

Article

Formal Harmonization, Persistent Accounting Uncertainty: Practitioner Evidence on Crypto-Asset Valuation After MiCA in Slovakia

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Abstract

The Markets in Crypto-Assets Regulation (MiCA) harmonizes market rules across the European Union, but it does not itself determine how entities should classify, measure, document, and tax crypto-asset transactions. This study examines whether Slovakia's recent implementation measures have translated formal harmonization into operational accounting clarity. An anonymous online survey of 34 accounting, tax, finance, and business professionals recruited through purposive and convenience sampling was analyzed using counts, percentages, a descriptive cross-tabulation with Cramér's V , and a documented but limited coding of two open-ended items. Because the sample is small and non-probability, all results are interpreted as indicative of the observed respondents rather than as population estimates. In the sample, 52.9% assessed the direction of legislative development positively, 72.7% of valid respondents considered current valuation rules inadequate, 60.6% reported that the reforms had not increased accounting clarity, and 60.6% perceived greater uncertainty. Tax obligations (50.0%) and record-keeping and documentation (35.3%) were selected more often than bookkeeping mechanics (14.7%). Practical experience co-varied with legislative monitoring in the realized sample (Cramér's $V = 0.62$), although no population-inferential p -values or confidence intervals are reported. The pattern suggests a regulatory–operational clarity gap: legal taxonomy and market supervision have advanced faster than implementable valuation and documentation guidance. The proposed implementation framework combines survey indications with regulatory analysis, prior literature, and the authors' professional judgment; it is a non-ranked proposal for consultation and further testing rather than a set of empirically validated policy priorities. Although derived from Slovakia, the framework is relevant to other EU jurisdictions translating MiCA's common market rules into national accounting and tax practice.



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1. Introduction

Crypto-assets, including cryptocurrencies and payment-oriented tokens that can perform digital-cash-like functions, have moved from a technologically specialized phenomenon into investment, payment, financing, and treasury practice. Their economic functions are heterogeneous: some tokens are used primarily for exchange or speculation,

some reference assets or official currencies, and others grant access to goods, services, governance rights, or digitally represented claims. Markets in Crypto-Assets Regulation (MiCA) responds to that heterogeneity by establishing a directly applicable European Union framework for the issuance, public offering, admission to trading, and servicing of crypto-assets [1]. The regulation is a major step toward a common legal vocabulary and a supervised single market, but market regulation and financial reporting address different questions. MiCA determines who may issue or service crypto-assets and under which disclosure and conduct rules; accounting must still determine what the reporting entity controls, how the item should be classified, how its value should be established, and when gains, losses, revenue, and tax consequences arise.

Legal scholarship generally expects MiCA to increase formal legal certainty by replacing fragmented national approaches with a uniform framework [2]. Early empirical work with crypto-industry experts likewise identifies benefits from regulatory legitimacy, passporting, investor protection, and market consolidation, while also reporting compliance costs and residual ambiguity [3]. From an accounting perspective, however, the diversity of token rights and business models prevents a single label from producing a single recognition or measurement outcome. A MiCA-compliant crypto-asset may still require a distinct accounting analysis based on the holder's purpose, the issuer's obligations, the existence and liquidity of markets, and the quality of price evidence [4].

The international accounting architecture remains incomplete. For the limited subset of cryptocurrencies considered by the IFRS Interpretations Committee, IAS 2 applies when holdings are kept for sale in the ordinary course of business; otherwise, IAS 38 applies [5]. This interpretation supplies a minimum route through existing standards, yet the intangible-asset model has been criticized for failing to represent the economic characteristics and market volatility of many holdings [6–8]. Evidence from global corporate reporting documents inconsistent classification, measurement, presentation, and cash-flow treatment [9]. Interviews with standard-setters, practitioners, academics, and professional bodies similarly show demand for clarification, while recognizing that rapid innovation complicates prescriptive standard setting [10,11]. Stakeholder outreach in Australia identifies valuation, active-market assessment, custody, issuer accounting, and disclosure as continuing practical problems [12]. The contrast with the United States is notable: FASB Accounting Standards Update 2023-08 requires in-scope crypto-assets to be measured at fair value through earnings, accompanied by specific presentation and disclosure rules [13]. In 2025, the IASB again listed crypto-assets and related transactions among potential projects and recorded continuing concerns about the usefulness of IAS 38 and the need to address a broader range of holdings, issuances, and custody arrangements [14].

Slovakia offers an informative post-MiCA setting for three reasons. First, before the recent reforms, national accounting rules already treated relevant virtual-currency holdings as short-term financial assets, a model that differs from the usual IFRS route [15]. Second, Act No. 248/2024 Coll. implemented national elements of MiCA and amended accounting and income-tax legislation with effect from 1 January 2025 [16]. The reforms replaced the narrower term “virtual currency” with “crypto-asset”, introduced explicit treatment for e-money tokens, expanded issuer accounting, required analytical records by individual crypto-asset, and aligned non-fiat exchanges with tax valuation rules [17–22]. The transition to licensed crypto-asset service providers was completed in Slovakia on 30 December 2025 [23]. Third, the case has broader EU relevance: MiCA supplies a common market taxonomy, while accounting procedures, tax rules, and implementation guidance continue to operate substantially through national systems. Slovakia therefore provides a focused setting in which to examine whether EU-level legal harmonization is sufficient to produce consistent reporting practice within a distinctive national accounting and tax environment.

The formal framework became more detailed, but its operational effect on accountants, tax advisers, finance professionals, and businesses had not been empirically evaluated.

This article develops the concept of a regulatory–operational clarity gap: the distance between a legally defined and supervised market on the one hand and practitioners’ ability to apply consistent, auditable classification, valuation, documentation, and tax procedures on the other. The concept does not imply that MiCA was designed as an accounting standard. Rather, it asks whether accompanying national rules and guidance convert regulatory categories into workable reporting decisions. The study addresses four research questions: (RQ1) How do respondents assess the direction and practical impact of recent crypto-asset legislation? (RQ2) Do they regard current valuation and accounting rules as adequate, clear, and uncertainty-reducing? (RQ3) How does practical crypto-asset accounting experience co-vary with the frequency of monitoring legislative change within the observed sample? (RQ4) Which operational areas and improvement priorities are suggested by respondent selections and the limited open-response coding?

The contribution is threefold. First, the article provides rare post-implementation evidence from a Central European jurisdiction in which MiCA-related market, accounting, and tax changes arrived in a concentrated period. Second, it reports transparent counts, valid-case percentages, and a sample-level cross-tabulation of practical experience and regulatory monitoring while explicitly avoiding population inference from non-probability data. Third, it integrates the survey indications with regulatory analysis and prior literature to develop an evidence-informed implementation framework for valuation evidence, transaction documentation, and accounting–tax coordination. The framework is not presented as a set of instruments directly ranked or validated by respondents. The observed responses point to cautiously positive views of legislative direction alongside persistent dissatisfaction with valuation rules and perceived operational uncertainty.

2. Regulatory and Accounting Context

2.1. MiCA Harmonization and the Limits of Legal Taxonomy

MiCA defines a crypto-asset broadly as a digital representation of value or of a right that may be transferred and stored electronically using distributed-ledger or similar technology [1]. Its architecture distinguishes asset-referenced tokens, e-money tokens, and other crypto-assets, with utility tokens included within the latter category when they are intended to provide access to a good or service supplied by the issuer. It also establishes obligations for white papers, marketing communications, authorization, governance, custody, client protection, market integrity, and supervision. Titles governing asset-referenced and e-money tokens became applicable before the remainder of the regime, and the framework became generally applicable at the end of 2024, subject to national transitional arrangements.

This taxonomy improves the legal identification of products and the allocation of regulatory responsibilities. Van der Linden and Shirazi argue that a uniform, directly applicable framework should reduce the uncertainty generated by divergent national regimes [2]. Yet legal certainty is not a binary condition. Expert interviews conducted around MiCA implementation identify organizational benefits alongside ambiguous boundaries, substantial compliance work, and the need for interpretation in novel business models [3]. The same distinction is central to accounting: a legal category can narrow the range of plausible treatments without determining the reporting outcome in every holder, issuer, or intermediary context.

For financial reporting, the unit of analysis is the economic substance of the right or obligation and the reporting entity’s relationship to it. A token described in a white paper as providing access to a future service may create deferred revenue or another performance

obligation for the issuer; the same token may be a prepayment, an investment, an inventory item, or another asset for the holder. An e-money token linked to one official currency is economically different from an unbacked payment token. Similarly, tokenization does not automatically convert an underlying non-financial right into cash or a financial instrument. Consequently, accounting guidance must connect token rights, control, business purpose, market evidence, and transaction lifecycle rather than relying solely on technological form [4].

2.2. Recognition and Valuation Under an Incomplete International Framework

The IFRS Interpretations Committee's June 2019 agenda decision addressed holdings of a narrowly defined cryptocurrency: a digital or virtual currency recorded on a distributed ledger, not issued by a jurisdictional authority or another party, and not giving rise to a contract between the holder and another party. The Committee concluded that such a holding is an identifiable non-monetary asset without physical substance. IAS 2 applies when it is held for sale in the ordinary course of business, including the broker-trader exception where appropriate; otherwise IAS 38 applies [5]. The decision does not establish a comprehensive model for stablecoins, utility tokens, security-like tokens, NFTs, tokenized claims, custody arrangements, mining, staking, decentralized finance, or issuer obligations.

Several weaknesses follow. Under the IAS 38 cost model, upward market movements may not be recognized while impairment losses are recognized, producing an asymmetric carrying amount that can diverge materially from current economic value. The revaluation model depends on an active market, a condition that can be difficult to establish for heterogeneous or thinly traded tokens. Procházka compared competing IFRS models and emphasized that the choice among intangible assets, inventory, cash-like treatment, and fair value has substantial consequences for relevance and comparability [6]. EFRAG's discussion paper documented gaps for both holders and issuers, including classification, valuation, mining, utility and hybrid tokens, custody, and initial coin offerings [7]. Its subsequent recommendations favored clarification or amendment of existing standards, including a route to fair value through profit or loss for relevant crypto-assets and more complete issuer disclosures [8].

Empirical reporting evidence supports these concerns. Luo and Yu's analysis of 40 global companies exposed to cryptocurrencies found inconsistent application of U.S. GAAP and IFRS and distortions affecting asset value, liquidity, profitability, and cash-generation assessments [9]. Chou, Agrawal, and Birt found that stakeholder groups viewed current principles as potentially capable of addressing many transactions but still wanted clarification and continuous monitoring as crypto-assets evolve [10]. Ramassa and Leoni showed that accounting for cryptocurrency holdings illustrates the difficulty of standard setting under rapid technological change, where agenda decisions, lobbying, and institutional boundaries influence the timing and form of guidance [11]. AASB outreach similarly identified valuation and the active-market test as critical practical issues and called for educational guidance for preparers and auditors [12].

FASB's response provides a useful counterpoint. ASU 2023-08 requires qualifying fungible crypto-assets to be subsequently measured at fair value, with changes in net income and separate presentation and disclosure [13]. The scoped model does not solve all crypto-asset accounting questions, but it demonstrates that targeted rules can prioritize current value and comparability. The IASB's 2025 agenda material confirms that stakeholder concern remains live: possible work includes crypto-assets within the intangible-assets project, expansion of financial-instrument scope, or a broader project covering direct holdings, custodial holdings, stablecoins, security tokens, and issuer transactions [14]. The

international debate therefore remains open precisely where national practitioners must already prepare accounts and tax evidence.

2.3. Slovak Implementation: From “Virtual Currency” to Crypto-Asset Procedures

Slovak legal literature had long noted that the terminology and tax treatment of digital currencies developed incrementally and did not map neatly onto traditional monetary categories [24,25]. Before MiCA implementation, Slovak national accounting already differed from IFRS by treating relevant virtual-currency holdings as short-term financial assets rather than applying the general intangible-asset model [15]. The 2024–2025 reforms retained the national financial-asset orientation but broadened terminology and introduced distinctions that mirror MiCA’s token taxonomy.

Act No. 248/2024 Coll. amended the Accounting Act and Income Tax Act from 1 January 2025 [16,17,21]. The Accounting Act now uses “crypto-asset” in place of “virtual currency” and explicitly addresses e-money tokens. Such tokens are measured at nominal value and excluded from the relevant fair-value provisions [19]. The implementing accounting measure places them among bank-account-type short-term financial assets, for example in account 222, because MiCA treats them as electronic money [18,20]. Other crypto-assets are recorded within short-term financial assets using an entity-created account, for example, account 258, with analytical accounts differentiated by individual crypto-asset. The same measure adds issuer accounting for utility tokens and other crypto-assets, linking revenue recognition to the issuer’s obligations in the white paper; if no obligation exists for an “other crypto-asset”, revenue is recognized when consideration is received [18,20].

The tax amendments increase the evidentiary importance of valuation. For income-tax purposes, a sale of a crypto-asset includes an exchange for property, another crypto-asset, a service, or an onerous transfer. An exchange is included in the tax base in the period in which it occurs using the fair value of the exchanged crypto-asset on the exchange date [21,22]. This means that a crypto-to-crypto transaction can require a defensible euro valuation even when no fiat currency is received. The record-keeping burden therefore extends beyond the accounting entry to timestamps, quantities, fees, exchange rates, wallet or exchange records, and the method used to establish fair value.

Table 1 summarizes the translation from regulatory change to operational accounting demands. It shows why formal specificity can coexist with implementation uncertainty: the reforms identify categories and accounts, but practitioners still need repeatable methods for selecting market data, handling low liquidity, documenting non-fiat exchanges, and interpreting new token structures.

Table 1. Regulatory-to-operational translation of recent Slovak crypto-asset reforms.

Reform Element	Legal/Accounting Treatment	Effective Date	Operational Consequence
Terminology	“Virtual currency” replaced by the broader MiCA-aligned term “crypto-asset”.	1 January 2025	Policies, charts of accounts, contracts, and tax documentation must use a broader classification logic.
E-money tokens	Measured at nominal value; excluded from specified fair-value treatment; recorded as bank-account-type short-term financial assets (e.g., account 222).	1 January 2025	E-money tokens must be separated from unbacked or other crypto-assets at recognition and closing.
Other crypto-assets	Recorded in short-term financial assets using an entity-created account (e.g., account 258); analytical records are maintained by individual crypto-asset.	1 January 2025	Entity-level policies must define asset-by-asset records, acquisition cost, price source, fees, and disposal tracking.

Table 1. *Cont.*

Reform Element	Legal/Accounting Treatment	Effective Date	Operational Consequence
Issuer accounting	Utility-token and other-token proceeds are linked to obligations described in the crypto-asset white paper; revenue timing depends on performance or the absence of an obligation.	1 January 2025	Accounting analysis must connect token terms to performance obligations and revenue recognition.
Income-tax realization	Exchange for property, services, or another crypto-asset is treated as a sale; fair value on the exchange date enters the tax base.	1 January 2025	Every non-fiat exchange may require a supportable euro valuation and a complete audit trail.
Crypto-asset services	Only MiCA-authorized providers may provide crypto-asset services in Slovakia after the national transition.	30 December 2025	Counterparty due diligence and documentation should identify the licensed service provider and source records.

Sources: [16–23]. The table presents an operational synthesis; it is not a substitute for legal or tax advice.

Valuation is especially difficult because crypto-asset trading is fragmented across venues, quoted pairs, jurisdictions, and liquidity conditions. Identifying the principal or most advantageous market may require more than selecting the most familiar exchange. Beigman et al. propose a dynamic approach to principal-market determination and show why venue fragmentation challenges conventional fair-value assumptions [26]. Their later work addresses assets that do not trade directly against the functional currency or lack sufficient direct volume, illustrating the need for documented pricing paths and liquidity assessments [27]. These issues make the provenance of a price—venue, timestamp, pair, volume, fees, and exchange-rate conversion—part of the accounting evidence, not merely an operational detail.

3. Materials and Methods

3.1. Research Design and Instrument

The study used a cross-sectional, exploratory survey with predominantly closed questions and two open-ended items to capture professional perceptions during the post-reform period. An online questionnaire was selected because the target population was geographically dispersed and included accountants, tax advisers, finance professionals, and entrepreneurs. Participation was voluntary and anonymous. The opening page explained the research purpose, stated that responses would be analyzed only in aggregate, and estimated a completion time of three to five minutes.

The instrument contained 14 questions. Appendix A reproduces the exact item wording, response options, and routing. Questions 1–3 described occupational role, length of professional practice, and practical experience with crypto-asset accounting. Question 4 measured legislative monitoring; Question 5 assessed legislative direction and included a neutral midpoint; Questions 6–8 addressed work impact, affected areas, and perceived clarity; Question 9 asked whether accounting procedures had changed and routed affirmative respondents to the open-ended Question 10; Questions 11–13 addressed valuation impact, adequacy of valuation rules, and certainty versus uncertainty; and Question 14 invited an open-ended recommendation. The respondent-facing questionnaire used the broader term “digital assets”; the analytical sections use the legally more precise term “crypto-assets”, except when the original wording is reproduced.

The questionnaire was an ad hoc instrument designed for descriptive exploration rather than a validated psychometric scale. Constructs such as clarity, certainty, adequacy,

and work impact were measured by single items. Questions 8, 11, and 12 used four-category directional options, while Question 13 explicitly contrasted certainty and uncertainty. No formal cognitive pretest, factor analysis, internal-consistency assessment, or validation against an external criterion was performed. Accordingly, no psychometric reliability or latent-construct claim is made, and the resulting measurement limitations are addressed in Section 5.6.

Because the target population is dispersed and is not identifiable through a single comprehensive sampling frame, recruitment used purposive and convenience sampling. The questionnaire link was circulated electronically to accessible members of the target professional groups—Slovak accountants, tax advisers, finance professionals, and entrepreneurs—rather than to the general public. Prior crypto-asset accounting experience was not required, allowing the sample to include regular, occasional, and non-experienced respondents. The retained recruitment documentation does not identify all circulation channels, invitation counts, or nonresponse rates, so these quantities cannot be reconstructed. All 34 sufficiently complete submissions were retained, and missing values were handled item by item as described in Section 3.2. Of the respondents, 23 (67.6%) reported at least occasional experience with crypto-asset accounting. This approach provided exploratory access to relevant professional perspectives but did not produce a representative or probability-based sample.

3.2. Sample and Data Preparation

A total of 34 responses were retained. No identifying or sensitive personal data were requested. One respondent omitted several later items, leaving 33 valid responses for the questions on procedural change, valuation impact, valuation adequacy, accounting clarity, and certainty. Percentages for those items are therefore calculated on the valid-case denominator ($n = 33$), not on the full sample. For the multiple-response question, percentages use $n = 34$ and do not sum to 100% because respondents could select more than one area.

Responses were summarized at their original item level wherever the retained aggregate counts allowed. For readability, a limited set of directional summaries was also formed using the sign implied by the response labels: “improves” plus “rather improves”; “significantly” plus “rather yes”; “yes, significantly” plus “rather yes”; “rather no” plus “no”; and “rather more uncertainty” plus “more uncertainty”. These are item-specific recodings, not independent outcomes or a composite scale. Because the retained analytical file contains aggregate totals rather than respondent-level records for every original response category, alternative cutoffs, monotonicity checks, and respondent-level sensitivity analyses could not be performed. The grouped shares are therefore reported only as transparent descriptive summaries and are not used to multiply the amount of evidence.

The two open-ended items were handled as a limited descriptive content analysis. The unit of coding was the complete response, and one response could receive more than one code when it explicitly named distinct operational topics. A code was assigned only when the topic was stated directly or through an unambiguous synonym; vague statements were assigned to the broadest justified category and were not given a second, more specific code unless that subject was also named. The original topic labels and aggregate counts were formalized into a retrospective codebook (Appendix B) that documents operational definitions, inclusion indicators, and boundary rules. The retained analytical file does not contain verbatim responses, coder-by-response assignments, a formal coder-training record, or evidence of independent double coding. Consequently, illustrative quotations and inter-coder reliability cannot be reconstructed and are not claimed. The thematic counts are used only as contextual signals, not as systematic qualitative evidence or as a direct ranking of policy instruments.

3.3. Statistical Analysis

Analysis consisted of absolute frequencies and percentages for the realized sample. No confidence intervals or inferential p -values are reported because a repeated-sampling interpretation would be inappropriate for a purposive and convenience sample and could imply a degree of representativeness not supported by the design. The 3×3 table crossing practical accounting experience (regular, occasional, none) with legislative monitoring (regularly, sometimes, never) is presented in full and summarized with row percentages. Cramér's V is retained only as a descriptive coefficient of association for the realized table.

All derived summaries share respondents and several arise from conceptually related questions; they are therefore not treated as statistically independent outcomes or accumulated as separate inferential tests. No weighting, multivariable modeling, subgroup significance testing, or causal attribution was attempted. Every percentage refers only to the observed sample and the stated valid-case denominator. The calculations are reproducible from the aggregate counts reported in Tables 2–5, but respondent-level sensitivity checks are not possible with the retained analytical file.

Table 2. Characteristics of the survey sample ($n = 34$).

Characteristic	Category	n	%
Occupational role	Accountant	10	29.4
	Tax adviser	7	20.6
	Entrepreneur	8	23.5
	Finance professional	4	11.8
	Other	4	11.8
	Not reported	1	2.9
Professional practice	<1 year	3	8.8
	1–3 years	9	26.5
	4–7 years	14	41.2
	>7 years	8	23.5
Crypto-asset accounting experience	Regular	9	26.5
	Occasional	14	41.2
	None	11	32.4

Percentages may differ from 100% by 0.1 percentage point because of rounding.

Table 3. Selected directional summaries for the observed sample.

Indicator (Combined Response Direction)	Item	x/n	Observed Share (%)	Category Definition
Practical experience	Q3	23/34	67.6	Regular or occasional
Monitors legislation	Q4	27/34	79.4	Regularly or sometimes
Positive legislative direction	Q5	18/34	52.9	Improves or rather improves
Material work impact	Q6	15/34	44.1	Significantly or rather yes
Valuation affected	Q11	20/33	60.6	Yes, significantly or rather yes
Valuation rules inadequate	Q12	24/33	72.7	Rather no or no
No added accounting clarity	Q8	20/33	60.6	Rather no or no
Greater uncertainty	Q13	20/33	60.6	Rather more or more uncertainty

Rows share respondents and are not statistically independent. The combined categories are reported only as readable item-level summaries; they are not a composite scale and no population inference is intended.

Table 4. Practical crypto-asset accounting experience by frequency of monitoring legislative change.

Accounting Experience	Monitors Regularly	Monitors Sometimes	Does Not Monitor	Row Total
Regular	6 (66.7%)	3 (33.3%)	0 (0.0%)	9
Occasional	3 (21.4%)	11 (78.6%)	0 (0.0%)	14
None	0 (0.0%)	4 (36.4%)	7 (63.6%)	11
Column total	9	18	7	34

Cells show *n* (row percentage), except totals. Cramér's $V = 0.620$ is reported as a descriptive association coefficient for the realized table; no population-inferential *p*-value is reported.

Table 5. Retained aggregate coding counts for the two open-ended items.

Open-Ended Item	Retrospective Theme	Aggregate Occurrences
Changes made	Record-keeping and documentation	9
	Valuation and currency conversion	5
	Accounting procedure and internal methodology	4
	Classification and account structure	2
	No change	1
Desired improvements	Clearer guidance and worked examples	7
	Specific situations and asset types	6
	Tax regime and tax treatment	5
	Unified accounting and reporting	4
	Valuation rules	3
	Support for entrepreneurs and small firms	2

One response could contain more than one theme, so counts are overlapping and do not represent mutually exclusive respondents or ranked preferences. The retrospective codebook is provided in Appendix B. Verbatim quotations and inter-coder reliability are unavailable and are not claimed.

4. Results

4.1. Sample Characteristics

The sample included 10 accountants (29.4%), eight entrepreneurs (23.5%), seven tax advisers (20.6%), four finance professionals (11.8%), four respondents in other professional roles (11.8%), and one respondent who did not report an occupational category. Twenty-two respondents (64.7%) had at least four years of professional practice. Twenty-three respondents (67.6%) reported regular or occasional practical experience with crypto-asset accounting. Thus, the sample combined directly experienced practitioners with professionally relevant respondents who had not yet processed such transactions; this composition describes the realized sample only and is not a population profile.

4.2. Regulatory Engagement and Perceived Direction

Twenty-seven respondents (79.4%) monitored Slovak or EU legislative changes regularly or sometimes. Regular monitoring was reported by nine respondents, occasional monitoring by 18, and no monitoring by seven. The overall direction of legislation received a cautiously positive assessment: five respondents selected “improves” and 13 “rather improves”, yielding 18 of 34 positive-direction responses (52.9%). Nine perceived no marked change, while seven viewed the direction as rather or clearly worsening.

The observed cross-tabulation shows a pronounced sample pattern between practical experience and regulatory monitoring. Among nine respondents with regular accounting experience, six monitored legislation regularly and three sometimes; none reported no monitoring (Figure 1). Among 14 respondents with occasional experience, three monitored regularly and 11 sometimes. By contrast, seven of the 11 respondents without experience did not monitor legislation. Cramér's V for the realized 3×3 table is 0.620, which describes a strong within-sample association but does not support population inference.

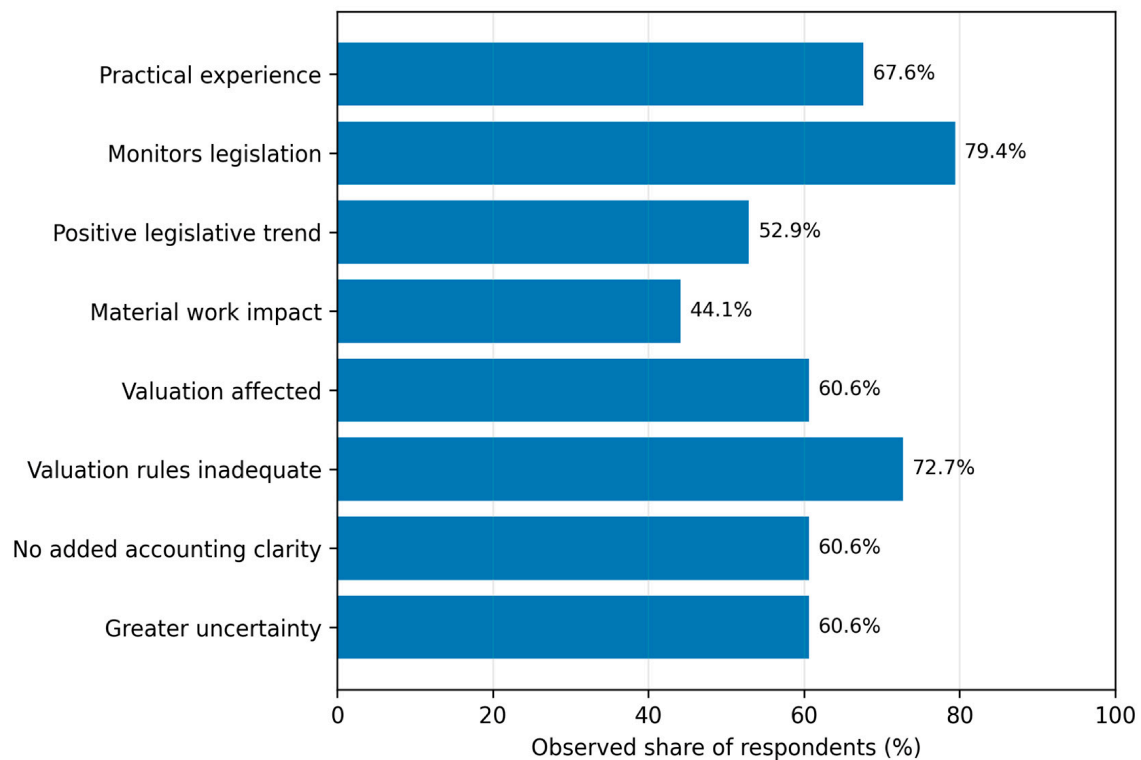


Figure 1. Selected observed survey shares. Bars show descriptive proportions only; denominators are 34 except for the valuation, clarity, and uncertainty items ($n = 33$). Because recruitment was purposive and convenience-based, the chart does not represent population estimates.

Figure 2 displays the ordered pattern: complete non-monitoring appeared only among respondents without direct accounting experience.

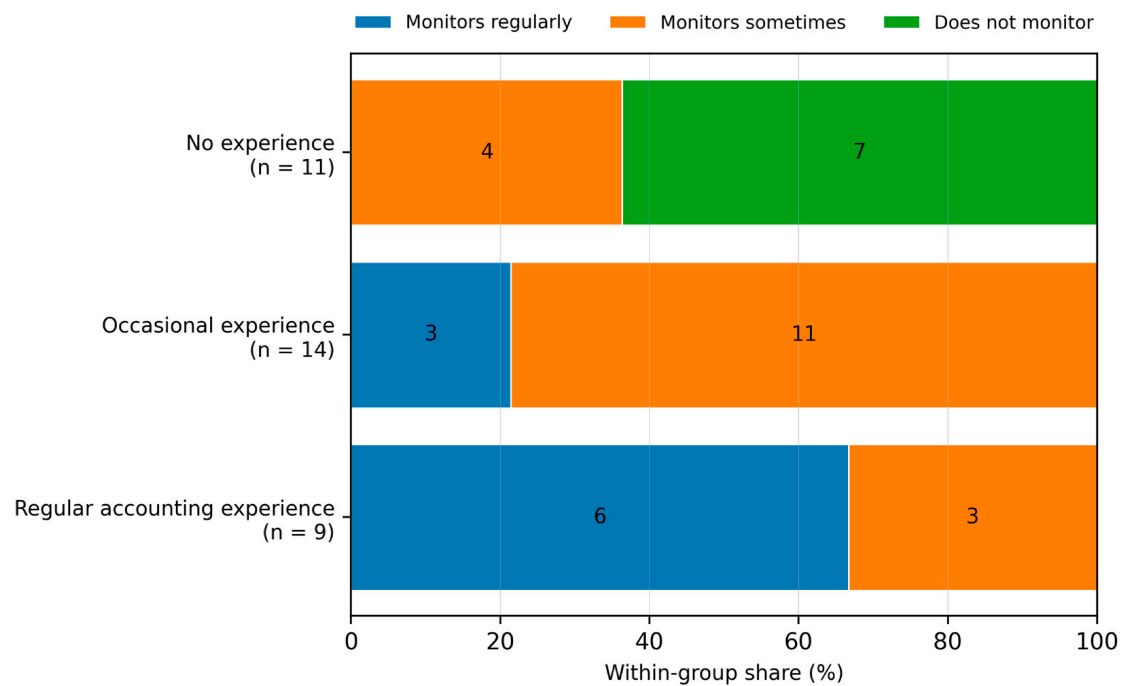


Figure 2. Legislative monitoring within practical-experience groups. Numbers inside segments are respondent counts.

4.3. Operational Impact of the Reforms

Fifteen respondents (44.1%) reported that legislative changes had affected their work significantly or to some extent, 14 reported minimal impact, and five reported none. This distribution is compatible with uneven exposure to crypto-asset transactions, but the sampling design does not support a broader estimate of how frequently Slovak organizations experience such effects.

The multiple-response item indicates where respondents in the sample perceived the burden. Tax obligations were selected by 17 respondents (50.0%), record-keeping and documentation by 12 (35.3%), valuation by 10 (29.4%), and accounting mechanics by five (14.7%); seven respondents selected no impact. Fourteen of 33 valid respondents (42.4%) had changed their accounting procedures, eight had not, and 11 regarded the question as not applicable.

The retained coding counts tentatively suggest that procedural adaptation was concentrated in evidence and control systems rather than in wholesale replacement of the accounting model. Record-keeping and documentation appeared in nine coded occurrences; valuation and currency conversion appeared five times, internal procedures and methodology four times, and classification twice. Descriptors such as analytical records by token, exchange statements, fees, price histories, and supporting documents are paraphrased inclusion indicators from the coding documentation, not respondent quotations. Because verbatim text and coder-by-response assignments are unavailable, these counts cannot support fine-grained qualitative interpretation and are reported only to contextualize the closed-item selections.

4.4. Valuation Adequacy, Clarity, and Uncertainty

Valuation emerged as a prominent point of dissatisfaction in the observed responses. Twenty of 33 valid respondents (60.6%) indicated that legislative changes had affected valuation significantly or to some extent. At the same time, only nine regarded current valuation rules as adequate or rather adequate, while 24 (72.7%) selected rather inadequate or inadequate.

The observed responses also did not show a net gain in perceived clarity. Thirteen respondents considered accounting clearer or rather clearer, compared with 20 of 33 (60.6%) who selected rather no or no. The same 13-to-20 split appeared for certainty: 13 perceived more or rather more certainty, whereas 20 (60.6%) perceived rather more or more uncertainty. These related items were answered by the same respondents and should not be read as independent confirmations; together they describe a consistent directional pattern within the sample.

The retained aggregate analytical file does not contain respondent-level cross-classifications linking experience to valuation adequacy, clarity, or uncertainty. No subgroup claim about experienced respondents being more or less critical is therefore reported, and no additional subgroup test or sensitivity analysis is presented.

4.5. Priorities Identified in Open-Ended Responses

Within the retained coding, the most frequent improvement theme was clearer methodological guidance with worked examples (seven occurrences). Six occurrences named specific crypto-assets or transactions, including staking, NFTs, crypto-to-crypto exchanges, losses, and cross-border operations. Five concerned tax treatment, four concerned unified accounting and reporting, three concerned valuation rules, and two concerned support for entrepreneurs or small firms. Because responses could receive multiple codes and the underlying text is unavailable, these counts do not establish respondents' relative ranking

among policy instruments. Appendix B documents the retrospective codebook and its boundary rules; the counts are interpreted only as tentative implementation signals.

5. Discussion

5.1. Formal Harmonization Has Not Yet Produced Operational Clarity

Within this small, non-probability sample, the responses show a two-level descriptive pattern. At the level of direction, 18 of 34 respondents viewed legislation as improving or rather improving. At the level of day-to-day application, 24 of 33 regarded valuation rules as rather inadequate or inadequate, and 20 of 33 selected the negative side of both the clarity and certainty items. This pattern is consistent with the regulatory–operational clarity gap proposed in the Introduction. MiCA and the Slovak implementation measures have made the legal environment more legible by defining crypto-assets, distinguishing e-money tokens, specifying regulated service providers, and adding accounting and tax provisions. Yet the reforms also require explicit decisions about classification, price selection, revenue timing, and taxable exchange valuation without always supplying a detailed decision protocol. The survey figures are indicative signals of this tension, not estimates of its prevalence in the Slovak professional population.

The sample pattern complements rather than contradicts studies that credit MiCA with legal certainty. A directly applicable framework can reduce uncertainty about authorization, disclosure, and market conduct [2], while organizations still experience ambiguity and compliance burden in specific applications [3]. The observed responses add an accounting perspective to that distinction: they are consistent with a demand for procedures that make a particular accounting or tax result reproducible and supportable, rather than with opposition to regulation itself.

5.2. Valuation as a Prominent Operational Pressure Point

The negative side of the valuation-adequacy item—24 of 33 valid responses (72.7%)—is the largest observed directional share among the implementation-problem items reported in Table 3. However, “valuation affected” and “valuation rules inadequate” are related questions answered by overlapping respondents and do not constitute independent corroborating outcomes. Valuation is therefore interpreted as a prominent operational pressure point through triangulation with the regulatory context and external accounting literature, not by treating related survey indicators as separate statistical tests. This interpretation aligns with research showing that current accounting outcomes can misrepresent economic value or differ across firms [6–9], with stakeholder evidence on active markets and token heterogeneity [10–12], and with continuing standard-setting debate [13,14].

In Slovakia, the issue is sharpened by the interaction of national accounting and tax rules. E-money tokens have a nominal-value rule, while other crypto-assets may require cost tracking, fair-value determination at specified events, and currency conversion. A crypto-to-crypto exchange can create a tax consequence based on fair value even though no euros enter the transaction [21,22]. If a token trades on multiple venues or only through another token, the reporting entity must select and document a price path. Research on dynamic principal markets and inactive crypto-asset markets shows that this is a genuine measurement problem, not merely a lack of practitioner familiarity [26,27].

A workable valuation protocol should therefore specify at least: the unit of account; the market or venue-selection hierarchy; criteria for an active market and observable price; the valuation timestamp and time zone; bid, ask, or executed-price convention; treatment of exchange and network fees; conversion from quoted currency to the functional currency; fallback methods for low-liquidity or indirect pairs; controls over related-party or manipulated markets; and evidence retained for audit and tax review. Without such

a protocol, two entities can apply the same high-level legal rule and produce different, weakly documented amounts.

5.3. *Tax and Documentation Effects Exceed Bookkeeping Effects*

Within the observed sample, tax obligations and documentation were selected more often than accounting mechanics. This distribution is consistent with the design of the reforms. Replacing terminology or introducing an account number may not radically change double-entry mechanics; by contrast, treating exchanges for another crypto-asset, property, or services as sales creates repeated valuation and evidence requirements [22]. The operational burden is amplified by data fragmentation: transaction records may be distributed across centralized exchanges, self-hosted wallets, blockchain explorers, bank statements, and internal systems. The sample frequencies are descriptive, while the policy interpretation also relies on the legal and operational analysis in Section 2.

This distinction matters for policy. Additional statutory text alone may have diminishing returns if it is not accompanied by examples, data standards, and record-retention rules. A minimum audit trail could require a transaction hash or platform identifier, wallet or account, date and time zone, token and quantity, counter-asset, euro valuation, price source, exchange rate, fees, business purpose, and accounting and tax treatment. Standardizing these fields would improve consistency, facilitate software integration, and reduce the cost of review for both taxpayers and authorities.

5.4. *Experience and Regulatory Engagement in the Observed Sample*

The experience-by-monitoring table shows a pronounced pattern in the realized sample: all respondents with regular or occasional crypto-asset accounting experience monitored legislative change at least sometimes, whereas seven of 11 respondents without experience did not monitor it. This pattern is intuitively relevant because professionals who process crypto-assets cannot rely on static knowledge while accounting, tax, licensing, and product structures change simultaneously. It supports the practical value of event-triggered education—guidance available when a firm first receives, buys, issues, exchanges, stakes, or holds a crypto-asset—without establishing how common the pattern is in the wider professional population.

The present data cannot establish whether experience changes perceived confidence, valuation adequacy, or clarity because the retained analytical file lacks the necessary respondent-level cross-classifications. Training may still be important, but any claim that experienced practitioners are systematically more critical requires a larger respondent-level dataset and formal sensitivity analysis.

5.5. *Implementation Framework*

Table 6 presents an evidence-informed, non-ranked implementation framework. It is not a direct translation of respondent preferences, and no survey item asked participants to choose among or rank the listed instruments. The proposals combine (i) closed-item frequencies, (ii) the limited open-response coding, (iii) the regulatory and accounting analysis in Section 2, (iv) prior literature, and (v) the authors' professional judgment. They are therefore hypotheses for consultation, piloting, and comparative testing rather than policy prescriptions empirically validated by 34 respondents. Table 7 traces the specific evidence basis and the degree of normative synthesis for each component.

Table 6. Evidence-informed, non-ranked framework for closing the regulatory–operational clarity gap.

Priority	Recommended Instrument	Minimum Content	Intended Benefit
1. Classification	Decision tree linked to token rights and entity role	Holder/issuer/intermediary; token rights; redemption; underlying claim; business purpose; expected holding period	Reduces label-driven classification and improves consistency.
2. Valuation	Official valuation hierarchy and evidence protocol	Principal market, active-market indicators, timestamp, price convention, liquidity, fees, FX conversion, fallback method	Makes fair value and exchange-date values reproducible and auditable.
3. Transactions	Worked examples and standard journal-entry maps	Purchase, sale, crypto-to-crypto exchange, payment, issuance, redemption, staking, mining/validation, airdrops, NFTs, lost access	Converts general rules into transaction-level practice.
4. Documentation	Minimum digital audit-trail specification	Transaction identifier, wallet/platform, quantity, counterpart asset, euro value, source record, fees, purpose, approval	Improves tax proof, auditability, and software interoperability.
5. Accounting–tax alignment	Joint methodological guidance from accounting and tax authorities	Reconciliations between carrying amount, realized event, taxable value, deductible cost, and timing	Reduces inconsistent interpretation across two compliance systems.
6. Proportionality and updating	SME templates, examples, and scheduled update cycle	Simplified policy template, record checklist, frequently asked questions, change log, consultation channel	Lowers compliance cost and keeps guidance current as products evolve.

Note: The framework instruments were not directly ranked or endorsed by respondents. Table 7 identifies the survey signals and external sources used to support each proposal.

Table 7. Traceability of the proposed framework to survey signals and external evidence.

Priority	Survey Signal(s)	Regulatory/Literature Basis	Empirical Status
1. Classification	Q7: accounting mechanics 5/34; Q10: classification/account structure 2 occurrences; Q14: specific assets/transactions 6.	MiCA taxonomy and substance-based holder/issuer analysis [1,4,7,8].	Mainly regulatory/literature synthesis; limited direct survey support; not ranked.
2. Valuation	Q7: valuation 10/34; Q10: valuation/conversion 5; Q11: affected 20/33; Q12: inadequate 24/33; Q14: valuation rules 3.	Accounting-model, fair-value, principal-market, and tax evidence [6–14,21,22,26,27].	Strongest survey signal, but items overlap; the hierarchy itself was not directly elicited.
3. Transactions	Q14: clearer guidance/examples 7; specific situations/assets 6; Q10: procedures/methodology 4.	Token heterogeneity, issuer obligations, and national accounting/tax rules [4,7,8,18–22].	Survey-informed; detailed transaction list also reflects literature and professional judgment.
4. Documentation	Q7: records/documentation 12/34; Q10: record-keeping/documentation 9.	Analytical-record, tax-proof, price-source, and auditability requirements [18,20–22,26,27].	Direct descriptive support plus regulatory synthesis; minimum fields were not ranked by respondents.
5. Accounting–tax alignment	Q7: tax obligations 17/34; Q14: tax treatment 5; unified accounting/reporting 4.	Interaction of Slovak accounting and income-tax amendments [16–22,24,25].	Survey-informed; joint guidance is a normative institutional design proposal.
6. Proportionality/updating	Q14: support for entrepreneurs/small firms 2; heterogeneous respondent roles.	MiCA implementation burden and need for current guidance [1,3,10,12].	Predominantly normative; weakest direct survey support and therefore a consultation priority, not an empirical requirement.

Counts in the survey-signal column are descriptive and overlapping. “Empirical status” states whether the proposed instrument was directly suggested, indirectly supported, or primarily derived from regulation, literature, and professional judgment.

5.6. Limitations and Research Agenda

The study has important limitations. The sample is small ($n = 34$), non-probability, and confined to one national context. Percentages describe only the participating respondents and should not be interpreted as estimates for Slovak accountants, tax advisers, finance

professionals, entrepreneurs, or firms. The complete recruitment channels, number of invitations, and nonresponse rate were not retained, so selection mechanisms cannot be quantified. Occupational groups are heterogeneous, 11 respondents had no direct crypto-asset accounting experience, several outcomes are self-reported perceptions rather than observed reporting decisions, and one respondent omitted later items.

The questionnaire was exploratory and was not formally pretested or psychometrically validated. Clarity, certainty, valuation adequacy, and work impact were measured by single items; some response anchors are not fully symmetric; and the directional recodings reduce measurement granularity. The retained aggregate file does not permit alternative cutoffs, monotonicity checks, item-level replication, multivariable modeling, weighting, or sensitivity analyses across respondent subgroups. The derived indicators also share respondents and are conceptually related, so they cannot be treated as independent pieces of evidence.

The open-response analysis is likewise limited. The retained analytical file contains aggregate theme counts rather than verbatim responses and coder-by-response assignments. The retrospective codebook in Appendix B improves transparency about definitions and boundaries, but it cannot reconstruct quotations, coder training, disagreement resolution, or inter-coder reliability. The thematic counts are therefore contextual signals only. Similarly, the implementation framework combines survey indications with regulatory analysis, prior literature, and professional judgment; it was not directly ranked by respondents and should be tested through consultation and pilot implementation.

Future studies should use larger stratified samples that distinguish national-GAAP preparers, IFRS preparers, auditors, tax advisers, crypto-asset service providers, token issuers, entrepreneurs, and SMEs. Where feasible, professional-register sampling, probability-based recruitment, or clearly documented quota designs should replace convenience recruitment. Instrument development should begin with cognitive interviews and pilot testing, use multi-item scales for clarity, certainty, and adequacy, retain complete respondent-level records, preregister recoding rules, and report robustness to alternative cutoffs. Qualitative work should retain verbatim responses, use at least two trained coders, document disagreement resolution and reliability, and include carefully anonymized quotations. Interviews and case-based experiments could then test whether practitioners reach the same classification and valuation result when given identical transaction evidence.

Future research can also broaden the substantive segmentation of crypto-asset use. Agrawal and Waggle's digital-asset multi-asset portfolio framework [28] suggests distinguishing holdings by economic role—such as treasury reserve, payment asset, speculative position, or component of a diversified portfolio—because classification, materiality, and valuation judgments may differ by purpose and allocation size. Sadati-Keneti et al. [29] demonstrate crisis-period noise filtering and trading-signal modeling; such methods could inform research on liquidity regimes and price-source reliability, but predicted prices should not be treated as substitutes for observable accounting fair value. Waggle and Agrawal's dynamic glide-path methodology [30] offers a methodological analogy for longitudinally segmenting firms by adoption stage and changing exposure rather than treating adoption as static. Mutanda and Nomlala's systematic review [31] provides a macroeconomic taxonomy of growth, stability, inclusion, and risk channels, allowing micro-level accounting clarity to be linked to broader economic consequences. Aldo et al.'s comparison of LSTM variants for Solana price prediction [32] further illustrates the rapid development of market-prediction tools; future studies could examine whether such tools improve risk diagnostics or data-quality assessment while keeping accounting measurement anchored in applicable standards and observable evidence.

A longitudinal design could determine whether uncertainty declines as guidance, software, and market practice mature. Comparative studies across EU Member States would reveal whether the operational gap reflects MiCA-wide issues or differences in national accounting and tax implementation. These designs would permit multivariable and sensitivity analyses that the present aggregate, non-probability dataset cannot support.

6. Conclusions

MiCA and the related Slovak reforms have materially improved the formal architecture for crypto-assets. The market now operates with a common EU regulatory taxonomy, a supervised service-provider regime, explicit national accounting treatment for e-money tokens and issuers, analytical-record requirements, and updated tax rules for non-fiat exchanges. The regulatory analysis is clear on these formal advances; the small non-probability survey provides only indicative evidence that operational clarity remains uneven.

In the observed sample, 18 of 34 respondents assessed the legislative direction positively, 24 of 33 considered valuation rules rather inadequate or inadequate, and 20 of 33 selected the negative side of the clarity and certainty items. Tax and documentation were selected more often than narrow bookkeeping mechanics. The experience-by-monitoring table also showed a pronounced sample pattern (Cramér's $V = 0.62$). These figures describe the respondents who participated; they do not establish population prevalence, causal effects, or independent statistical confirmation across overlapping items.

The practical implication is not simply to regulate more, but to test how existing rules can be operationalized through a documented valuation hierarchy, transaction-specific examples, a standard minimum audit trail, coordinated accounting–tax explanations, and proportionate tools for small entities. These instruments form a non-ranked, evidence-informed framework that combines indicative survey signals with regulation, literature, and professional judgment. They should be subjected to stakeholder consultation, pilot implementation, and comparative evaluation before being treated as policy requirements. Although the survey evidence is Slovak, the underlying question is relevant across the European Union: Member States share MiCA's market taxonomy while continuing to apply accounting, tax, and administrative requirements through national systems. Similar regulatory–operational gaps may arise wherever common legal categories are not accompanied by transaction-level guidance.

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Data Availability Statement: All aggregate counts used in the descriptive analysis are reported in Tables 2–5, and the retrospective coding framework is documented in Appendix B. The retained analytical dataset consists of aggregate item and theme counts; respondent-level item records, verbatim open-ended responses, and coder-by-response assignments are not available for reanalysis or public release. Additional study documentation may be requested from the corresponding author.

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Abbreviations

The following abbreviations are used in this manuscript:

Abbreviation:	Meaning:
AASB	Australian Accounting Standards Board
CASP	Crypto-asset service provider
DLT	Distributed-ledger technology
EFRAG	European Financial Reporting Advisory Group
FASB	Financial Accounting Standards Board
FVPL	Fair value through profit or loss
IAS	International Accounting Standard
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standards
MiCA	Markets in Crypto-Assets Regulation
NFT	Non-fungible token
SME	Small and medium-sized enterprise

Appendix A. Questionnaire

Introductory text presented to participants: This anonymous questionnaire examines accounting for digital assets and the effects of legislative changes on their accounting and valuation in practice. Responses are used only for research purposes and reported in aggregate. Completion takes approximately three to five minutes.

Instrument status and routing: This was an exploratory, ad hoc questionnaire rather than a validated psychometric scale. Each substantive concept was measured by a single item. Question 10 was shown only after an affirmative response to Question 9. No formal cognitive pretest, reliability analysis, or construct-validation study was performed. The exact wording and response anchors are reproduced below so readers can assess their neutrality, balance, and limitations.

1. What is your occupational role?

Accountant; Tax adviser; Entrepreneur; Finance professional; Other (please specify).

2. How long is your professional practice?

Less than 1 year; 1–3 years; 4–7 years; More than 7 years.

3. Do you have practical experience with accounting for digital assets (e.g., cryptocurrencies)?

Yes, regularly; Yes, occasionally; No.

4. Do you monitor legislative changes concerning digital assets in Slovakia or the European Union?

Yes, regularly; Sometimes; Never.

5. How do you assess the development of digital-asset legislation in recent years?

Improves; Rather improves; No marked change; Rather worsens; Worsens.

6. To what extent have legislative changes affected your work in accounting?

Significantly; Rather yes; Minimally; Not at all.

7. In which areas do you perceive the greatest impact of legislative changes? (Multiple selections permitted.)

Accounting for digital assets; Valuation of digital assets; Tax obligations; Records and documentation; No perceived impact; Other (please specify).

8. Have legislative changes brought greater clarity to accounting for digital assets?

Yes; Rather yes; Rather no; No.

9. Have you had to change the method of accounting for digital assets because of legislative changes?

Yes; No; Not applicable to me.

10. If yes, what changed?

Open response.

11. Have legislative changes affected the method used to value digital assets?

Yes, significantly; Rather yes; Rather no; No.

12. Do you consider the current rules for valuing digital assets sufficient?

Yes; Rather yes; Rather no; No.

13. Have legislative changes brought more certainty or uncertainty into practice?

More certainty; Rather more certainty; Rather more uncertainty; More uncertainty.

14. What should legislation improve in the area of digital assets?

Open response.

Appendix B. Retrospective Coding Framework for Open-Ended Responses

The following codebook formalizes the original aggregate topic labels for transparency. It is retrospective: raw verbatim responses and coder-by-response assignments were not available for recoding. The unit was the complete response, multiple coding was permitted only for explicitly distinct topics, and examples below are paraphrased inclusion indicators rather than quotations. A vague request for “clearer rules” was coded only to the broad guidance category unless a specific topic such as valuation or taxation was also named.

Table A1. Coding framework for Question 10 (“If yes, what changed?”).

Code (Count)	Operational Definition	Paraphrased Inclusion Indicators	Boundary/Ambiguity Rule
Record-keeping and documentation (9)	Changes to evidence capture, analytical records, source documents, or audit trail.	Token-level records; exchange statements; transaction histories; fees; supporting documents.	Do not assign for a generic accounting change unless records or evidence are explicitly named.
Valuation and value conversion (5)	Changes to price determination, conversion, or measurement procedure.	Price source; euro conversion; exchange rate; valuation date/time; fair value method.	Fees alone are documentation unless linked to measurement; tax comments alone are not valuation.
Accounting procedure and internal methodology (4)	Changes to internal accounting workflow, policy, or method.	Internal directive; procedure; journal workflow; accounting methodology.	Classification-only statements are coded to classification; vague “method changed” remains here only.
Classification and account structure (2)	Changes to token classification, account selection, or analytical account structure.	Choice of account; chart of accounts; token category; analytical account by asset.	Do not infer classification from record-keeping unless category or account choice is named.
No change (1)	Explicit statement that no relevant change was made.	No change; procedure remained the same.	Use only when absence of change is explicit, not when the response is blank or unclear.

Table A2. Coding framework for Question 14 (“What should legislation improve?”).

Code (Count)	Operational Definition	Paraphrased Inclusion Indicators	Boundary/Ambiguity Rule
Clearer guidance and worked examples (7)	Request for methodological explanation, examples, or step-by-step implementation support.	Clearer methodology; examples; manual; practical instructions; explanatory guidance.	A broad request for clearer rules is coded here only unless another topic is explicit.
Specific situations and asset types (6)	Request for treatment of a named transaction, token, or exceptional case.	Staking; NFTs; crypto-to-crypto exchange; losses; cross-border operations; lost access.	Do not infer a special case from a general request for examples. Multiple code with guidance is allowed when both are explicit.
Tax regime and tax treatment (5)	Request concerning taxable events, rates, deductions, reporting, or tax evidence.	Tax treatment; realization; deductible cost; tax reporting; tax burden.	Valuation is separately coded only when price or measurement rules are also named.
Unified accounting and reporting (4)	Request for harmonized or consistent accounting/reporting procedures.	Unified methodology; consistent reporting; alignment across institutions or entities.	General clarity alone is not sufficient; consistency or harmonization must be explicit.
Valuation rules (3)	Request for clearer rules on determining or documenting value.	Price source; fair value; exchange selection; conversion; valuation date.	Do not code merely because a tax issue has a monetary amount unless valuation is named.
Support for entrepreneurs and small firms (2)	Request for simplified tools, templates, education, or proportionality for smaller entities.	SME template; entrepreneur guidance; simplified checklist; practical training.	Use only when the target group or proportionality need is explicit.

Coding limitations: The tables document how the retained themes are bounded, but they do not establish coder reliability or reproduce respondent language. Counts should therefore be interpreted as descriptive coding outputs, not as a complete qualitative analysis.

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