Digital Transformation in Financial Reporting: Institutional Pressures Shaping eXtensible Business Reporting Language Implementation in Malaysia

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Abstract

Digital transformation has redefined financial reporting worldwide, with eXtensible Business Reporting Language (XBRL) serving as a global standard for structured, transparent, and automated data exchange. While many advanced economies have mandated XBRL, Malaysia remains in a voluntary phase through the Malaysian Business Reporting System (MBRS). This study investigates how institutional pressures shape XBRL implementation in Malaysia as part of the country's broader digital transformation agenda, focusing on regulators, preparers, software developers, professional bodies, and service providers' perspectives. Guided by institutional theory, the research explores coercive, mimetic, and normative pressures through a qualitative interpretive approach using semi-structured interviews and supporting documents. Findings reveal that weak regulatory enforcement reduces the effectiveness of coercive pressures, while mimetic pressures emerge as stakeholders adapt practices from more mature jurisdictions and innovate with AI-enabled audit tools. Normative pressures remain underdeveloped due to limited technical skills, training, and assurance mechanisms, leading to inconsistent adoption. These dynamics illustrate how institutional and operational factors interact in shaping digital transformation within

financial reporting. Theoretically, the study extends institutional theory to voluntary IT management contexts by showing how external pressures influence system implementation without full regulatory mandates. Practically, it offers guidance for regulators, policymakers, and practitioners to strengthen digital reporting ecosystems and provides insights for other developing countries pursuing technology-driven transformation.

Keywords: XBRL, Institutional Theory, Digital Reporting, Qualitative, Voluntary Implementation.

Introduction

eXtensible Business Reporting Language (XBRL) has become a global standard for the structured, transparent, and efficient exchange of financial data, replacing traditional paper-based reporting with digital formats (Amirul et al., 2021). United States (US), United Kingdom (UK), Japan, and China United Kingdom (UK), Japan, and China, have mandated XBRL for financial disclosures. In Malaysia, the financial reporting landscape is governed by several regulators including the Companies Commission of Malaysia (Suruhanjaya Syarikat Malaysia or SSM), the Inland Revenue Board of Malaysia (IRBM), Bank Negara Malaysia (BNM), and the Securities Commission (SC). While BNM, SC, and IRBM use XBRL in sector-specific contexts such as banking, capital markets, and tax reporting, SSM is the only regulator to have implemented a cross-industry XBRL-based platform through the Malaysian Business Reporting System (MBRS), for companies registered under the Companies Act 2016 (Uyob, 2024).

Despite global momentum, XBRL implementation in Malaysia faces persistent challenges. Most prior research has examined the adoption phase in developed economies, where compliance is mandatory and supported by mature infrastructure (Mousa & Ozili, 2023; Alkhatib & Alkhatib, 2022). In contrast, Malaysia's voluntary approach operates without full regulatory enforcement, relying on stakeholders' willingness and capacity to use the system. Local studies remain limited in scope, with Ilias et al. (2019) focusing on regulators and Uyob (2024) examining preparers, leaving multi-stakeholder implementation dynamics largely unexplored. This gap is significant, as voluntary environments present unique institutional conditions that differ from mandatory settings.

The experience of developing countries often diverges from that of developed nations due to differences in timing and implementation readiness. Developed countries introduced XBRL when digital infrastructure, professional expertise, and regulatory frameworks were already well-established. In contrast, Malaysia and other developing countries have begun implementation within uneven technological readiness, varying levels of professional competence, and evolving enforcement mechanisms. Studies from Indonesia (Fitri et al., 2024), Jordan (Qushtom et al., 2021), Egypt (Helfaya & Amin, 2020), and Jordan and India

(Abhishek, 2018) have provided valuable insights, but these are often limited to single stakeholder groups or mandatory contexts, leaving the complexities of voluntary, multi-stakeholder implementation underexplored.

Within this context, MBRS offers a strategic case for examining XBRL implementation in Malaysia. Unlike other regulator-specific systems, MBRS applies across all registered companies, supported by three main components: the SSM Taxonomy (SSMxT), the mTool preparation software, and the mPortal submission platform. The taxonomy serves as a structured financial reporting dictionary embedded in mTool, designed in Microsoft Excel to facilitate data entry. Completed submissions are filed through mPortal, enabling electronic submission of annual returns, financial statements, and exemption applications.

This study adopts institutional theory as the guiding framework, focusing on coercive, mimetic, and normative pressures. Institutional theory provides a robust lens to examine how external pressures influence organizational practices and technological change (Teo et al., 2003). By capturing perspectives from regulators (SSM), preparers, software developers, professional bodies, and service providers, this research offers a comprehensive understanding of the institutional factors shaping XBRL implementation in Malaysia's voluntary reporting environment. The study offers both theoretical and practical contributions. Theoretically, it extends institutional theory by analyzing how partial enforcement (coercive), limited professional expertise (normative), and constrained technology support (mimetic) influence digital reporting in voluntary contexts. Practically, the findings offer actionable recommendations for policymakers, regulators, and industry practitioners to strengthen XBRL implementation in Malaysia and provide insights applicable to other developing economies navigating similar digital transitions.

Literature Review

XBRL in Global and Developing Country Context

The global shift from paper-based financial reporting to digital formats has reshaped the way financial information is prepared, disseminated, and analyzed. Initially, financial reports were often presented in static formats such as HTML and PDF. While these formats allowed for basic online dissemination, they offered little interactivity and limited analytical potential (Amirul et al., 2021). Over the past two decades, the eXtensible Business Reporting Language (XBRL) has become a global standard for digital financial reporting, adopted in more than 60 jurisdictions worldwide (Zailani, 2018). It provides a standardized tagging framework that encodes financial data in a structured, interoperable format, enabling automated processing, improving data accuracy, enhancing cross-jurisdictional comparability, and promoting greater transparency in reporting.

Many developed economies, including the United States (US), the United Kingdom (UK), and the European Union (EU), have implemented XBRL mandates, often supported by robust regulatory frameworks and well-established technological infrastructure. In the US, the Securities and Exchange Commission (SEC) phased in mandatory XBRL filings for all public companies beginning in 2009, achieving full compliance by 2011 (Boritz, 2011). Similarly, the UK introduced XBRL through the joint efforts of Her Majesty's Revenue and Customs (HMRC) and Companies House, later transitioning to iXBRL in 2011 to improve rendering and usability (Lidia, 2020). The EU's European Securities and Markets Authority (ESMA) requires issuers on regulated markets to submit annual financial reports in XBRL format as part of the European Single Electronic Format (ESEF) initiative (Fabio et al., 2019). Other countries, including Singapore, Japan, Denmark, Spain, and Chile, have also adopted XBRL mandates with varying levels of complexity.

In contrast, developing countries have displayed more fragmented and sector-specific approaches. In Indonesia, the Indonesian Stock Exchange (IDX) has required financial institutions to file reports in XBRL format since 2015, but broader cross-sector adoption has been slower due to limited awareness and the absence of comprehensive mandates (Saragih et al., 2021; Fitri, 2022). Jordan's adoption is confined mainly to the banking sector under the Jordan Securities Commission (Abed, 2018; Qushtom et al., 2021), while South Africa's Companies and Intellectual Property Commission (CIPC) mandated XBRL for qualifying entities in 2018, with smaller firms struggling to meet the requirements (Helfaya & Amin, 2020). In India, the Ministry of Corporate Affairs (MCA) has mandated XBRL for certain classes of companies since 2011, yet small and medium-sized enterprises (SMEs) face cost and training barriers (Abhishek, 2018).

Malaysia presents a unique case where multiple regulatory bodies, including the SSM, IRBM, BNM, and SC, oversee the financial reporting. Among these, only SSM has implemented a cross-industry XBRL-based platform, the Malaysian Business Reporting System (MBRS), covering annual returns, financial statements, and exemption applications under the Companies Act 2016 (Uyob, 2024). While MBRS marks significant progress towards digital reporting, audited financial statement submission remains voluntary, contributing to varied adoption rates across sectors.

Key Challenges in Developing County Implementation

This study identified four interconnected challenges that collectively influence the implementation of MBRS. These challenges, derived from previous literature and a pilot study involving multiple stakeholder groups, reflect the interaction of institutional and operational factors affecting adoption in a voluntary, developing-country context. The challenges include a lack of regulatory enforcement, limited availability of accounting software and tools, insufficient knowledge among preparers, and concerns regarding data

assurance. Each of these challenges is discussed in the following subsections, supported by relevant literature and comparative insights from both developed and developing economies.

In Malaysia, the absence of a mandatory requirement for XBRL under the MBRS system has slowed adoption, mirroring trends in other developing nations where voluntary compliance produces inconsistent uptake. Fragmented regulatory oversight, siloed operations among agencies, and limited government support have created barriers to coordination and standardization. Preparers often adopt a "wait-and-see" attitude, reluctant to invest in new technology without clear enforcement. Lessons from countries like the US, UK, and Singapore show that mandatory mandates accelerate adoption, whereas voluntary regimes, such as in New Zealand, Jordan, and Indonesia, lead to minimal engagement. In Malaysia's case, successful implementation will require a coordinated shift from voluntary to mandatory adoption, supported by cross-agency collaboration and stronger government backing.

The next challenge is that the scarcity of XBRL-enabled accounting and auditing software in Malaysia limits preparers' ability to efficiently file MBRS reports. Most small and medium-sized practices rely on manual entry in mTool, which is time-consuming and prone to errors. Unlike Singapore, where integrated XBRL software is common, Malaysia's market demand is too low to incentivize significant investment by developers. While local collaborations with SSM show potential, adoption is hampered by cost concerns, insufficient technical support, and a lack of user-friendly solutions. Without accessible, affordable, and integrated tools, particularly for SMEs, scaling up XBRL usage remains challenging.

Further, the challenges of widespread skills gaps among preparers, especially company secretaries without accounting backgrounds, hinder accurate XBRL filing. The complexity of taxonomy tagging, particularly for audited financial statements, creates confusion, delays, and frequent errors. Training opportunities remain limited, and professional bodies have not consistently provided sustained capacity-building support. Many preparers rely on external practitioners who are themselves unfamiliar with XBRL, compounding the problem. Countries that have embedded XBRL into professional education and training, such as Australia and the US, demonstrate that targeted skill development is essential for improving adoption and reducing filing errors.

Lastly, the data accuracy and reliability remain critical concerns in Malaysia's XBRL environment. The MBRS platform's current auto-approval process verifies only mathematical balance, without validating taxonomy accuracy or detecting inconsistencies. This reliance on preparers' professional judgment creates risks, particularly when users lack sufficient accounting knowledge. In contrast, jurisdictions like the Netherlands have introduced mandatory assurance for XBRL submissions, improving data credibility. In Malaysia, misapplications of taxonomies, lack of real-time validation tools, and the absence of a clear assurance framework undermine the integrity of reported data. Strengthening validation

mechanisms and developing assurance guidelines are crucial for building trust in XBRL reporting.

Institutional Pressures in XBRL Implementation

Institutional theory provides a robust framework for analyzing how external pressures influence organizational behavior in regulatory technology implementation (DiMaggio & Powell, 1983; Scott, 2014). The theory identifies three main forms of institutional isomorphism, coercive, mimetic, and normative pressures that collectively shape organizational responses. In the XBRL context, coercive pressures often originate from legal mandates, regulatory enforcement, and government policies. Developed countries like the US and EU have achieved widespread adoption largely because compliance is compulsory and backed by strong oversight (Mousa & Pinsker, 2020). Mimetic pressures emerge when organizations imitate peers or industry leaders to reduce uncertainty, where neighboring countries' successes with XBRL can encourage adoption. Normative pressures arise from professional standards, industry norms, and ethical expectations regarding accuracy and transparency in financial reporting.

In voluntary environments through Malaysia's MBRS, these pressures operate differently. Coercive influence is weakened by the absence of a mandatory requirement for audited financial statements. Mimetic effects are also limited due to the small number of visible early adopters and limited benchmarking opportunities. Normative pressures remain underdeveloped as XBRL is not yet deeply embedded in professional training, practice guidelines, or certification programs. This combination creates an institutional environment where the transition to XBRL depends heavily on stakeholder readiness rather than regulatory compulsion. Institutional theory provides a comprehensive lens for understanding how external pressures shape organizational behavior, particularly in contexts with voluntary (partial) regulatory enforcement (DiMaggio & Powell, 1983; Scott, 2014).

In Malaysia's voluntary MBRS context, coercive pressures are limited, arising primarily from indirect government signals rather than binding mandates. Mimetic pressures emerge when organizations look to peers or industry leaders for guidance; however, the scarcity of visible success stories and limited benchmarking opportunities weakens this effect. Normative pressures shaped by professional standards, education, and industry expectations remain underdeveloped due to insufficient training and weak integration of XBRL into professional practice. By applying institutional theory across multiple stakeholder perspectives, including regulators, preparers, software developers, professional bodies, and service providers, this study examines how these pressures interact in shaping XBRL implementation outcomes in a developing country with voluntary enforcement. This approach not only contributes to theory by extending its application to voluntary contexts but also provides practical insights into strengthening digital financial reporting ecosystems.

Research Gap and Contribution

While XBRL research in developed countries has often explored adoption dynamics under mandatory regimes, fewer studies focus on the implementation phase in voluntary, developing-country contexts. Existing research is often confined to single stakeholder groups, such as regulators (Ilias et al., 2019) or preparers (Uyob, 2024), overlooking the interplay between different actors in the reporting ecosystem. Moreover, challenges such as regulatory enforcement, software availability, knowledge gaps, and data assurance have rarely been examined holistically within the same study. This research addresses these gaps by exploring Malaysia's MBRS implementation through an institutional theory lens, incorporating perspectives from multiple stakeholder groups to understand how coercive, mimetic, and normative pressures influence implementation in a voluntary regulatory environment.

Methodology

Research Design

This study employs a qualitative research design to provide in-depth insights into human experiences, contexts, and social phenomena, essential for exploring complex issues such as XBRL implementation (Myers & Newman, 2007). A single explanatory case study approach is adopted in this research, focusing on the implementation of MBRS by the SSM. This approach is appropriate as MBRS is the sole nationwide XBRL-based digital reporting initiative in Malaysia that is applicable to all registered companies, offering a broad and inclusive regulatory scope. Although limited to a single case, the study maintains methodological rigor through the inclusion of multiple stakeholder perspectives, including regulators, preparers, software developers, professional bodies, and service providers.

While the MBRS serves as the organizational case, the unit of analysis in this study is the individual stakeholder, whose perspectives and experiences offer insight into the broader implementation dynamics. The study is grounded in an interpretivist paradigm, which facilitates the exploration of complex social interactions, institutional norms, and individual perceptions. An interpretive qualitative methodology allows for an in-depth understanding of stakeholder experiences and perceptions, particularly in digital reporting implementations like XBRL (Walsham, 2006). This philosophy underpins the selection of qualitative methods, enhancing the depth and context-specific understanding of the phenomenon studied.

Data Collection

Purposive and snowball sampling techniques were employed to ensure that participants had relevant expertise and direct involvement with the implementation of XBRL via the MBRS platform (Miles et al., 2015). Data was collected through semi-structured interviews conducted with a diverse group of stakeholders, including regulators (SSM), preparers

(makers and lodgers), professional bodies, software developers, and service providers. This approach allowed the researcher to capture a wide range of insights from those directly engaged in digital financial reporting processes. The interviews were guided by open-ended questions designed to capture participants' experiences, challenges, and perceptions regarding XBRL implementation.

Each interview, lasting approximately 45 to 120 minutes, was audio-recorded (with participant consent), transcribed verbatim, and verified for accuracy. The interviews were conducted continuously from August 2021 to 19 October 2023. Further, secondary data includes documents such as conference presentations, workshop materials, parliamentary records, reports, and guidelines on official websites. These documents provide context, validate findings from interviews, and offer additional insights into the implementation environment to support triangulation (Yin, 2016). Table 1 below summarizes the profile of the interview participants, grouped according to their stakeholder categories:

Table 1. Participants involved in the interview

Stakeholder	Position in organization	Duration	Label
Regulator	1. XBRL Project Leader 2. State Officer 3. Director of Information Technology	1. 3 hours 9 mins 2. 1 hour 55 mins 3. 2 hours 4 mins	1. Reg1 2. Reg2 3. Reg3
Preparers	1. Preparer (accounting firm) 2. Preparer (auditing firm)	1. 2 hours 9 mins 2. 2 hours 5mins	1. Prep1 2. Prep2
Software developers	1. CEO, Audit software 2. COO, Audit Software 3. Director, Secretarial Software	1. 1 hour 48 mins 2. 1 hour 56 mins 3. 2 hours 3 mins	1. SoftDev1 2. SoftDev2
Professional bodies	1. Accounting professional body 2. Secretarial professional body	1. 1 hour 10 mins 2. 2 hours 7 mins	1. ProfBody1 2. ProfBody2
Service providers	1. Consultant (XBRL Service Provider) 2. Senior Manager (Big Four Firm)	1. 1 hour 39 mins 2. 1 hour 18 mins	1. ServiceProf1 2. ServiceProf2

Table 1 above presents the profiles of all interview participants, including their stakeholder group, organizational position, and total interview duration. While the complete dataset spans approximately XX hours of recorded interviews, only selected excerpts directly relevant to the study's themes are presented in this article. The duration indicated for each participant reflects the total recorded interview time, although the excerpts used in the analysis may represent only a portion of the full discussion. To ensure analytical focus, excerpts were selected based on their thematic relevance, clarity, and alignment with the institutional theory framework.

Data Analysis

The data was further analyzed through a structured process involving open, axial, and selective coding. This approach allowed the researcher to break down the data, identify relationships, and build meaningful themes aligned with the three pillars of institutional theory. The analysis was performed by ATLAS.ti software, enhancing the rigor of coding and thematic development adapted from (Aman et al., 2012). Codes were initially generated inductively and then grouped into categories reflecting coercive, mimetic, and normative pressures. Initially, codes were developed inductively based on the participants' own words and experiences. These were then refined and grouped into broader categories reflecting institutional influences. To ensure the credibility of findings, member checking was carried out with selected participants, allowing them to verify the accuracy of the interpretations. Table 2 presents the thematic structure developed during the coding process, aligning the emergent themes and sample codes with the three institutional pressures—coercive, mimetic, and normative—as guided by the theoretical framework.

Table 2. Themes and Sample Codes Categorized by Institutional Pressures

Pressures	Theme	Sample of codes
Coercive	1. Lack of regulation and policy 2. Regulator's power on system development	1. Challenge – Lack of enforcement and regulation 2. Reason – Subject to Act and standards 3. Solution – Integration with tax authority in near future
Mimetic	1. Limited availability of XBRL-aided software 2. Expertise issues	1. Challenge – Lack of demand in XBRL-compatible software 2. Lack of hands-on experience
Normative	1. Human skills issues 2. Data assurance issues	1. Challenge – Lack of accounting knowledge 2. Challenge – Data quality and assurance issues

Results and Discussion

The results are organized into three sub-sections that are founded on the components of institutional theory on qualitative interviews conducted with key stakeholders involved in the implementation of XBRL through Malaysia's MBRS platform.

Coercive Element

The coercive element addresses regulatory enforcement influences affecting XBRL implementation. The study reveals that the absence of mandatory regulation significantly restricts XBRL implementation, resulting in a 'wait-and-see' attitude among Malaysian preparers. This scenario aligns with coercive isomorphism, emphasizing that robust enforcement enhances compliance and transparency (DiMaggio & Powell, 1983; Troshani et al., 2018). Malaysia's voluntary regulatory stance risks losing global competitiveness

compared to developed countries with mandated frameworks like Singapore and Japan (Alkhatib & Alkhatib, 2022). The fragmented regulatory landscape in Malaysia, involving multiple authorities such as SSM, IRBM, SC, and BNM, has contributed to inefficiencies and inconsistencies in financial reporting. Each regulator imposes different compliance requirements, resulting in overlapping obligations and increasing the reporting burden for preparers. Several participants shared concerns about the siloed nature of regulatory responsibilities in below excerpt:

"We separate from each other due to different portfolios, different Acts to be referred. For example, corporate governance lies under SCM, while tax is guided by the Income Tax Act. SSM affects company secretaries, IRBM affects tax agents" (Reg1).

"BNM is totally different from us. They're financial institutions. IRBM has its own Act, and SC needs different reports like corporate governance disclosures. Each focuses on a different area" (Reg2).

"SSM's scope covers all types of companies. But the submission requirements differ; ours are more comprehensive compared to BNM or SC, for example" (Reg3).

The other perspective from preparers highlighted their frustration with having to present the same financial data in different formats to meet the varying requirements of each regulator, as below:

"The info is the same as SOCI, SOFP, SOCE, but if we submit them separately, it takes more time, cost, and energy. If they integrate the platform, it helps to reduce our burden" (Prep1).

"We're talking about standardized reporting, but it's not standardized at all. I submit to SSM, to the tax agent for IRBM, and then give copies to directors. Three versions!" (Prep2).

One potential solution is to develop an integrated reporting framework where preparers only need to submit a single report that can be accessed by all relevant regulators. IRBM has expressed interest and initiated communication with the SSM to explore future integration with the existing XBRL platform. This situation echoes the Standard Business Reporting (SBR) model in Australia, where multiple reporting obligations are consolidated into a single streamlined platform (Azam & Taylor, 2013). As Perdana et al. (2018) noted, such an approach reduces redundancy, lowers compliance costs, and improves reporting efficiency. Another key challenge faced by preparers involves the stability of the MBRS system, particularly issues related to system performance and bandwidth. These technical limitations are especially burdensome for smaller entities lacking licensed Microsoft Excel or adequate internet access, as the platform depends heavily on Excel-based templates for submission. Preparers further experience system crashes when handling large datasets, a lack of real-time validation feedback, rigid file structures, and poor integration with widely used cloud accounting software. These factors disrupt workflow and increase the likelihood of

submission errors. The system's pre-population function, although designed to ease data entry, often leads to delays and crashes during peak submission periods.

This challenge reflects coercive isomorphism, as the regulator (SSM) exerts power not only through compliance mandates but also by controlling the technological environment that preparers must operate within. (Scott, 2008) claimed that such control illustrates how coercive pressures extend beyond rule enforcement to include authority over the tools required for compliance reflects an important extension of the institutional theory. To address these concerns, SSM is developing mTool version 2 of the MBRS system, which promises improved functionality such as multiple processing gates and drag-and-drop features. This move indicates regulatory responsiveness to preparer feedback while reinforcing the regulator's dominant role in shaping the compliance landscape through technology. The dependence on a single regulatory-driven platform underscores how coercive influence operates not only through legislation but also through system design, stability, and accessibility.

Mimetic Element

The next key challenge under mimetic isomorphism is the limited availability of accounting software with XBRL functionality. Preparers in Malaysia currently rely heavily on manual entry using mTool, which is time-consuming and error-prone. Ilias, Ghani, & Azhar (2020) supported that in Malaysia, there are limited tools and software embedded with XBRL functionality to support preparers in their filings. While many rely on corporate secretarial software, it remains uncertain how XBRL taxonomy can be properly integrated into these systems to ensure the smooth preparation of XBRL instance documents for MBRS filing. In response to limitations in existing software, Malaysian developers have begun benchmarking against neighboring countries with more mature XBRL ecosystems, Singapore, where the Accounting and Corporate Regulatory Authority (ACRA) has successfully implemented XBRL at a national level, as highlighted below:

"We copied from Singapore experience and developed in Malaysia based on local requirements, that's how we started to develop software for local use" (SoftDev1).

While previous literature has emphasized the limited availability of accounting software with built-in XBRL functionality, findings from this study reveal a different perspective (Perdana 2016; Saragih et al. 2021). Participants highlighted that audit software, rather than accounting software, is more suitable for integration with XBRL functionality. This is because the MBRS platform primarily requires the submission of audited financial statements, not day-to-day transactional data typically captured by accounting systems. To further enhance the effectiveness of these solutions, developers have begun embedding Artificial Intelligence (AI) features into audit software, enabling automated XBRL tagging with high accuracy. This

innovation illustrates how mimetic pressures, when applied strategically, can drive technological advancement and support Malaysia's efforts to align with international digital reporting standards as addressed below:

"From accounting software cannot convert FS into XBRL zipped file, XBRL is better to be embedded into auditing software rather than accounting software because regulators need information on audited financial statements" (SoftDev2).

This strategic redirection reflects mimetic isomorphism, where organizations imitate the practices of more established peers to manage uncertainty and gain legitimacy (DiMaggio & Powell, 1983). By aligning with global best practices, Malaysian software developers are not merely copying external systems but adapting them to fit local regulatory requirements. The shift toward audit software also allows developers to tailor their solutions more precisely to MBRS needs, facilitating more efficient and compliant XBRL submissions.

Another critical issue identified under mimetic isomorphism is the absence of an Application Programming Interface (API) within the MBRS platform. Without this capability, third-party software cannot integrate directly with the submission portal, forcing preparers to rely on manual uploads. This increases inefficiency and the potential for error, ultimately slowing down the digital reporting process. Stakeholders emphasized that this limitation discourages software developers from creating robust XBRL solutions and hinders the adoption of more advanced, automated workflows, as explained by the software developer below:

"API is a standard method for system-to-system submission. From my experience with Singapore, we see that ACRA has the API Mall. This is what monetization of the API looks like. You look at the ACRA website, there's a list of API available: entity information, financial query, validate and generate XBRL FS, everything is in ACRA. You send in your XBRL file directly to their site. But SSM doesn't have anything similar. If Singapore is good, why can't we be better?" SoftDev1.

Another developer expressed frustration over the costs imposed for API access:

"SSM doesn't have an API because they've outsourced it. The third party asked us to pay RM50,000 for the first year. That's ridiculous. I showed them how Singapore did it liberal, affordable, fully listed APIs. ACRA charges SD400 for 1500 hits. It's affordable. We're a small business trying to help users" SoftDev2.

"Company secretary software in New Zealand, the UK, US all have API access. There's even a sandbox for testing. But in Malaysia, we have nothing like that. It's frustrating. The idea of achieving full digital reporting with XBRL still feels very far off. We were told that if we want

an API created, we'd have to pay. But we're just a small software company. That's discouraging" (SoftDev3).

Normative Element

One of the pressing normative challenges in implementing XBRL through the MBRS platform is the lack of robust data assurance mechanisms. Preparers expressed concern over the accuracy and reliability of financial data due to the system's auto-approval feature, which simply accepts submitted figures without validating the appropriateness of taxonomy tags or detecting inconsistencies (Mohaidin et al., 2024).

"The system has a mathematical algorithm. As long as the figure tallies, we assume it is correct. But again, if there is an error, it's on the preparer's side. We think of improving this in the future, but let us do the mandate first" (Prep2).

"There's no validation since the system auto-approves whatever figure is keyed into MBRS. I am always cautious and check many times before submitting. But for others, I don't know, there might be human errors, the mTool can't detect it if it's mathematically balanced. If a maker wants to commit fraud, they could do it neatly to make it balance" (Prep3).

In response to concerns raised about the absence of validation beyond basic balance checks, one regulator clarified that the system relies solely on a mathematical algorithm to verify submission as below:

"The system has a mathematical algorithm. As long as the figure tallies, we assume it is correct. But again, if there is an error, it's on the preparer's side… We think of improving this in the future, but let us do the mandate first" (Reg2).

While XBRL promises enhanced transparency and comparability, its effectiveness is undermined when professional norms for data accuracy are not supported by adequate system design. The MBRS platform currently places the responsibility of data accuracy on preparers, assuming a level of professional competence that is not always supported by training or system input control. Borgi and Tawiah (2022) argued that this normative expectation that preparers "should know" what to do creates tension between professional ideals and operational realities. Without real-time validation checks or tagging verification, errors often go unnoticed, potentially compromising report credibility (Shan & Troshani, 2020).

To improve data assurance in the XBRL submission process, developers have introduced AI-driven audit software capable of automating the tagging of financial data with high accuracy. This reduces the reliance on manual data entry and enhances the overall quality and reliability of the submissions. While earlier literature suggested integrating XBRL into accounting software, the findings from this study indicate that audit software is a more suitable solution. This is because MBRS focuses specifically on the submission of audited

financial statements, not daily accounting transactions. As highlighted by Mohaidin et al. (2024), the use of audit software enables preparers to efficiently convert their audited financial reports into XBRL format, simplifying the filing process and minimizing potential errors. Software developers highlighted below:

"We developed the function within one click, able to automate the report and perform the audit, then followed with the MBRS submission. Very transforming in doing an audit, here we try to combine and integrate everything, at the same time, we can ensure accuracy. AI will help them convert from a PDF audited report to XBRL format" SoftDev1

"MBRS automation starts with simple clicks. We come out with 3 clicks for the audited report file to be converted into XBRL format. On top of that, we also have AI that validates the accuracy" SoftDev2

This issue is classified under normative isomorphism because the pressure to maintain accuracy and integrity in financial reporting is not determined primarily by legal or regulatory mandates, but rather by professional norms, ethics, and shared expectations within the accounting and auditing community. Preparers, auditors, and software developers are guided by what is considered professionally appropriate, even in the absence of mandatory assurance rules. Normative elements, as defined by DiMaggio and Powell (1983), stem from professionalization, training, and moral obligations that influence behavior in voluntary settings like Malaysia's MBRS environment. Efforts to enhance data assurance, such as embedding XBRL into audit software, reflect how normative pressures shape system improvements. These are not imposed externally, but arise from within the professional field itself, reflecting an internal commitment to uphold reporting standards. Institutional theory helps explain how these internalized norms drive action even when regulatory enforcement is weak or delayed (Hinnings, 2018; Ilias et al., 2021b).

Conclusion

The global implementation of XBRL has shown significant progress in developed countries, where its use is widely mandated. In contrast, Malaysia remains in the early stages of implementation under a voluntary compliance environment. Within this context, stakeholders appear to be more familiar with the MBRS platform than the term XBRL itself. The findings of this study highlight several critical challenges hindering broader adoption and implementation, particularly regulatory fragmentation, technological limitations, and hesitancy arising from the voluntary nature of the system. Through the lens of institutional theory, this research has examined how coercive, mimetic, and normative pressures shape the unique implementation dynamics of XBRL in Malaysia.

Coercive pressures, typically associated with legal mandates, are observed not only in the absence of formal enforcement but also in the regulatory authority's control over

technological aspects of MBRS. Regulatory fragmentation across agencies like SSM, IRBM, SC, and BNM has created redundancy and sometimes conflicting expectations, hindering streamlined digital reporting. Mimetic isomorphism in this context reflects innovation and strategic adaptation by local software developers benchmarking against successful models, particularly neighboring country implementation by introducing AI-driven audit software to facilitate automated XBRL conversion. The emergence of regulator-driven mimicry also demonstrates how regulatory bodies seek legitimacy by replicating international standards and systems. Normative pressures varied between traditional professional norms with technological advancements to address assurance concerns. This evolution has directed efforts to upskill stakeholders and align professional expectations with digital reporting requirements. Practical recommendations arising from the research include the development of a centralized reporting framework, incentives to encourage software adoption, and tailored capacity-building programs to align local efforts with international best practices.

Despite these challenges, the future benefits of XBRL, particularly in enhancing data transparency, regulatory oversight, and reporting accuracy, are compelling. However, without a mandatory enforcement mechanism, Malaysia risks underutilizing its substantial investment in the MBRS platform, leading not only to inefficiencies and wasted resources but also to falling behind global digital reporting standards and missing valuable opportunities to harness big data analytics for informed regulatory decision-making. To ensure successful and sustainable implementation, SSM must remain proactive by continuously enhancing the system, engaging stakeholders, and offering preparers' support to build long-term compliance and trust.

This study contributes to both theory and practice in significant ways. Theoretically, it supports the institutional theory literature by demonstrating how coercive, mimetic, and normative pressures manifest in a voluntary digital reporting environment, the MBRS platform. The study extends institutional theory by illustrating how coercive pressures in digital reporting environments are exerted not only through rules and mandates but also through the control and limitations of technological platforms. Mimetic pressure is observed not through pure imitation of global practices, but through localized benchmarking against neighboring countries and leading firms with technical expertise. Normative pressure is shaped by varying levels of digital readiness and the evolving role of professional bodies in promoting digital reporting ethics and competence. Therefore, the study offers valuable insights for other developing countries navigating similar transitions, where institutional maturity, regulatory clarity, and digital capacity remain key constraints in XBRL or broader digital reporting initiatives.

This study further practically offers valuable guidance for multiple stakeholders navigating technology implementation in the era of IR4.0. For preparers, it proposes actionable recommendations to ease the reporting process, including improved training, user

support, and access to intuitive, AI-driven audit tools. For regulators, it provides insights into the importance of stronger enforcement mechanisms, centralized reporting strategies, and stakeholder engagement to increase system adoption. For software developers and professional bodies, the findings encourage innovation and collaboration, highlighting the need for software certification mechanisms and tailored training programs to boost awareness and trust in XBRL-compatible tools.

Nonetheless, the study acknowledges several limitations. Institutional theory, while effective in framing external environmental pressures, does not fully capture the internal organizational or technological factors influencing adoption. Integrating additional frameworks, such as the Technology-Organization-Environment (TOE) model or stakeholder theory, in future research could offer a more holistic perspective. Furthermore, as the research relied on qualitative interviews from a select group of stakeholders, the findings may not be fully generalizable across all industries or regulatory settings. Despite efforts to ensure credibility through triangulation and member checking, the interpretive approach inherently involves a level of subjectivity.

Future research could explore the effectiveness of newly developed XBRL-compatible software in improving adoption rates, drawing comparative insights from other countries with similar regulatory frameworks. The intersection between XBRL and emerging technologies such as AI and blockchain warrants further investigation, particularly in terms of automating compliance and enhancing data accuracy. By providing these insights, this study not only strengthens the theoretical understanding of institutional dynamics in digital reporting but also offers practical roadmaps for regulators, preparers, and developers aiming to advance Malaysia's XBRL journey in alignment with global best practices.

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Conflict of interest

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