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EVOLUTION OF THE ACCOUNTANT'S PROFESSIONAL JUDGMENT IN THE ENVIRONMENT OF INTELLIGENT FINANCIAL SYSTEMS

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ABSTRACT

This article examines the transformation of the accountant's professional judgment in the context of the development of intelligent financial systems. The study is conducted in the format of a systematic review and analytical synthesis of academic publications focusing on the application of artificial intelligence in accounting and auditing, the specifics of digital data processing, and changes in professional decision-making processes. The primary focus is on the relationship between the characteristics of the digital environment, the logic of algorithmic information processing, and the formation of professional judgment. Key factors determining changes in its content are considered, including data quality, the functioning of algorithms, and control mechanisms. It is established that the influence of intelligent systems is indirect and is realized through changes in the structure of information formation with which the specialist operates. It is shown that professional judgment ceases to be procedural and acquires an interpretative and probabilistic nature, being formed on the basis of system-processed data. An original model is developed, reflecting the sequential interaction of data, algorithms, control mechanisms, and human interpretation in the process of decision formation. The results obtained make it possible to consider professional judgment as a system-conditioned element of the digital environment that determines the quality and stability of decision-making. The materials of the article may be useful for researchers in accounting and auditing, specialists in the digital transformation of financial functions, and practicing accountants and auditors working with intelligent systems.

KEYWORDS: professional judgment, accounting, artificial intelligence, intelligent financial systems, algorithmic decision-making, digital transformation, auditing.

1. INTRODUCTION

In the context of increasing complexity of the financial environment, the accounting profession is confronted with a transformation in the logic of forming and using financial information. The growth in data volumes and the intensification of analytical requirements are shifting financial systems from the automation of operations toward a model in which a significant portion of information undergoes

preliminary intelligent processing [3]. Artificial intelligence, in this regard, alters not only the tools but also the very structure of professional activity. Whereas previously it was built around the recording and verification of data, it is now shifting toward the interpretation of results and decision-making based on already processed information. Professional judgment ceases to be the application of rules; it becomes a critical engagement with a digitally constructed financial reality.

Under these conditions, the traditional understanding of professional judgment as a normative category proves insufficient. The accountant evaluates not only transactions and data quality, but also the stability of algorithms and the reliability of control mechanisms [5]. At the same time, risks associated with the opacity and distortions of digital systems are increasing. Despite the widespread interest in automation, the problem of the transformation of professional judgment remains only partially explored. Therefore, it is considered as a dynamic structure formed under the influence of data, intelligent systems, and human control, which allows for a reconsideration of the mechanism of its evolution.

The aim of the study is to develop and theoretically substantiate a conceptual model explaining the structural transformation of the accountant's professional judgment in the environment of intelligent financial systems. To achieve this aim, the following objectives are set:

- to analyze changes in the content of professional judgment under the influence of intelligent technologies;
- to identify the key factors determining its transformation;
- to assess the directions and strength of the impact of intelligent systems on accounting practice;
- to systematize the levels of transformation of professional judgment.

The research hypothesis is that the accountant's professional judgment in the context of intelligent financial systems transforms from a normative-procedural form into a hybrid analytical-interpretative model emerging at the intersection of data, algorithms, and human control. At the same time, it does not lose its role but evolves into a more complex form, where the key element is not the application of procedures, but the critical evaluation of digitally generated results and the making of final decisions.

The novelty of the research lies in identifying the structural dependence of professional judgment on the algorithmic environment and demonstrating that its transformation occurs not at the procedural level, but at the level of interaction between data, algorithms, and interpretative mechanisms. The practical significance of the study lies in the possibility of applying the proposed model to improve the organization of accounting processes, enhance the reliability of decision-making, and develop

professional competencies in the context of digital transformation.

2. MATERIALS AND METHODS

The study is based on methods of theoretical analysis of academic publications, conceptual systematization of approaches to professional judgment, and comparative analysis of factors determining its transformation in the context of intelligent financial systems. The primary focus is on identifying relationships between the characteristics of the digital environment, the use of intelligent technologies, and changes in the content of the accountant's professional judgment.

The study was conducted in the format of a systematic review of open-access academic publications from 2022–2025, presented in international peer-reviewed journals and academic databases. The literature search was carried out in Google Scholar, ScienceDirect, SpringerLink, and MDPI using combinations of keywords: “artificial intelligence in accounting,” “professional judgment accounting,” “AI in auditing,” “intelligent financial systems,” “algorithmic decision-making accounting,” and “AI governance accounting,” applying logical operators AND/OR. The sample included English-language publications containing theoretical or empirical analyses of the impact of intelligent technologies on accounting practice, professional judgment, and decision-making processes. Studies focused exclusively on technical aspects of automation without addressing professional judgment were excluded.

At the identification stage, 42 publications were selected. After removing duplicates and screening titles and abstracts, irrelevant studies were excluded. Full-text analysis resulted in a final sample of 15 sources corresponding to the research objectives.

The analytical procedure consisted of sequential stages: source identification, duplicate removal, selection based on thematic relevance, full-text analysis, and conceptual classification of findings. During the analysis, the following categories were identified: characteristics of the intelligent financial environment, parameters of intelligent technology use, changes in the content of professional judgment, and factors of control and interpretation of results. The comparison of findings was conducted through the analysis of identified factors and their impact on the structure of professional judgment.

The limitation of the sample is due to the narrow focus of the study, as a significant portion of publications in accounting and auditing is concentrated on process automation and technological efficiency, while issues related to the transformation of professional judgment are addressed only fragmentarily. The analyzed studies cover the impact of intelligent technologies on accounting practice, decision-making, control, and the role of data and algorithms in shaping professional

conclusions.

The results obtained were used to systematize the factors determining the transformation of professional judgment and to develop an original model reflecting the mechanism of its formation in the context of intelligent financial systems.

3. RESULTS

The dynamics of the adoption of intelligent systems in accounting and auditing practice demonstrate not a quantitative expansion of tools, but a qualitative shift in the logic of professional action. Where the sequence previously followed a progression from recording a fact to its verification and subsequent interpretation, the starting point now becomes a pre-processed result [8]. The system structures the field of attention: it identifies deviations, ranks risks, and forms an analytical basis prior to the specialist's intervention. Within this configuration, professional judgment ceases to function as a procedural transition between stages of information processing. It begins to take shape as a response to an already interpreted digital reality. It is precisely this circumstance that determines the direction of further changes [1].

The distribution of AI's influence across professional functions demonstrates pronounced asymmetry. This is fundamentally important, since a uniform effect would imply merely a universal increase in efficiency. However, the opposite is observed. The most significant changes are concentrated in those segments where decisions cannot be reduced to the application of rules and instead require the evaluation of significance, the comparison of factors, and engagement with uncertainty [13]. Table 1 examines the impact of the intention to use AI on the main directions of professional judgment.

**Table 1: The impact of the intention to use AI on the directions of professional judgment
(Compiled by the author based on source: [1])**

Area	β	P-value
Audit process	0,662	0,000
Audit planning	0,640	0,000
Financial reporting and taxation	0,640	0,000
Strategic planning and budgeting	0,630	0,000

Cost accounting	0,623	0,000
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Note: The “Area” column indicates the area of accounting activity that was examined. The “ β ” column reflects the regression coefficient, showing the strength and direction of the impact of the intention to use AI on the respective area—the higher the value, the stronger the effect. The “P-value” column indicates the statistical significance of the result, where values below 0.05 indicate a significant effect.

The maximum value observed in the auditing process captures the core shift. The search and verification of information are replaced by the interpretation of deviations already identified by the system. The specialist is no longer confronted with an uncertain data environment, but with pre-selected signals that require an assessment of their economic significance. As a result, professional judgment undergoes structural reconfiguration. Its object is no longer the fact itself, but the correctness and relevance of the algorithmically generated conclusion [11].

Comparable values in audit planning and reporting indicate that the transformation extends to stages where the logic of attention allocation and priority selection is formed [4]. A fundamental mechanism becomes evident here: AI influences professional judgment not by changing the outcome, but by altering the order in which information is formed. When data is already aggregated, classified, and analytically processed, the decision space narrows while simultaneously becoming more complex. Judgment is no longer formed from a wide range of alternatives, but from a limited set of pre-defined scenarios [9].

At the level of strategic planning and budgeting, the effect becomes even more pronounced. In these domains, professional judgment acquires a predictive form. The specialist relies on probabilistic assessments, scenario models, and forecasting relationships. However, it is precisely here that an internal contradiction of digital transformation emerges. The expansion of analytical capabilities is accompanied by an increase in interpretive uncertainty, as system outputs are based on models whose assumptions and limitations are not always transparent [15]. Consequently, the more AI enhances analytical depth, the higher the risk of false confidence in the results. Professional judgment is simultaneously strengthened and made more vulnerable.

Taken together, the observed relationships make it possible to establish that professional judgment can no longer be understood as the application of rules to data. It becomes a process of selecting, verifying, and interpreting algorithmically prepared signals. Accordingly, its structure shifts from a rule-based to a decision-oriented logic, where the central issue is no longer procedural compliance, but the assessment of the reliability of digital outputs. The intensity of these changes is determined not by the mere fact of AI implementation, but by the conditions under which the specialist interacts

with the intelligent system. Table 2 presents the key relationships reflecting the role of AI training, usage, and knowledge in the transformation of professional judgment.

Table 2: Factors influencing AI's impact on professional judgment and accounting processes
(Compiled by the author based on source: [2])

Factor	Coefficient (β)	Significance
Readiness for change → accounting effectiveness	0,9235	< 0,0001
Frequency of AI use → transaction processes	0,2095	0,003
AI usage → need for training	0,2387	0,024
AI knowledge → actual application	0,1016	0,002
Excessive AI use → efficiency decline	- 0,2210	< 0,0001

Note: The "Factor" column reflects the direction of the relationship between variables. The "Coefficient (β)" column indicates the strength and direction of the effect: positive values indicate an increase in the effect, while negative values indicate its reduction. The "Significance" column characterizes the statistical significance of the results, where lower values indicate a higher reliability of the identified relationships.

The readiness coefficient demonstrates that the central channel of transformation is not the technology itself, but the specialist's ability to restructure their own cognitive model. This allows for a more rigorous conclusion: AI does not directly change professional judgment. It alters the environment in which judgment is formed. If the specialist does not adapt to this environment, their judgment remains procedural and does not integrate with digital outputs. If adaptation occurs, judgment becomes part of a hybrid system in which decisions are formed at the intersection of human and algorithmic logic [14].

The negative effect of excessive AI use reveals the second side of this process. Increasing dependence on automated outputs reduces the intensity of critical evaluation and thereby undermines the quality of decisions. A paradox emerges: a tool designed to enhance analytical capabilities, when overused, leads to their weakening. Therefore, its development is determined not by maximizing AI usage, but by optimizing interaction with it [6]. Table 3 examines the impact of AI implementation on the key aspects of accounting activities.

Table 3: The impact of AI implementation on key aspects of accounting activities (Compiled by the author based on source: [5])

Indicator	R value	R ² value	Interpretation
Efficiency and data quality	0.899	0.809	Strong AI influence
Fraud detection and taxation	0.972	0.945	Very strong AI influence
Skills and job tasks	0.829	0.688	Moderately strong influence

Note: The “Indicator” column denotes the analyzed dimension. The “R value” column shows the strength of the correlation between AI implementation and the corresponding indicator (the closer to 1, the stronger the relationship). The “R² value” column reflects the proportion of explained variance, that is, the extent to which changes in the indicator are driven by the impact of AI. The “Interpretation” column provides a qualitative interpretation of the strength of the identified effect.

The maximum effect observed in fraud detection indicates that AI exerts the strongest influence in areas requiring the identification of hidden patterns. However, this does not imply the replacement of professional judgment. On the contrary, it shifts to the level of assessing the reliability of the signal. The system detects a deviation, but it is the specialist who determines whether it is material, whether it is driven by data quality issues, or by model-specific characteristics. This reflects a fundamental transition: judgment becomes probabilistic and context-dependent, as its object is no longer facts, but interpretations [7].

High indicators in the area of data quality highlight an even deeper transformation. Professional judgment no longer relies on the primary verification of information. It is formed on the basis of already cleaned and structured data, making it dependent on the quality of digital infrastructure [12]. Errors no longer necessarily arise at the level of individual operations; they may be embedded in the very logic of data processing.

The overall results demonstrate that, within intelligent financial systems, professional judgment is formed in a configuration fundamentally different from that of traditional accounting practice. Its structure is increasingly determined by the interaction of three interrelated components—data, algorithmic models, and human interpretation. The analytical role of the specialist shifts from autonomous evaluation to operating within an environment where a significant portion of the informational foundation has already been pre-processed and structured by the system. Under these

conditions, what becomes critical is the expansion of analytical capabilities and the ability of the specialist to maintain critical distance from algorithmic outputs, assessing their applicability, limitations, and context of use.

4. DISCUSSION

The rapid adoption of artificial intelligence in financial systems does not merely accelerate accounting procedures. It gradually transforms the very logic of professional thinking. In traditional practice, accountants and auditors relied on rules and examined completed transactions. The workflow followed a sequential structure: recording, verification, and then interpretation. In a digital environment, this sequence becomes blurred. A significant portion of processing occurs before the specialist's involvement. As a result, professional judgment is formed at the level of analyzing results rather than primary data.

The observed shift from a rule-based to a data-driven logic is associated not so much with automation as with a change in the source of information. Specialists increasingly work with data that have already undergone algorithmic processing. In such conditions, the key issue becomes understanding how the result was produced. Interpretation comes to the forefront. Professional judgment begins to take shape as a response to already structured information rather than as an initial evaluation of an economic event.

At the same time, the predictive nature of analysis is intensifying. Financial information is increasingly used to assess future states rather than merely record the past. Working with probabilities becomes part of everyday practice. This changes the requirements for judgment. It must account for uncertainty and allow for multiple possible scenarios. In such an environment, determinacy gives way to the evaluation of risk and probability.

Context acquires particular importance. The same result may carry different meanings depending on the conditions of its application. In auditing, this is reflected in the assessment of the materiality of deviations. An algorithm may identify an anomaly, but its interpretation depends on the professional context. Therefore, judgment becomes sensitive to the environment in which it is formed.

These changes affect both the form and content of professional judgment. It is no longer limited to the analysis of financial indicators. Attention shifts to the conditions under which these indicators are formed. The specialist evaluates not only the result but also the data on which it is based. Data quality, completeness, and origin become integral components of professional assessment.

A significant role is assigned to algorithms. It becomes necessary to understand how the system

generates its outputs and where the boundaries of its reliability lie. The opacity of models complicates this task. As a result, the evaluation of algorithms becomes part of professional activity.

At the same time, risk management becomes more complex. The automatic detection of deviations does not eliminate uncertainty; rather, it shifts it to the level of interpretation. The specialist must determine the significance of identified signals and align them with professional standards. This creates the need to reconcile probabilistic assessments with practical experience.

Assessment is also linked to governance. The reliability of results depends on how control and audit are organized within the system. Without considering these mechanisms, it is impossible to evaluate the credibility of information. In this context, professional judgment includes the analysis of governance architecture [10].

The ethical dimension becomes part of the evaluation. The use of algorithms is associated with risks of bias and opacity. Therefore, professional judgment must take into account the economic and regulatory admissibility of decisions [13]. Ultimately, the focus shifts from the numbers themselves to the infrastructure through which they are generated. Figure 1 presents the model reflecting the reconfiguration of professional judgment in the context of intelligent financial systems.

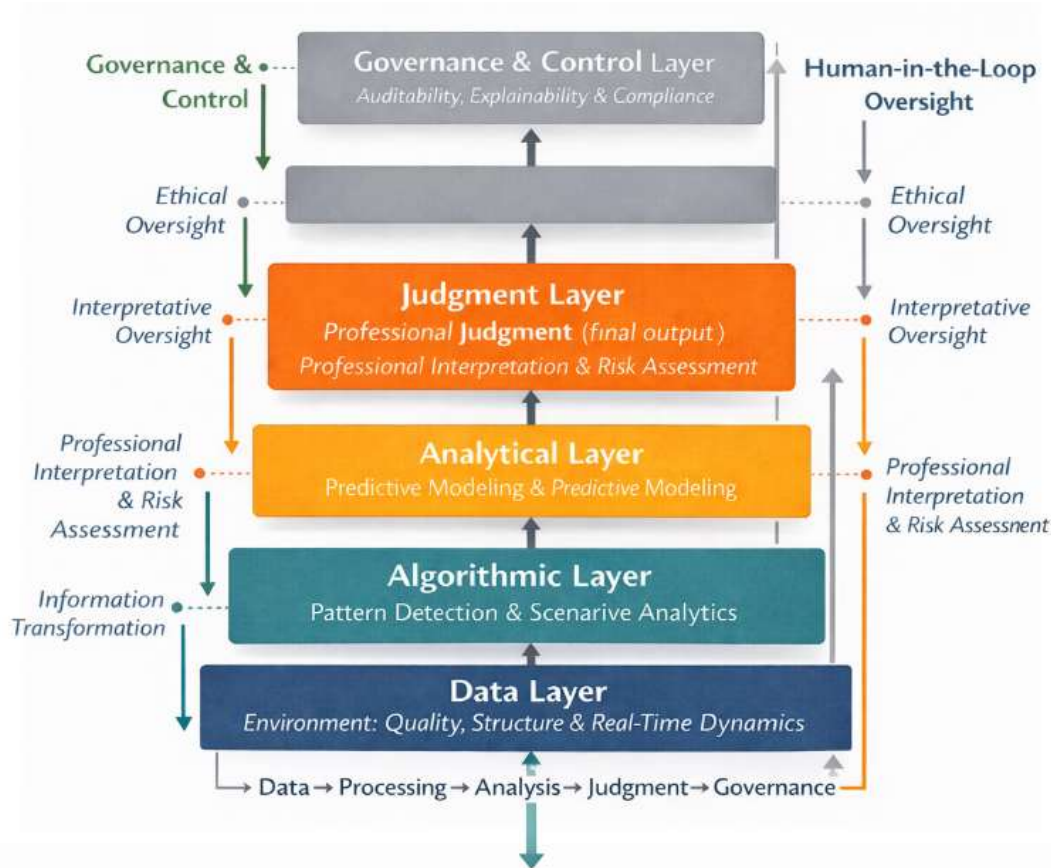


Figure 1: Model of the evolution of professional judgment in intelligent financial systems (Author's development)

The proposed model is not considered an empirically verified predictive construct, but rather serves as a conceptual synthesis of relationships identified in the analyzed studies. Its structure is formed on the basis of consistently reproducible patterns documented in the literature, including the increasing dependence of professional judgment on data quality, the logic of algorithmic processing, the interpretative role of the specialist, and control mechanisms. In this sense, the model is conceptually supported by the identified relationships and is consistent with the analyzed empirical and theoretical findings. Its explanatory value lies in integrating previously fragmented observations into a unified analytical framework that reflects the mechanism of professional judgment formation in the context of intelligent financial systems. Therefore, the model should be regarded as an analytical framework for interpreting the transformation of professional judgment, while its further empirical validation remains a task for future research.

At the core of the model lies the data environment, which defines the boundaries of analysis through the volume, quality, and speed of information updates. Data is not used directly but undergoes a stage

of algorithmic processing, during which structured outputs and signals are generated. At this level, a gap emerges between the result and its explanation. The subsequent formation of decisions occurs through the interpretation of these outputs, making them dependent on the accuracy of the underlying data and the logic of the applied models. Accordingly, errors arising at earlier stages are transmitted into the final assessment. Over this process, control frameworks are established, determining the admissibility of using the results and the level of trust in them.

Within this configuration, professional judgment is not separated from the system but emerges within it as a result of the interaction between data, algorithms, and control mechanisms, while responsibility remains with the human actor. The specialist operates not with individual transactions but with their digital representations and makes decisions in an environment where interpretation becomes the central element of the entire analytical logic.

5. CONCLUSION

The results obtained make it possible to consider the accountant's professional judgment as a process formed within an intelligent financial system rather than as an autonomous act of data analysis. Its content is determined by the nature of the specialist's interaction with already processed information and depends on the extent to which this information is perceived as justified and interpretable. Under these conditions, judgment arises not at the level of recording facts, but within the space of evaluating algorithmically generated outputs.

The coherence of elements within the digital environment plays a decisive role. Even with high accuracy of individual components, such as data or models, the final assessment remains unstable if the process of information formation is fragmented. When consistency is ensured between the stages of processing, interpretation, and control, an integrated logic emerges within which decisions become more substantiated. In this configuration, professional judgment begins to perform the function of integrating results rather than their primary analysis.

The practical significance lies in the need to reconsider approaches to organizing accounting and analytical processes. The stability of decisions depends on the ability to build a coherent system of interaction between data, algorithms, and control mechanisms. Technological tools remain important; however, their impact is limited without the development of interpretative skills and the critical evaluation of results.

The research hypothesis has been confirmed, as the study demonstrates that professional judgment evolves from a procedural construct into a hybrid analytical-interpretative model shaped by the interaction between data, algorithms, and human control.

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