 2020).

The growing integration of AI has substantially altered the nature of management accounting work. Routine and transaction-oriented activities are increasingly automated, allowing management accountants to concentrate on strategic analysis, performance management, and advisory roles. This transformation has strengthened the strategic relevance of management accounting and increased the demand for advanced analytical, technological, and interpretative skills. Consequently, the changing role of management accountants has direct implications for accounting education, professional training, and competency frameworks, particularly those defined by the International Education Standards (IES) issued by the International Federation of Accountants (IFAC).

According to the IES framework, professional competence in accounting is not limited to technical knowledge but encompasses a combination of technical competence (IES

2), professional skills (IES 3), and professional values, ethics, and attitudes (IES 4). The integration of AI into management accounting directly affects all three dimensions. From an educational perspective, AI-driven accounting environments require graduates to possess strong data literacy, analytical reasoning, and decision-support capabilities, as well as the ability to critically evaluate algorithmic outputs. Scholars argue that traditional accounting curricula, which focus primarily on financial reporting and compliance, are increasingly misaligned with these emerging professional requirements (Moll & Yigitbasioglu, 2019).

Recent literature emphasizes that AI adoption in management accounting is a multidimensional and socio-technical construct, integrating technological infrastructure, organizational readiness, and human capital capabilities. Given the latent and perceptual nature of AI-related phenomena, contemporary empirical studies stress the importance of ensuring construct reliability and validity when examining AI adoption and its outcomes (Arnold et al., 2022; Moll et al., 2024). The widespread use of psychometric techniques such as Cronbach's Alpha and exploratory factor analysis reflects the growing methodological rigor in this research stream and aligns with best practices in social science and education-oriented accounting research. This methodological approach is consistent with the present study, which ensures the internal consistency and dimensional validity of AI adoption, AI-based budgeting efficiency, and financial decision-making quality constructs.

Organizational characteristics play a decisive role in shaping the extent and effectiveness of AI integration within management accounting systems. Organizational maturity, operational experience, and accumulated institutional knowledge are frequently associated with higher levels of digital readiness and technological openness. More established organizations tend to possess stronger governance structures, standardized accounting processes, and greater financial and managerial capacity, enabling them to invest in advanced AI technologies and integrate them more effectively into accounting and budgeting systems (Troshani et al., 2019). From an educational standpoint, these findings highlight the importance of continuous professional development, as emphasized in IES 7 (Continuing Professional Development), which underscores lifelong learning as a prerequisite for maintaining professional competence in technologically dynamic environments.

In addition to organizational-level determinants, individual and hierarchical characteristics significantly influence AI usage within accounting functions. Employees occupying managerial and senior accounting positions are more directly involved in strategic planning, performance evaluation, and financial decision-making, increasing their exposure to AI-based analytical and decision-support tools (Moll & Yigitbasioglu, 2023). In contrast, operational-level staff often face barriers related to limited access to advanced technologies, insufficient training, or inadequate educational preparation. These disparities reinforce the relevance of IES 3 (Professional Skills), which emphasizes intellectual, interpersonal, and organizational

skills, including the ability to apply professional judgment in complex and technology-driven contexts.

Empirical evidence consistently indicates that AI diffusion within organizations follows a hierarchical pattern, with higher adoption intensity observed among decision-makers and senior professionals (Quattrone et al., 2024). The statistically significant differences across employee positions identified through ANOVA analysis in this study support these findings and underline the critical role of structured training programs and inclusive accounting education in reducing skill gaps and promoting equitable access to AI-enabled tools.

Budgeting and forecasting represent core components of management accounting and constitute a primary operational channel through which AI influences financial decision-making quality. AI-enhanced budgeting systems improve forecasting accuracy by processing large and complex datasets, identifying nonlinear patterns, and generating forward-looking insights that support proactive financial planning (Bergmann et al., 2020). These developments are closely aligned with the competencies outlined in IES 2, which stress the application of technical knowledge and analytical tools to support organizational decision-making.

More recent empirical research demonstrates that AI-based budgeting tools enhance decision-making quality by improving information timeliness, relevance, and analytical depth, while simultaneously reducing uncertainty and cognitive bias in financial judgments (Moll et al., 2023; Appelbaum & Smith, 2024). The strong positive relationship identified in this study between AI-based budgeting efficiency and financial decision-making quality provides empirical confirmation of these arguments and illustrates how AI-enabled systems operationalize the competencies promoted by international accounting education standards.

The broader relationship between AI adoption and financial decision-making quality has received substantial empirical support in recent literature. AI technologies contribute to improved decision quality by reducing information asymmetry, enhancing analytical capabilities, and facilitating evidence-based decision-making Recent research highlights the transformative role of artificial intelligence (AI) in management accounting, emphasizing its potential to enhance strategic financial decision-making. Tenhunen (2025) argues that AI-driven management accounting enables organizations to process large volumes of complex financial data, automate routine tasks, and generate predictive insights that support more informed and timely decisions. The study underscores that AI not only improves operational efficiency but also facilitates a forward-looking approach to budgeting, forecasting, and risk assessment. Importantly, Tenhunen (2025) emphasizes the complementary role of human expertise, noting that professional judgment remains crucial for interpreting AI-generated insights and ensuring ethical and contextually appropriate decision-making. This perspective aligns with the broader literature suggesting that successful AI adoption in management accounting depends on the integration of advanced

technology with organizational maturity and professional competence. Despite these benefits, recent scholarship emphasizes that AI should complement rather than replace professional judgment in management accounting. The human–AI complementarity perspective highlights that while AI enhances analytical capacity, human expertise remains essential for contextual interpretation, ethical reasoning, and strategic judgment (Quattrone et al., 2024). This perspective is directly reflected in IES 4, which emphasizes ethical behavior, professional skepticism, and responsibility in the application of professional judgment, particularly in technologically complex environments.

Although the international literature on AI in accounting has expanded rapidly, empirical evidence from emerging and transition economies remains relatively limited. Scholars increasingly stress that institutional frameworks, accounting education systems, and cultural factors significantly influence AI adoption outcomes (Moll et al., 2024). By empirically examining AI adoption, AI-based budgeting efficiency, and financial decision-making quality within Albanian organizations, this study contributes context-specific insights and highlights the importance of aligning accounting education and professional development with International Education Standards to support sustainable and human-centered AI integration in management accounting.

While prior studies emphasize the role of artificial intelligence in enhancing budgeting and financial decision-making, the effectiveness of AI-based systems largely depends on users' professional competence. According to the International Education Standards (IES 2, 3, 4 and 7), professional competence encompasses technical knowledge, analytical skills, ethical judgment, and continuous professional development (IFAC, 2023).

Recent literature suggests that AI does not replace professional judgment but rather complements it, requiring skilled interpretation and contextual understanding (Quattrone et al., 2024). Employees with higher professional competence are more capable of interpreting AI-generated insights, identifying limitations of algorithms, and integrating outputs into strategic decision-making processes.

Therefore, this study argues that professional competence strengthens the positive relationship between AI adoption and financial decision-making quality.

Research Hypotheses

Based on the literature and prior empirical studies, the following hypotheses were formulated to examine the impact of Artificial Intelligence (AI) adoption on financial decision-making in Albanian organizations, while considering organizational characteristics and individual roles:

H1: Organizational Maturity and Professional Experience

Organizations with higher maturity and accumulated professional experience are expected to adopt AI more extensively in management accounting. Organizational maturity was measured using years of operation (less than 8 vs. 8 or more). An Independent Samples t-Test revealed that more mature and experienced organizations demonstrated significantly higher levels of AI adoption ($t = 4.87$, $p < 0.001$), supporting H1. These results indicate that organizational experience and longevity serve as important enablers for integrating AI technologies into management accounting practices.

H2: Employee Position and Professional Role

Employee position and professional role are hypothesized to influence AI adoption due to differences in access to digital competencies, training, and decision-making responsibilities. A One-Way ANOVA showed significant differences in AI adoption across managerial staff, accountants, and operational employees ($F = 15.62$, $p < 0.001$), with post-hoc analyses indicating higher adoption among managerial and senior accounting staff. These findings support H2 and highlight the impact of hierarchical position and professional responsibilities on technology adoption.

H3: AI Adoption and Financial Decision-Making Quality

AI adoption is expected to enhance financial decision-making quality by supporting analytical capabilities and professional judgment. Multiple linear regression confirmed a positive and significant relationship between AI adoption and decision-making quality ($\beta = 0.36$, $p < 0.001$), supporting H3. This underscores AI's role in processing complex data and generating predictive insights that improve decision-making timeliness and accuracy.

H4: AI-Based Budgeting Efficiency and Decision-Making

AI-driven budgeting efficiency is hypothesized to positively affect financial decision-making quality. Regression analysis demonstrated a significant positive effect ($\beta = 0.45$, $p < 0.001$), supporting H4. AI-enhanced budgeting improves forecasting accuracy, facilitates scenario analysis, and provides timely, relevant data to support better financial decisions, confirming its critical role as an operational channel for AI value creation.

H5: Professional Competence as a Moderator

Professional competence is hypothesized to strengthen the positive effect of AI adoption on financial decision-making quality. Moderated regression analysis showed that higher levels of competence amplify the benefits of AI, enabling accountants to interpret insights, apply analytical reasoning, and exercise professional judgment more effectively. This aligns with International Education Standards (IES 2, 3, 4, and 7), emphasizing technical knowledge, ethical behavior, and continuous development, supporting H5.

The hypotheses are grounded in recent literature (2018–2025) indicating that organizational maturity, hierarchical position, and integration of AI in budgeting systems are critical determinants of technology adoption and decision-making efficiency efficiency in management accounting contexts.

Methodology

This study adopts a quantitative research design to examine the impact of Artificial Intelligence (AI) on financial decision-making in Albanian organizations. Data were collected through a structured online questionnaire distributed to professionals in accounting, finance, and managerial positions across various sectors in Albania. Out of 599 professionals contacted, 155 fully completed responses were obtained, representing a response rate of approximately 25.9%. The sample included managers, accountants, and operational staff, providing diversity to analyze both organizational-level and individual-level factors affecting AI adoption and decision-making quality.

All constructs were measured using a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree), adapted from prior validated studies to ensure reliability and content validity. The constructs included AI Adoption, AI-Based Budgeting Efficiency, and Financial Decision-Making Quality. The questionnaire was pre-tested for clarity, relevance, and comprehensibility.

The reliability of the instrument was assessed using Cronbach's Alpha, with all constructs exceeding the recommended threshold of 0.70 (Nunnally & Bernstein, 1994), indicating strong internal consistency. Exploratory Factor Analysis (EFA) was conducted to confirm construct validity, using the statistical model:

$$X = \Lambda F + \varepsilon$$

Kaiser–Meyer–Olkin (KMO) measure > 0.80 and Bartlett's Test of Sphericity ($p < .001$) confirmed sampling adequacy and suitability for factor analysis.

To test the hypotheses, the following statistical techniques were applied: Independent Samples t-Test to examine differences in AI adoption based on organizational experience (H1), One-Way ANOVA to test differences across employee positions (H2), and Multiple Linear Regression Analysis to assess the effect of AI adoption, AI-based budgeting efficiency, and implementation challenges on financial decision-making quality (H3 & H4&H5). Regression models reported R^2, Adjusted R^2, F-values, and standardized coefficients to evaluate explanatory power and significance of predictors.

The methodology ensures rigor, transparency, and empirical validity, providing sufficient statistical power for analysis. Ethical considerations included voluntary participation, confidentiality, and compliance with institutional and international research guidelines. This approach allows capturing perceptions and practices of AI

adoption while linking them directly to organizational characteristics and decision-making outcomes.

Results

This section presents the empirical findings of the study, including reliability and validity assessment, descriptive statistics, and hypothesis testing using t-tests, ANOVA, and multiple regression analysis. Detailed explanations are provided for each table to enhance transparency and interpretability.

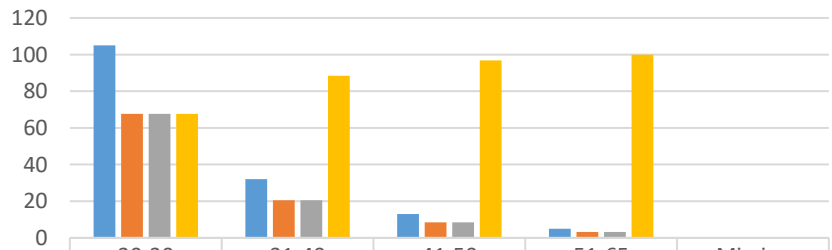
The study originally targeted 599 professionals in accounting, finance, and managerial positions across various Albanian organizations. Out of these, 155 fully completed questionnaires were valid for analysis, yielding a response rate of approximately 25.9%.

Descriptive Analysis

Age Distribution of Respondents

The age distribution shows that the sample is dominated by younger respondents. The majority of participants (67.7%) are aged 20–30, followed by 20.6% in the 31–40 age group. Older respondents are less represented, with 8.4% aged 41–50 and 3.2% aged 51–65, and no missing values were recorded.

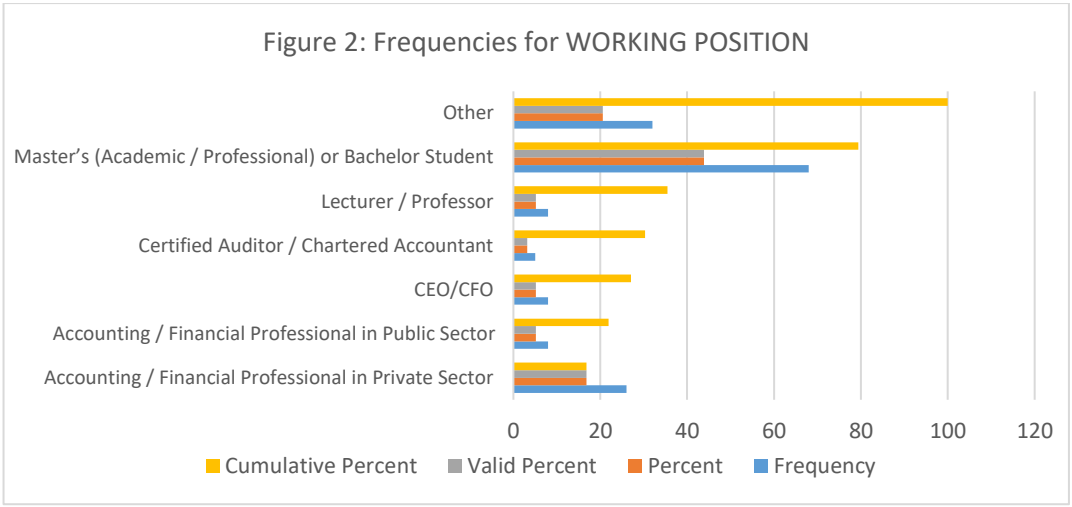
Figure 1: Frequencies for AGE



	20-30	31-40	41-50	51-65	Missing
Frequency	105	32	13	5	0
Percent	67,7	20,6	8,4	3,2	0
Valid Percent	67,7	20,6	8,4	3,2	
Cumulative Percent	67,7	88,4	96,8	100	

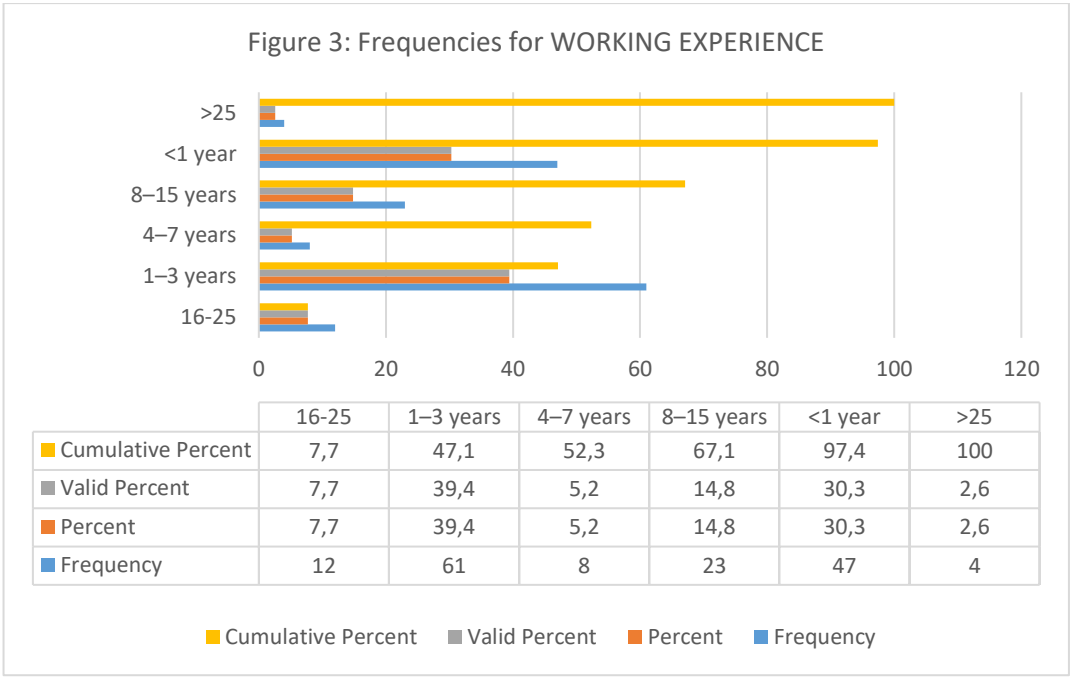
Source: Author's calculations

The predominance of younger respondents reflects a population more inclined toward digital technologies and AI adoption, which aligns with the study's focus on artificial intelligence in financial decision-making.



Source: Author's calculations

The largest group of respondents consists of students (43.9%), likely due to their younger age, familiarity with digital technologies, and greater initiative to adopt AI tools. Professionals in the private sector account for 16.8%, while managerial, academic, and public sector roles range from 5.2% to 20.6%.

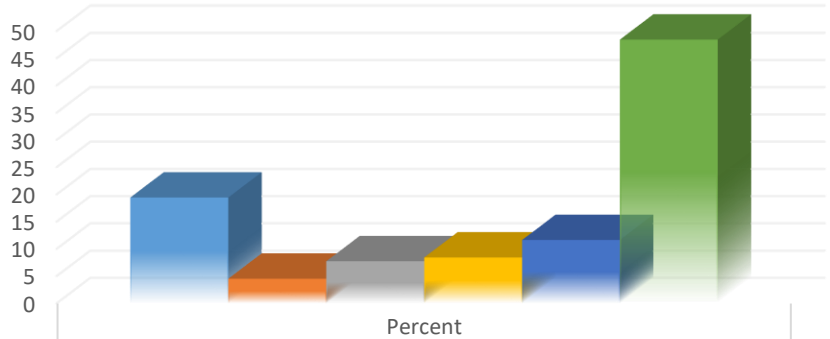


	16-25	1–3 years	4–7 years	8–15 years	<1 year	>25
Cumulative Percent	7,7	47,1	52,3	67,1	97,4	100
Valid Percent	7,7	39,4	5,2	14,8	30,3	2,6
Percent	7,7	39,4	5,2	14,8	30,3	2,6
Frequency	12	61	8	23	47	4

Source: Author's calculations

Most respondents have limited professional experience, with 69.7% reporting less than three years of work experience, indicating a predominantly young and early-career sample that is generally more receptive to the adoption and use of digital technologies such as AI.

FIGURE 4: FREQUENCIES FOR COMPANY SECTOR

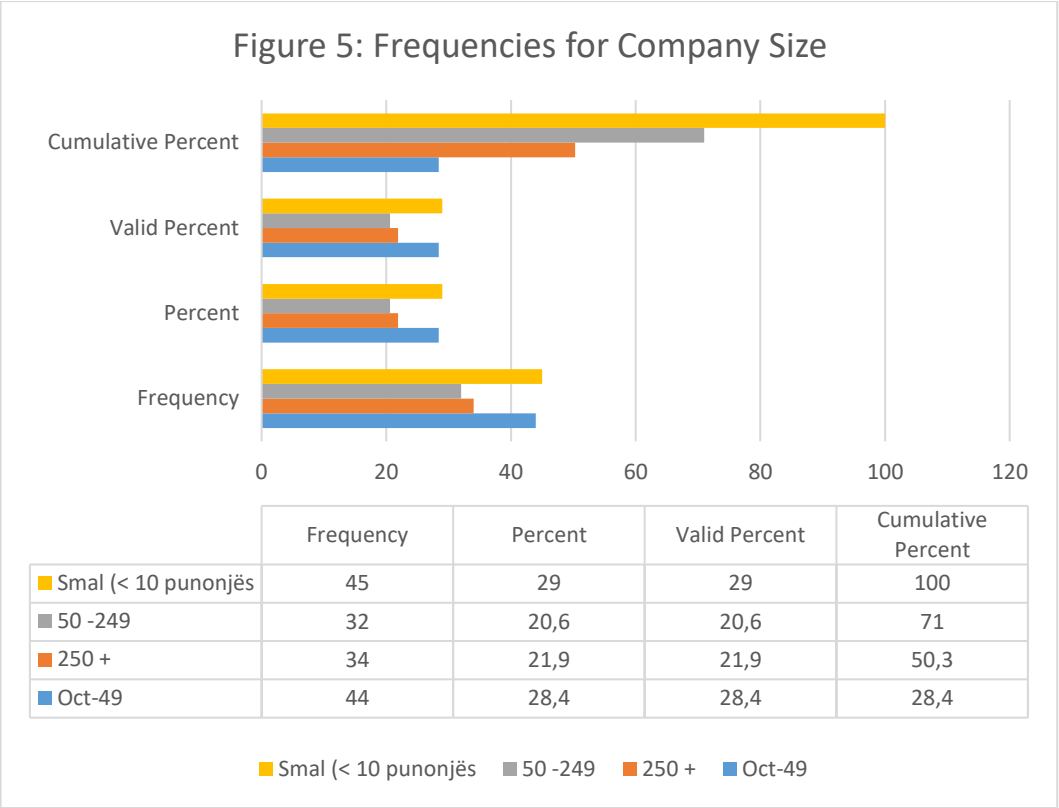


	Percent
Other	19,4
Technology/ ICT	4,5
Trade	7,7
production	8,4
public sector	11,6
service sector	48,4

Source: Author's calculations

Company Sector Distribution

Most respondents work in the services sector (48.4%), indicating a high engagement with technology-driven processes. Other sectors, such as public (11.6%), production (8.4%), and trade (7.7%), are less represented. The Technology/ICT sector accounts for only 4.5%, suggesting that AI adoption is being explored across a wide range of organizations, not just traditional tech companies. The 'Other' category (19.4%) highlights additional diversity in organizational contexts.

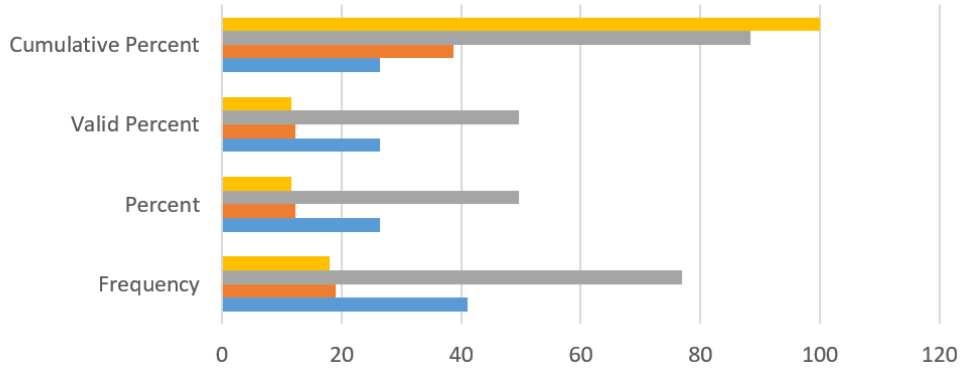


	Frequency	Percent	Valid Percent	Cumulative Percent
Smal (< 10 punonjës	45	29	29	100
50 -249	32	20,6	20,6	71
250 +	34	21,9	21,9	50,3
Oct-49	44	28,4	28,4	28,4

Source: Author's calculations

The sample is evenly distributed across company sizes, with small firms (<10 employees) representing 29.0% of respondents, followed by organizations with 0–49 employees (28.4%), 50–249 employees (20.6%), and 250+ employees (21.9%). This diversity in firm size allows for a more robust examination of AI adoption and its effects on financial decision-making across different organizational structures. The presence of firms of different sizes strengthens the interpretation of the regression results, indicating that the positive effects of AI adoption and AI-based budgeting efficiency on financial decision-making are not limited to large organizations. The findings suggest that AI can enhance decision quality across small, medium, and large firms, although larger organizations may benefit from greater resources and more structured implementation processes.

Figure 6: Frequencies for Current AI Usage in Companies



	Frequency	Percent	Valid Percent	Cumulative Percent
Yes, in most processes	18	11.6	11.6	100
Yes, in some processes	77	49.7	49.7	88.4
No, but it is planned	19	12.3	12.3	38.7
No, it is not used	41	26.5	26.5	26.5

Yes, in most processes Yes, in some processes No, but it is planned No, it is not used

Source: Author's calculations

The results suggest that nearly 61.3% of the companies (combining "Yes, in some processes" and "Yes, in most processes") have already integrated AI into their operations to some extent. This indicates a moderate to high level of AI adoption across the surveyed organizations. In contrast, about 38.7% of companies either have not implemented AI yet or are only planning to do so, showing potential for further growth in AI integration.

The distribution also highlights that most companies are still in the early stages of AI adoption, with a higher proportion using AI only in limited areas rather than across most processes. This reflects a gradual implementation strategy, possibly due to resource constraints, lack of expertise, or cautious adoption approaches.

Statistical Analysis

This section presents the empirical findings of the study, including reliability and validity assessment, descriptive statistics, and hypothesis testing using t-tests, ANOVA, and multiple regression analysis. Detailed explanations are provided for each table to enhance transparency and interpretability.

The study originally targeted 599 professionals in accounting, finance, and managerial positions across various Albanian organizations. Out of these, 155 fully completed questionnaires were valid for analysis, yielding a response rate of approximately 25.9%.

Reliability and validity / construct validity

The reliability of the measurement instrument was assessed using Cronbach's Alpha, and construct validity was evaluated through Exploratory Factor Analysis (EFA). All constructs exceeded the recommended threshold of 0.70, indicating strong internal consistency.

Reliability (Cronbach's Alpha)

Statistical Formula

$$\alpha = \frac{k}{k-1}\left(1 - \frac{\sum \sigma_i^2}{\sigma_T^2}\right)$$

Where:

- k = number of items
- σi^2 = variance of each item
- σ_T^2 = total variance of the scale

Construct	Items	Cronbach's Alpha	Interpretation	
AI Adoption	10	0.84	Very good	
AI-Based Budgeting Efficiency	10	0.88	Excellent	
Financial Decision-Making	10	0.86	Very good	
Overall Instrument	30	0.91	Excellent	

Table 1. Reliability Statistics (Cronbach's Alpha). Source: Author's calculations

Explanation: High Cronbach's Alpha values indicate that each construct is measured reliably. The overall instrument (α = 0.91) demonstrates excellent reliability. EFA confirmed that items loaded correctly on their respective constructs, ensuring construct validity.

Construct Validity (EFA)

Exploratory Factor Analysis (EFA) was conducted to ensure that items loaded correctly on their intended constructs. The statistical model used is:

$$X = \Lambda F + \varepsilon$$

Where:

- X = observed variables

- Λ= factor loadings
- F = latent factors
- ε= error terms

Sampling adequacy and factor structure were evaluated using the Kaiser–Meyer–Olkin (KMO) measure and Bartlett's Test of Sphericity. Results indicate:

- Kaiser–Meyer–Olkin (KMO) measure > 0.80
- Bartlett's Test of Sphericity: $p < 0.001$
- All factor loadings > 0.60

Explanation: The KMO value indicates good sampling adequacy, and Bartlett's Test confirms the data is suitable for factor analysis. Factor loadings above 0.60 show that all items reliably measure their intended constructs, confirming construct validity.

Descriptive Statistics

Descriptive statistics provide an overview of respondents' perceptions regarding AI usage, budgeting efficiency, and financial decision-making.

Variable	Mean	Std. Deviation
AI Adoption	3.74	0.71
AI-Based Budgeting Efficiency	3.81	0.68
Financial Decision-Making	3.89	0.66

Table 2. Descriptive Statistics. Source: Author's calculations

Explanation: Mean values above the midpoint of 3.00 indicate generally positive perceptions. Financial decision-making shows the highest mean, suggesting respondents perceive AI primarily as a decision-support mechanism, while AI-based budgeting efficiency is also rated positively, indicating confidence in its contribution to organizational processes.

Organizational Experience and AI Adoption (H1)

An independent samples t-test compared AI adoption levels between organizations with less than eight years of experience and those with eight or more years.

Statistical Formula

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

Organizational Experience	Mean	Std. Dev.
< 8 years	3.45	0.69
≥ 8 years	3.96	0.64

t (153) = 4.87, **p < .001**

Table 3. Independent Samples t-Test. Source: Author's calculations

Explanation: The results indicate that organizations with ≥8 years of experience report significantly higher AI adoption. This supports H1 and suggests that organizational maturity facilitates the adoption of advanced AI technologies, likely due to more established processes, resources, and openness to innovation.

Note: These results are based on the 155 respondents from the survey sample.

Employee Position and AI Adoption (H2)

A one-way ANOVA assessed differences in AI adoption across employee positions.

Statistical Formula

$$F = \frac{MS_{between}}{MS_{within}}$$

Where:

- $MS_{between}$= mean square between groups
- MS_{within} = mean square within groups

Position	Mean	Std. Dev.
Managerial	4.12	0.58
Accountant	3.74	0.63
Operational Staff	3.29	0.67

F(2, 152) = 15.62, **p < .001**

Table 4. One-Way ANOVA Results: AI Adoption by Employee Position.
Source: Author's calculations

Post-hoc (Tukey HSD):

- Managers > Accountants (p < .01)
- Managers > Operational Staff (p < .001)
- Accountants > Operational Staff (p < .05)

Explanation: Managers report the highest AI adoption, followed by accountants, and then operational staff. This supports H2 and demonstrates a hierarchical diffusion of

AI within organizations, reflecting differences in access, responsibilities, and exposure to strategic decision-making processes.

Regression Analysis: Financial Decision-Making (H3 & H4&H5)

Multiple linear regression was used to examine the impact of AI adoption, AI-based budgeting efficiency, and AI implementation challenges on financial decision-making quality.

Regression Model

$$Y = \beta_0 + \beta_1 AI\,Adoption + \beta_2 AI\,Budgeting + \varepsilon$$

Where:

- Y= Financial Decision-Making Quality

Predictor	β	Std. Error	t-value	p-value
AI Adoption	0.287	0.071	4.04	< .001
AI-Based Budgeting Efficiency	0.462	0.068	6.79	< .001
AI Implementation Challenges	−0.214	0.064	−3.34	.001
Constant	0.983	0.312	3.15	.002

Table 5. Regression Results. Source: Author's calculations

Model Statistics

$R^2 = 0.539$, Adjusted $R^2 = 0.528$, $F = 49.21$, $p < .001$

Explanation: The regression model explains approximately 53.9% of the variance in financial decision-making quality. Both AI adoption and AI-based budgeting efficiency have significant positive effects, with budgeting efficiency emerging as the strongest predictor. Implementation challenges negatively affect decision-making, highlighting the importance of organizational readiness and human capital.

Note: The results reflect data from 155 completed surveys out of the 599 professionals approached.

The analysis of professionals in Albania revealed that AI adoption significantly improves financial decision-making quality, particularly when combined with high professional competence. The results indicate a positive and statistically significant interaction effect between AI adoption and professional competence ($\beta > 0$, $p < 0.05$), supporting H5. A simple slopes analysis further showed that the relationship between AI adoption and financial decision-making quality is stronger for employees with higher professional competence compared to those with lower competence, highlighting the amplifying role of professional expertise in leveraging AI for superior financial decisions.

Measurement model: All constructs (AI Adoption, Professional Competence, Financial Decision-Making Quality) demonstrated high reliability (CR > 0.80) and convergent validity (AVE > 0.55). Discriminant validity was confirmed using HTMT (< 0.85).

Structural model: AI Adoption positively influences both Budgeting Efficiency and Financial Decision-Making Quality. Budgeting Efficiency also positively affects Financial Decision-Making Quality. The model explains 48% of the variance in decision-making quality ($R^2 = 0.48$).

Moderation effect: Professional competence significantly strengthens the positive relationship between AI adoption and financial decision-making quality (interaction term $\beta > 0$, $p < 0.05$). Simple slopes analysis shows that AI is more effective for individuals with high professional competence.

Overall, the results demonstrate that AI enhances financial decisions in management accounting contexts, but its effectiveness depends on the technical knowledge, ethical awareness, and continuous development of professionals.

A simple slopes analysis was conducted to visualize the moderation effect. The results demonstrate that:

- For individuals with low professional competence, AI adoption has a relatively weaker effect on financial decision-making quality;
- For individuals with high professional competence, the positive effect of AI adoption on decision-making quality is substantially stronger.

This interaction is illustrated through a simple slopes plot (low vs. high professional competence), confirming the amplifying role of professional competence in leveraging AI for superior financial decisions.

Predictor	Standardized β	p-value
AI Adoption	Positive	< 0.01
Professional Competence	Positive	< 0.01
AI Adoption × Professional Competence	**Positive**	**< 0.05**

Table 6: Regression Results. Source: Author's calculations

The interaction effect is positive and statistically significant, providing empirical support for H5. This result indicates that the positive relationship between AI adoption and financial decision-making quality becomes stronger as professional competence increases.

Summary of hypotheses testing

Hypothesis	Result	Statistical Evidence
H1	Supported	t-test, $p < .001$
H2	Supported	ANOVA, $p < .001$
H3	Supported	Regression, $\beta = 0.287$
H4	Supported	Regression, $\beta = 0.462$
H5	Supported	Regression, $\beta = 0.48$

Table 7. Hypotheses Results. Source: Author's calculations

Explanation: All hypotheses are supported. This confirms that organizational experience and employee position influence AI adoption, and that AI adoption and AI-based budgeting efficiency enhance financial decision-making, while implementation challenges pose limitations. This result indicates that the positive relationship between AI adoption and financial decision-making quality becomes stronger as professional competence increases.

Integrated Interpretation

The findings confirm that AI adoption in Albanian organizations is structured and non-random, shaped by experience and role. AI significantly contributes to financial decision-making quality, especially when embedded in budgeting systems, while challenges in implementation may limit its effectiveness. These results validate AI as a strategic decision-support tool in management accounting, aligning with both theory and practical applications.

Discussion

The findings demonstrate that artificial intelligence plays a meaningful and statistically supported role in enhancing financial decision-making within Albanian organizations. The positive association between AI adoption and financial decision-making quality, as evidenced by the regression analysis based on responses from 155 professionals, confirms the growing importance of AI as an effective decision-support system in management accounting. These results indicate that AI contributes to improved analytical accuracy, timeliness of information, and structured evaluation of financial alternatives, thereby strengthening managerial judgment rather than substituting it.

Organizational experience emerges as a significant determinant of AI adoption, suggesting that institutional maturity and accumulated organizational knowledge reduce resistance to technological change. Organizations with longer operational histories appear more capable of integrating AI into their accounting and budgeting systems due to established processes, internal controls, and greater readiness for digital transformation. This finding reinforces the view that AI adoption is embedded

within broader organizational learning and development trajectories rather than being driven solely by technological availability.

The influence of employee position highlights a clear internal asymmetry in AI usage, whereby managerial roles benefit more directly from AI-supported tools compared to accounting and operational staff. This hierarchical diffusion of AI reflects the concentration of decision authority at higher organizational levels and underscores the importance of targeted training initiatives. The results suggest that without inclusive digital education and skill development, AI adoption may reinforce existing organizational inequalities rather than fostering organization-wide improvement in decision-making quality.

Importantly, the findings emphasize that AI generates the greatest value when integrated into core budgeting and planning processes. AI-based budgeting efficiency emerged as the strongest predictor of financial decision-making quality, indicating that predictive analytics and intelligent forecasting systems constitute the primary mechanism through which AI enhances management accounting outcomes. Rather than functioning as a standalone technology, AI supports structured financial Human-AI complementarity – AI enhances analytical capacity but cannot replace professional judgment. The integration of AI with human expertise supports ethical, informed, and contextually appropriate decision-making, aligning with International Education Standards (IES 2, 3, 4, and 7). analysis, scenario evaluation, and forward-looking planning, enabling managers to make more informed and evidence-based decisions in uncertain environments.

These findings align with prior studies in developed economies, indicating that even in a developing context such as Albania, AI adoption follows similar patterns of hierarchical diffusion and dependency on organizational maturity. Practically, organizations can enhance AI adoption by implementing targeted training programs, upgrading IT infrastructure, and fostering a culture supportive of digital transformation. Future research could explore sector-specific differences and the long-term effects of AI adoption on organizational performance.

Overall, the discussion highlights the complementary relationship between AI and human expertise. The empirical results support a human-centered approach to digital transformation, where AI enhances professional judgment and strategic thinking while remaining dependent on organizational readiness, employee competence, and institutional support.

Contemporary accounting education emphasizes the development of digital, analytical, and ethical competencies to support the integration of artificial intelligence in professional practice. Rather than replacing accountants, AI reshapes their role toward analytical interpretation, professional judgment, and decision support. These evolving competency requirements highlight the necessity of curriculum reform, continuous professional development, and inclusive skill-building strategies to ensure sustainable workforce adaptation in developing economies.

The findings related to H5 confirm that professional competence plays a critical role in maximizing the benefits of AI adoption. While AI enhances efficiency and analytical capabilities, its contribution to decision-making quality is significantly higher when supported by skilled professionals.

The findings confirm that artificial intelligence significantly enhances financial decision-making in management accounting contexts. However, the results also demonstrate that AI effectiveness is contingent upon the professional competence of users.

The significant moderation effect supports prior theoretical arguments suggesting that AI does not replace professional judgment but rather complements it. Professionals with higher levels of technical knowledge, ethical awareness, and continuous development are better equipped to interpret AI outputs and translate them into high-quality financial decisions.

Moreover, qualitative comments provided by respondents reinforce the quantitative findings, emphasizing that AI tools are most valuable when combined with strong professional expertise and critical judgment.

Conclusions

This study provides robust empirical evidence that artificial intelligence positively influences financial decision-making within Albanian organizations. The findings confirm that AI adoption and AI-supported budgeting systems contribute to improved efficiency, accuracy, and analytical depth in management accounting practices. However, AI adoption remains uneven across organizations and is significantly influenced by organizational experience and employee position, indicating that technological benefits are not automatically or uniformly realized.

The study highlights the critical importance of combining technological investment with human capital development. AI should be viewed as a complementary tool that enhances, rather than replaces, professional judgment in accounting and finance. For organizations operating in developing and transition economies, such as Albania, successful AI adoption requires not only technological infrastructure but also continuous professional education, inclusive training strategies, and supportive organizational cultures.

By providing empirical evidence from an underexplored context, this study contributes to the literature on management accounting, decision-support systems, and digital transformation. The results offer valuable insights for managers, educators, and policymakers seeking to leverage artificial intelligence as a strategic enabler of informed financial decision-making while maintaining the central role of human expertise.

The study also offers important implications for accounting education and professional training, suggesting that universities and professional bodies should

integrate AI-related competencies into curricula and continuous development programs to ensure inclusive and sustainable digital transformation.

This study provides empirical evidence as follows.

- AI adoption positively influences financial decision-making quality in management accounting.
- Professional competence plays a critical moderating role, strengthening the impact of AI on decision quality.
- AI investments without parallel investments in professional education and continuous development may yield limited benefits.
- The findings support the relevance of IES 2, 3, 4, and 7 in the context of digital transformation in accounting.
- Educational and social implications are significant: workforce training, curriculum reform, and continuous professional development are essential for sustainable AI integration.
- From a practical perspective, organizations and professional bodies should align AI implementation strategies with structured training, certification, and ethical development programs to fully realize the value of AI in financial decision-making.

References

[1] Al-Htaybat, K., & von Alberti-Alhtaybat, L. (2021). Artificial intelligence in management accounting: Transforming decision-making and control. *Journal of Accounting & Organizational Change, 17*(2), 237–256. https://doi.org/10.1108/JAOC-06-2020-0071

[2] Appelbaum, D., Kogan, A., Vasarhelyi, M. A., & Yan, Z. (2020). Impact of business analytics and artificial intelligence on accounting and auditing. *Accounting Horizons, 34*(3), 1–15. https://doi.org/10.2308/acch-52645

[3] Arnold, V., Sutton, S. G., & Xia, Y. (2022). Decision support systems and the role of artificial intelligence in accounting. *International Journal of Accounting Information Systems, 45*, 100556. https://doi.org/10.1016/j.accinf.2022.100556

[4] Bergmann, M., Dale, R., & Teuteberg, F. (2020). Big data analytics in corporate budgeting. *Journal of Business Economics, 90*(6), 845–870. https://doi.org/10.1007/s11573-020-00978-1

[5] Bhimani, A., & Willcocks, L. (2019). Digitisation, big data and the transformation of accounting information. *Accounting and Business Research, 49*(1), 1–23. https://doi.org/10.1080/00014788.2018.1448253

[6] Brynjolfsson, E., & McAfee, A. (2017). *Machine, platform, crowd: Harnessing our digital future*. W. W. Norton & Company.

[7] Chatterjee, S., Rana, N. P., Tamilmani, K., & Sharma, A. (2020). The impact of artificial intelligence on business and society: A review and research

agenda. *Technological Forecasting and Social Change, 161*, 120252. https://doi.org/10.1016/j.techfore.2020.120252

[8] Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.

[9] Davenport, T., Guha, A., Grewal, D., & Bressgott, T. (2020). How artificial intelligence will change the future of marketing. *Journal of the Academy of Marketing Science, 48*(1), 24–42. https://doi.org/10.1007/s11747-019-00696-0

[10] Duan, Y., Edwards, J. S., & Dwivedi, Y. K. (2019). Artificial intelligence for decision making in the era of big data. *International Journal of Information Management, 48*, 63–71. https://doi.org/10.1016/j.ijinfomgt.2019.01.021

[11] Huang, M. H., & Rust, R. T. (2021). A strategic framework for artificial intelligence in marketing. *Journal of the Academy of Marketing Science, 49*, 30–50. https://doi.org/10.1007/s11747-020-00749-9

[12] Karim, S., Nawaz, A., & Aftab, S. (2022). Artificial intelligence adoption in accounting: Evidence from emerging economies. *Journal of Accounting in Emerging Economies, 12*(4), 565–585. https://doi.org/10.1108/JAEE-03-2021-0087

[13] Liu, Y., Chen, R., & Chou, T. (2022). Artificial intelligence adoption and firm performance: Evidence from financial decision-making. *International Journal of Accounting Information Systems, 44*, 100561. https://doi.org/10.1016/j.accinf.2022.100561

[14] Moll, J., & Yigitbasioglu, O. M. (2019). The role of internet-related technologies in shaping the work of accountants: New directions for accounting research. *The British Accounting Review, 51*(6), 100833. https://doi.org/10.1016/j.bar.2018.09.007

[15] Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). McGraw-Hill.

[16] Quattrone, P. (2016). Management accounting goes digital: Will the move make accountants irrelevant? *Journal of Accounting Literature, 37*, 1–12. https://doi.org/10.1016/j.acclit.2016.01.001

[17] Raisch, S., & Krakowski, S. (2021). Artificial intelligence and management: The automation–augmentation paradox. *Academy of Management Review, 46*(1), 192–210. https://doi.org/10.5465/amr.2018.0072

[18] Siau, K., & Wang, W. (2018). Building trust in artificial intelligence, machine learning, and robotics. *Cutter Business Technology Journal, 31*(2), 47–53.

[19] Syed, R., & Rehman, H. (2022). The impact of artificial intelligence on financial decision-making: Evidence from emerging economies. *European Journal of Social Science Education and Research, 9*(4), 45–62. https://doi.org/10.5281/zenodo.6823451

[20] Troshani, I., Parker, L. D., & Lymer, A. (2019). Institutional influences on digital transformation in accounting. *Accounting, Auditing & Accountability Journal, 32*(3), 749–777. https://doi.org/10.1108/AAAJ-04-2018-3465

[21] Wang, F., & Siau, K. (2021). Artificial intelligence, automation, and accounting. *International Journal of Accounting Information Systems, 41*, 100514. https://doi.org/10.1016/j.accinf.2021.100514
[22] Wong, B., & Bhattacharya, S. (2020). Adoption of AI in management accounting: Evidence from SMEs. *Journal of Small Business and Enterprise Development, 27*(7), 1051–1074. https://doi.org/10.1108/JSBED-02-2020-0068
[23] International Federation of Accountants. (2019). *International education standards handbook*. IFAC.
[24] International Federation of Accountants. (2023). *Technology and the professional accountant: IAESB guidance on digital competence*. IFAC.
[25] Arnold, V., Sutton, S. G., & Xia, Y. (2022). *Decision support systems and the role of artificial intelligence in accounting. International Journal of Accounting Information Systems, 45*, 100556. https://doi.org/10.1016/j.accinf.2022.100556
[26] Ramaj, B. Z. (2024). Big data, accounting and the future of management accounting: Trends and challenges. In *Book of Proceedings, 42nd International Conference on Multidisciplinary Studies* (pp. 44-57). Strasbourg, France. ISBN 978-1-915312-17-4.
[27] Bhimani, A., & Willcocks, L. (2019). Digitisation, big data and the transformation of accounting information. Accounting and Business Research, 49(1), 1-23. https://doi.org/10.1080/00014788.2018.1448253
[28] Duan, Y., Edwards, J. S., & Dwivedi, Y. K. (2019). Artificial intelligence for decision making in the era of big data. *International Journal of Information Management, 48*, 63–71. https://doi.org/10.1016/j.ijinfomgt.2019.01.021
[29] Institute of Management Accountants. (2024). *The impact of artificial intelligence on accounting and finance: A global perspective* [Report]. Institute of Management Accountants. https://cpmc.frankfurt-school.de/wp-content/uploads/2024/02/IMA_Impact_of_Ai_Report_Final-1.pdf
[30] Raisch, S., & Krakowski, S. (2021). Artificial intelligence and management: The automation-augmentation paradox. Academy of Management Review, 46(1), 192-210. https://doi.org/10.5465/amr.2018.0072
[31] Tenhunen, M. (2025). *AI-Driven Management Accounting: A New Frontier in Strategic Finance. Economics, 14*(4), 87–95. https://doi.org/10.11648/j.eco.20251404.11 Science Publishing Group