

Are Auditors Interested in XBRL?

A Qualitative Survey of Big Auditing Firms in Italy

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Abstract Although academics and scholars have called attention to the opportunities and challenges of eXtensive Business Reporting Language (XBRL), new empirical evidence undermines academic assumptions about XBRL's easy acceptance and widespread use by auditing professionals working in the field. This study examines whether independent auditors in Italy are really convinced about the utility and practicality of XBRL in their work. What is proposed here is a preliminary theoretical framework for surveying auditors' interest in XBRL. Electronic questionnaires and semi-structured interviews were used to survey Italian auditors' interest and test the proposed framework. Data analysis was structured by adopting a multiple case approach. Despite the mandatory requirement for Italian unlisted companies to report financial statements in XBRL, the independent auditors' knowledge about XBRL remains quite low. As a result of the survey, a set of unexpected but clear-cut attitudes emerged to explain auditors' limited interest in XBRL.

Keywords XBRL • Independent auditor • Multiple case study • Unlisted companies • Italy

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1 Introduction

Scholars interested in the XBRL format have focused attention on its influence for different groups of stakeholders who might benefit from XBRL adoption [1, 2]. In particular, XBRL is thought to facilitate communication among market players and to improve the quality of information within corporate reports [3]. Meaningful substance and open communication support corporate transparency, which in turn allows stakeholder decisions to rest on unassailable facts [4].

However, since interactive data should also meet the expectations of investors for reliability and accuracy (e.g., SEC, 2009), these data must be assured or audited for accuracy, consistency and reliability [5–11]. In this sense, it is recognized that XBRL disclosures will need some degree of independent assurance to achieve acceptance within the investor community, since the provision of an independent opinion on the reliability and accuracy of filings would boost investor trust [12]. As pointed out by Trites [13], evidence shows that some users, such as analysts, really do ask for assurance on the data. Empirical evidence shows that filings by firms in the first round of submission contained errors and, although appearing in smaller quantity in subsequent rounds, errors persist [6, 14–17].

Not all firms are involved in the same manner in this process. For example, unlisted companies adopting XBRL probably pay less attention to the above-mentioned advantages relating to the market. They might not view XBRL as an important tool for both investors and analysts and they might not perceive any need for the assurance of corporate documents. Nonetheless, even XBRL data produced by unlisted firms can be inaccurate.

Because the auditing of XBRL reports remains voluntary, companies of all size might ask for an assurance service on XBRL instance documents [18, 19]. By doing so, companies might check whether their instance documents provide a true representation of the electronic document and, as a result, really do provide an accurate picture of the business itself.

From a theoretical point of view, auditors should consider themselves one of the primary stakeholders who ought to become more involved. Moreover, when filings become mandatory, the degree of involvement and the level of attention paid by auditors ought to be greater, as compared to the voluntary context. A number of reasons have been advanced in support of a greater role for auditing in the XBRL era. For example, XBRL has been considered a means for improving corporate governance [20, 21] and auditing, as a part of the corporate governance framework, could provide noteworthy support in this role. Scholars interested in XBRL have explored how its implementation might sustain the practice of continuous assurance/auditing [22, 23]. Although the impact of XBRL on auditing is still being discussed, many contributions have enthusiastically highlighted potential advantages for auditors, such as automatic validation of calculated numbers or compliance with disclosure checklists and, generally speaking, the fact that auditing will become easier, because it becomes possible to support the auditing process by computers.

While the above-mentioned studies stemming from the XBRL format have stressed *theoretical opportunities and challenges* for the auditing profession, less attention has been paid to how and why XBRL may *actually and practically interest* auditors.

Empirical evidence indicates the expertise of independent auditors in XBRL assurance procedures is not as high as it should be. In their field investigation, Janvrin and No [24] found that most respondents reported their auditors were not interested in auditing their XBRL-related documents. An Institute of Internal Auditors survey of over 200 internal audit executives found that over 50 % were unfamiliar with XBRL. At the same, 90 % were interested in learning more about their role [25]. Pinsker's [26] sample results indicated a lack of knowledge and experience in XBRL auditing and accounting. Dunne et al. [2] studied the extent to which corporate stakeholders in the UK were familiar with XBRL technology. They found that auditors, as key players in companies for the adoption of XBRL, are beginning to realize that XBRL is something about which they need to know more, especially since the implications for the audit and assurance of XBRL financial statements are still not clear [13].

As a result, a gap exists between scholars, who show potentially high benefits of XBRL for the auditing practice, and professional auditors, who do not seem interested in XBRL at all.

This chapter aims to fill this gap by surveying the interest in XBRL within large Italian auditing firms. The Italian scenario is interesting for such a survey because: (a) Italy has a permanent XBRL jurisdiction; (b) XBRL is mandatory for unlisted companies; (c) a number of unlisted companies voluntarily ask for a financial auditing performed by a big auditing firm, even though they may address the issue to the internal Board of Statutory Auditors; (d) big Italian auditing firms have played and keep playing a significant role in improving financial statements of Italian firms and in offering other audit services¹; (e) larger auditing firms have a good reputation in their clients' opinion [27].

While many countries around the world require public companies to adopt IFRS (International Financial Reporting Standards) and XBRL-tagged reporting formats, Italy is one of the few countries that introduced the adoption of XBRL beginning with unlisted companies' financial statements. Since the introduction of the PMD (Prime Minister Decree of December 10, 2008), the implementation of the XBRL format in Italy became mandatory, but only for unlisted companies that were not compliant with IFRS standards in the preparation of their financial statements (limited to balance sheet and income statements, excluding notes).

¹ Actually, in Italy the demand for voluntary audit services addressed to the big auditing firms has registered a significant decrease in recent years (from about 43 % in 2006 to about 32 % in 2010). However, this results both from the switch to mandatory audit services previously only voluntary, and the general financial crisis [28]. Since non-audit services represent one of the most dangerous threats to the independence of auditors, big auditing firms may also have decided to considerably reduce this business, especially when the *Parmalat* scandal obliged regulators to make more stringent requirements in order to guarantee auditors' independence.

At this time, Italian filers are not required to obtain a third party assurance on XBRL instance documents. The main reason for this, as in other places like the US, may well be to encourage filers to comply without forcing them to incur the additional expense of more auditing. However, since XBRL reporting is now mandatory in Italy, independent auditors must now pay closer attention than they would have in the case of voluntary reporting.

Because we anticipated—according to the empirical evidence—that auditors ignored the topic, we approached the issue by trying to understand why Italian independent auditors were not interested in XBRL (not even within the special context of mandatory XBRL financial statement reporting) in order to evaluate which motivations were the most relevant in accounting for the poor attention paid to XBRL. To do this we first propose and then test a framework of four complementary perspectives (regulatory, economic, technical/procedural, cultural) supported by a set of four theories: Institutional Isomorphism, Cost-Benefit/Utility Analysis, Technology Acceptance Model (TAM), and Diffusion of Innovations. The usage of TAM in a voluntary context (such as the Voluntary Filing Program—VFP) has been criticized because various reasons (other than the deterministic variables that comprise the technology adoption models) may explain XBRL adoption by filers [29]. Therefore, in order to investigate auditors' interest in XBRL we extended our framework by including other theories looking at regulatory, economic and behavioural perspectives.

This study contributes to the existing literature by surveying interest in XBRL not from the XBRL filer' perspective as many scholars have done so far, but from an external auditors' perspective in order to provide for some answers to the “interest gap” existing between scholars and academics on one side, and professional auditors on the other side, as recently noticed [24]. This study also looks at unlisted companies, while a number of previous contributions paid attention only to listed or public companies. Moreover, previous studies on XBRL assurance were based on partial approaches, e.g., focused on technical or cost perspectives, while this chapter aims to offer a more comprehensive approach to the issue. Lastly, while many studies have addressed the issue of XBRL adoption in the voluntary setting (e.g., [30]), we conducted our survey in the mandatory setting.

The paper, aiming to shed light on the auditors' point of view, is structured as follows: [Sect. 2](#) briefly describes a review of the literature focused on XBRL assurance issues potentially involving independent auditors; [Sect. 3](#) provides a research framework to formulate fresh perspectives by which auditors might be attracted to XBRL; [Sect. 4](#) describes the research method and presents results stemming from a two-step qualitative investigation; finally, the last section contains conclusions and practical implications for the auditing profession.

2 Background: Should Independent Auditors be Interested in an XBRL Assurance?

Alles et al. [22] show that the key driver of “continuous assurance” is the demand for it. At first glance, the main reason driving auditors’ involvement with XBRL should be related to an assurance demand voluntarily arising from firms that adopt XBRL. However, this demand for XBRL assurance depends on the voluntary or mandatory implementation context.

Within a voluntary adoption context, XBRL has been thought of as a way for firms to signal their legitimacy in the market, their commitment to transparency [7, 31] and in order to obtain some advantages as first movers. For example, Tan and Shon [32] show that firms adopting a VFP tend to be more profitable than non-XBRL filing firms, and that VFP firms experience an increase in analyst tracking and trading activity in their stocks. In this context, firms may ask for an assurance service in order to give greater credibility to the filings.

However, as XBRL adoption becomes mandatory, financial behaviour is likely to even out, and incentives will decrease for first movers and those firms wishing to acquire legitimacy. As a result of the standardization of data thanks to XBRL, the interest in and the need for an XBRL assurance service could decline, and for unlisted companies such an interest would be even lower. Consequently, the role for the external auditing firm as the source of assurance for XBRL filings cannot be taken for granted [33], so that the question of whether XBRL documents need to be assured by independent auditors still remains controversial and unsettled [21, 29].

Scholars suggested a number of theoretical and empirical reasons for supporting an assurance service, even for unlisted firms. Theoretical contributions, especially based on a normative literature, argue that when XBRL usage proliferates, as in the mandatory scenario, it is likely that user demand for assurance will also increase [13]. Similarly, Alles and Gray [33] predict that if the XBRL filing becomes the official filing, the auditors interest in assuring that there are not material errors in the XBRL filing increases. Thus, also unlisted companies may feel the desire to engage an auditing firm to help them in assessing the completeness, accuracy, consistency and other relevant assertions of XBRL-tagged data.

Smaller firms and unlisted companies may also find mandatory adoption of XBRL difficult due to their limited experience with IT tools. General IT experience is not sufficient to rapidly master new and complex programs like XBRL, so that the conversion of financial statements into the XBRL format may be defective. As a result, data quality will drop. For instance, according to Debreceeny et al. [17], a key aspect of data quality is the accuracy of the mathematical relationships underlying the XBRL taxonomy as implemented in the instance document. Besides, the absence of a requirement for third-party assurance and the limitation of legal liability regarding inaccuracies reduces the incentive to provide error-free XBRL documents [16].

Actually, looking now at the empirical evidence, much research on XBRL has emphasized the large number of errors, both of type and frequency, made by

companies participating in the XBRL program. Boritz and No [6, 7] found a variety of errors in filings, such as differences between the XBRL instance document and the official filing and redundant extensions. Srivastava and Kogan [10] distinguish among possible data deficiencies in the XBRL instance document, possible deficiencies of the mark-up in the XBRL instance document, and possible deficiencies in meta-data external to XBRL instance document. Debreceeny et al. [17] found calculation errors (e.g., more members of a calculation relationship were either missing or extraneous), errors in the application of negative values and errors involving extensions. Bartley et al. [16] detected several errors and inconsistencies in the voluntary filings of 2006, including missing financial statement elements, incorrect amounts, incorrect signs, duplicate elements, financial statement concepts not tagged with the appropriate elements, and inaccuracies in the display of the financial statements. Given all these possible errors, the users of XBRL are likely to demand assurance of XBRL instance documents.

Regarding the frequency of errors, although initial inaccuracies and errors in voluntary filings have decreased, thus allowing the quality of filings to improve significantly [6, 14, 16] a significant number of errors and inconsistencies are still found. Markelevich, Shaw and Weihs [34] found a large number of inconsistencies in Israeli firms' XBRL financial statements; they suspect it is due to the lack of importance placed by staff on the translation of data for XBRL entry. Debreceeny et al. [17] counter-intuitively found that the number of errors was higher for companies that had previously participated in the VFP, probably because of the filers' low experience with XBRL itself. Therefore, an XBRL assurance process could be useful, especially after initial adoption. Thus, while improvements in the XBRL standard and related technology will reduce certain types of error, others, due to insufficient training and inexperience, will persist [16].

However, we should also be aware of what kind of review an XBRL financial statement implies and what result or goal that process aims to achieve. As to process, Srivastava and Kogan [10] suggest the need for a conceptual framework composed of a set of assertions, similar to the management assertions for financial audits, in order to avoid an ad hoc and inconsistent assurance process for XBRL instance documents. According to Boritz and No [6] and Alles and Gray [33] assurance may be needed not on the translation of the paper documents into XBRL, but directly on the process used to prepare the information for XBRL. This assurance may focus on the fair presentation of information in accordance with accounting principles (i.e., completely and accurately reflecting the business facts), the compliance of XBRL documents with the relevant XBRL specifications and regulatory requirements, and the effectiveness of the XBRL generating process.

Moreover, the nature of the auditing process will depend on the use of XBRL. For example, Trites [13] argues that if XBRL is employed to supplement the traditional reporting process, a specific standard is needed to deal with those XBRL filings. On the other hand, where XBRL is used to prepare primary financial statements, more fundamental changes on the standards are required.

Concerning the final result of the auditing or assurance process of an XBRL financial statement, it should result in an opinion as to whether the instance

document is a true representation of the standard format document (i.e., ASCII or HTML). For instance, Eccles and Krzus [9] think of electronic reports as “composed of a much more granular level of information, with specific tags for each individual disclosure item. The audit firm will have to verify the accuracy of these individual tags while still giving an opinion that the financial statements are - « fairly presented taken as a whole »”.

In a broader sense, XBRL assurance will also depend on the approach adopted by companies for preparing XBRL documents. A mandatory approach to financial reporting—including its (digital) format and not merely its accounting standards—may be pursued in a *formal* way, simply in order to guarantee it is in accord with the applicable rules and legislation. To ensure the success of the interactive data program as well as the distribution worldwide of its new digital format, the *substantial* implementation of XBRL is vital for both listed public companies and unlisted companies.

According to Taylor and Dzurainin [35], companies preparing for the requirements of mandatory XBRL financial reporting can take several alternative approaches, such as by converting their external financial statements into XBRL using the company’s existing reporting format; by using an XBRL mapping and instance creation application; by outsourcing the work; by building the XBRL conversion at the reporting applications level, thus using XBRL for both internal and external reporting; or by implementing XBRL in the business reporting supply chain. Consequently, auditing approaches will differ. For example, Boritz and No [7] report the case of assurance service for the United Technologies Corporation’s (UTC) instance document performed by PricewaterhouseCoopers [36, 37], although it is not clear which auditing approach was adopted.

Other lexical and conceptual issues should be faced when an XBRL assurance process has to be implemented. Plumlee and Plumlee [8] argue that before auditors start using statistical techniques to audit XBRL instance documents, the levels of tolerable error and tolerable deviation need to be clarified, because the traditional concept of financial statement materiality is not directly applicable to XBRL documents. Similarly, Srivastava [38] poses the question about what constitutes a complete and accurate or “true representation” of the financial statements (See Table 1).

3 Research Question and Proposal for a Framework to Study Auditors’ Involvement with XBRL

The above-mentioned contributions, and in particular the efforts made by some academics to build detailed XBRL assurance frameworks, seem to warrant auditors involvement with XBRL assurance although they paradoxically and strongly contrast with the empirical surveys (e.g., [2, 24, 26]) showing scant or null interest among auditors about XBRL.

Table 1 A literature review on potential reasons for auditors' involvement with XBRL assurance in terms of new advantages and challenges

Research area	Content and aims	References
Auditing	Facilitate "continuous auditing" or "continuous assurance"	Alles et al. [22], Pathak Sriram [23]
Corporate governance	Improve corporate governance	Du and Roohani [20], Alles and Piechocki [21]
IT experience	Errors due to insufficient training and inexperience.	Bartley et al. [16]
Type of errors	Differences between instance document and the official filing and redundant extensions; data deficiencies in the instance document, deficiencies of the mark-up in the instance document, deficiencies in meta-data external to instance document; missing FS elements, incorrect amounts, incorrect signs, duplicate elements, FS concepts not tagged with the appropriate elements, inaccuracies in the display of the FS; calculation errors, errors in the application of negative values and errors involving extensions	Boritz and No [6, 7], Srivastava and Kogan [10], Boritz and No [16], Debreceeny et al. [17]
Frequency of errors	High number of errors and inconsistencies still found after initial adoption; large number of inconsistencies; number of errors higher for companies that had previously participated in the VFP	Boritz and No [6], Bovee et al. [14], Bartley [16], Debreceeny et al. [17], Markelevich et al. [34]
Assurance process	Need of a conceptual framework and assertions; accuracy of tags; standards	Boritz and No [6], Srivastava and Kogan [10], Trites [13]
Assurance result	Financial statements are fairly presented taken as a whole; instance document is a true representation of the standard format document	Eccles and Krzus [9]
Approach for the preparation of the XBRL financial reporting	Mandatory vs. voluntary; formal vs. substantial; internal vs. external reporting; outsourcing vs. implementing XBRL in the business reporting supply chain	Trites [13], Taylor and Dzuranin [35]
Lexical and conceptual issues	Tolerable error and tolerable deviation, materiality, true representation of the FSs	Plumlee and Plumlee [8], Srivastava [38]

In light of this issue, we can state the following research question:

Why are independent auditors not interested in performing an XBRL assurance in unlisted Italian companies?

This question addresses implications for financial auditing. First, understanding reasons why auditors are not interested in XBRL is useful because it helps regulators to develop or reinforce their involvement with it stemming from those reasons. Second, analyzing motives of auditors' low interest may prevent a new "expectation gap" between what stakeholders search for in a XBRL financial statement and what professional auditors may really offer them in performing an assurance service. Third, answering to this research question may reduce the actual gap existing between scholars and independent auditors as to the interest in XBRL. Lastly, the above research question does represent a research field explicitly identified by some scholars [24].

In order to survey what motives and goals might draw auditing professionals into more involvement with XBRL issues, this and the following subsections will propose and test a framework based on the four different perspectives.

Our main hypothesis is that one or more of the following determinants contribute to the state of inattention by auditors for XBRL:

1. *Regulatory*, that is, the absence of a regulation on the XBRL auditing and assurance issues;
2. *Economic*, related to the low relevance of the profit margins which would arise from the XBRL auditing and assurance services;
3. *Procedural/technical*, given that an XBRL financial statement easily complies with the traditional format;
4. *Cultural*, in relation to the marginal value expected from XBRL assurance in the overall auditing approach.

3.1 The Regulatory Perspective

From the regulatory perspective the assurance of XBRL financial statements should be required by law. Regulatory intervention is usually prompted in response to a new round of financial scandals or the need to engage in the harmonization process within the EU. This recently happened with Directive 2003/51/EC, which calls for an "opinion concerning the consistency or otherwise of the annual report with the annual accounts for the same financial year".

However, governments and regulatory agencies routinely play a key role in the updating of rules and the assimilation of new technologies. New information technologies and, in particular, XBRL are valued in themselves for facilitating the introduction of new regulatory frameworks, such as IFRS and Solvency II [39]. Finally, in order to reinforce this loop "regulation-IT-regulation" and to guarantee continuous compliance with the law, regulation may also develop an XBRL financial statement assurance service provided by independent auditors.

Once an XBRL assurance service is required by law, auditor involvement may follow to the *Institutional Isomorphism Theory*. Institutional isomorphism emphasizes that organizations do not only compete for resources, but also for institutional legitimacy. DiMaggio and Powell [40] distinguish three mechanisms of institutional isomorphic change: coercive isomorphism, mimetic isomorphism, and normative isomorphism. Depending on the manner XBRL assurance would be regulated by law, either of the above kinds of isomorphism may be manifest.

In particular, strong and formal regulation may produce effects in terms of *coercive isomorphism*, that is auditing firms would be obliged to pay attention to XBRL and to learn how to perform an assurance on XBRL-related documents as a consequence of the mandatory auditing demand stemming from companies.

However, regulation should also offer a very clear definition of the XBRL assurance or auditing process, as well as make clear the legal liability of auditors. For example, in the field investigation performed by Janvrin and No [24] two respondents suggested that auditors' lack of interest in assuring the XBRL process was due to legal liability concerns. Besides, a supervisory board should be established to control the process and penalize abuses. If this were not be the case, an informal and not well structured regulation on XBRL assurance might lead to uncertainty. In turn, ambiguous goals and poorly understood technologies are powerful incentives for imitation and may produce a sort of *mimetic isomorphism*, where auditing firms will tend to offer the same assurance model, probably very simple and not stringent (such as an agreed upon procedure), that is far from the high standards required to financial statement audits.

Regulation and enforcement mechanisms are crucial but somewhat removed from the business of stimulating auditor interest in XBRL. Institutional associations and pools of experts must also play a supporting role. This is central to the mission of international professional bodies, such as the IAASB and the AICPA² as well as standard setters on the local level. In Italy these are the CNDCEC (the Italian Institute of Chartered Accountants) for the issuance of local standards on auditing, and the ASSIREVI (the Italian Association of Auditing Firms), which represents independent Italian auditors. Under the influence of auditing professional networks XBRL assurance practices would be diffused rapidly across audit firms. Therefore, these firms would be likely to comply with the normative standards issued by accounting and audit associations, so generating a *normative isomorphism*.

In Italy, while a requirement for reporting financial statements in a XBRL format has existed since 2008, legislation for XBRL auditing or assurance is still lacking. Although an opportunity to introduce such legislation was made possible by Law Decree 39/2010 (see also the related Eightieth Directive on Auditing 2006/46/EC),

² For instance, in 2005, the Audit Standards Board (ASB) of the AICPA published "Attest Engagements on Financial Information Included in XBRL Instance Documents" to provide guidance to accountants providing assurance services, and the same year the Public Company Accounting Oversight Board (PCAOB) published guidance for assurance on filings under the SEC Voluntary Filing Program (VFP).

no provisions regarding XBRL have yet been adopted. As to the audit professional associations, no local standards on XBRL assurance have been released.

In summary, regulation could play a significant role to encourage the involvement of XBRL auditors. And on a parallel track, the auditing practice itself opens up a number of opportunities where its auditors can encourage additional auditing and assurance services, notwithstanding the lack of a specific legal or regulatory requirement (e.g., tax consulting). Therefore, our first proposition states:

Proposition 1 *For independent auditors to be interested in XBRL, assurance of an XBRL financial statement should be mandated by law and auditing associations should issue XBRL assurance standards.*

3.2 The Economic Perspective

Business opportunities can provide stronger motivation. Because auditing firms are private companies, profit is without a doubt the main reason for their moving into new business opportunities. In this sense, it has been stated that the decision whether to ask the auditor to provide XBRL-related assurance is essentially a cost/benefit decision based on the relative cost of the various providers of confidence [33]. From the economic perspective the *Cost-Benefit Analysis* (CBA) is here adopted as a conceptual model to evaluate the auditors' desirability of an XBRL assurance. Although CBA is an analysis of the expected balance of benefits and costs expressed in money terms, not all XBRL benefits and costs may still be estimated in those terms, so that a *Cost-Utility Analysis* (CUA) would be more appropriate at this time.

XBRL is thought to reduce the time, labour and costs of data-quality assurance services [4], by improving the access to and the analysis of financial information, thus making XBRL more useful to auditors. This may be the case of the analytical reviews performed by auditors through the interim and final phases of the auditing process.

However, some of those benefits might be offset by new or increased costs. As to the balance between costs and benefits associated with the XBRL assurance process, the literature seems to offer contradictory results. For example, Roth (2009) [41] finds that the time it took auditors to review a bank's quarterly financial information dropped from an average of 70 to 2 days. According to the IRDCEC (Italian Chartered Accountants Research Institute [42], XBRL benefits for external auditors will only come when XBRL, including XBRL-GL, is extended across the entire accounting system.

Using an IT tool such as XBRL for financial reporting purposes does not necessarily imply an IT audit-ready work setting, one stocked with extensive software tools. In fact, software validation of the instance documents cannot identify all errors in XBRL documents, such as the appropriateness of the tag or the accuracy of the value tagged [8]. Boritz and No [6] reported that software used to prepare and edit the XBRL documents was not always capable of performing

complete mathematical validation of the financial statements. Therefore, a manual approach must also be carried out to identify those errors that are undetectable by the validation software [16], thus increasing the time and cost of the XBRL assurance process. The assurance team must either possess adequate competencies in order to audit XBRL documents, or they need to hire an XBRL technical specialist to complete the process.

Adapting auditing procedures to the new digital format will involve new expenses. Although the use of the ISA 3000 for an assurance for engagements on XBRL data is considered sufficient and appropriate in the present scenario, where both paper and digital formats exist [13], Srivastava and Kogan [10] maintain that when the XBRL financial statements will be the only format, traditional audit framework will have to be revisited and merged into the statutory audit methodology.

However, according to Alles and Gray [33] the feasibility of an external auditor providing assurance of XBRL filings is a function not just of the *absolute* cost of auditing those XBRL filings, but also of two *relative* cost comparisons: (a) the cost of obtaining that externally provided XBRL assurance relative to the cost of preparing those filings; and (b) the cost of obtaining assurance on XBRL filings from an external auditor relative to the cost of doing so using internal providers of confidence. Both of them may hinder the demand of an XBRL assurance for a big auditing firm, especially for unlisted companies. In fact, the cost of preparing XBRL documents is likely to decrease after first mandate filings thus resulting in a resistance by managers to pay an external auditor more than they pay for preparing filings [33]; and the cost of obtaining assurance using internal auditors may be considerably lower relative to the cost of assurance expected from an external auditor, although a reputation issue should also be considered in demanding XBRL assurance from big auditing firms.

Therefore, within the economic perspective, the size of the company being audited also plays a significant role. Small firms can rarely pay high fees (probably even if the cost of XBRL assurance will be a fixed cost), and this is why in Italy they bill the Internal Board of Statutory Auditors for the auditing of financial statements. Small firms also rely on much simpler accounting systems, therefore business opportunities for auditing firms are more limited. Besides, mandatory XBRL adoption by unlisted companies in the preparation of the financial statements, according to the local GAAP, would not present significant challenges for the assurance process. In fact, although XBRL will require progressively more complete and complex filings by including the tagging of the detailed contents of footnotes, under the Italian GAAP, financial statements present rigid schemes and few opportunities to change items, thus reducing the extensibility offered by electronic languages. In particular, the XBRL implementation model adopted for unlisted Italian companies can be defined as *active push* [43] since companies are allowed to use a standard taxonomy without the possibility of disclosing voluntary items that are provided in PDF or other traditional formats. As a result, while a relevant distance between the IFRS Taxonomy and the financial reporting practices of listed Italian companies exists [44], the Italian GAAP Taxonomy released

for XBRL mandatory filing in Italy almost perfectly fits with financial statements from unlisted companies, although some misfits occur depending on the sector and the size of the companies [45]. This good fit clearly reduces opportunities for auditors to perform a substantial (and more profitable) assurance for their smaller clients. Therefore, it is more likely that independent auditors will try to fold the XBRL assurance cost into total audit fees.

In summary, the economic perspective, specifically the profit incentive, will in all likelihood have an impact on the nature of auditors' involvement with XBRL assurance, as well as in non-regulatory contexts; but the size and nature of those profits must be clarified. They will have to be appreciably higher, of course, than related costs. Therefore, our second proposition states:

Proposition 2 *For independent auditors to be interested in XBRL, assurance of an XBRL financial statement should be allowed sufficient profit margins, regardless of the size of the firm audited.*

3.3 The Technical/Procedural Perspective

Looking at possible changes in procedures and practice for XBRL assurance from the technical point of view, we can expect that auditor involvement implies the idea that the assurance of an XBRL financial statement does not simply mean formal compliance with the traditional format. Something more is necessary for the assurance process and of a higher complexity than might have been anticipated.

If XBRL is thought of as a duplicate of the traditional format for the financial statement, no assurance service need be performed or repeated on it and no interest in XBRL can be expected. This is not likely to be the case, however, because many scholars have made clear the substantial changes in auditing practice, such as: a new form of audit process [2]; a set of audit assertions included in a specific conceptual framework [10]; the continuous auditing cycle concept [20]; and the adoption of particular statistical techniques to audit XBRL instance documents [8].

Obviously, each of these changes implies IT concerns. While well-defined IT standards and rules on XBRL (taxonomies, link bases, etc.) do exist and an assurance activity might be performed, more attention should be paid to IT auditing issues. In this respect, the most relevant concern is the auditors' openness to accept automatic digital procedures and to invest in deeper training on IT tools. Under this perspective, the *Technology Acceptance Model* (TAM) appears to us an interesting approach for the aim of this paper. As for the regulatory perspective, where institutional isomorphism provided a behavioural explanation for auditor interest in XBRL based on their search for legitimacy, TAM may also offer a behavioural or perceptual rationale for studying auditor involvement with XBRL.

Although TAM has been developed to explain widespread rather than modest adoption of a technology, such as in the case of independent auditors, main mechanisms of that model may be helpful in order to analyze their interest in XBRL. Besides, TAM is thought to be applicable to XBRL on a conceptual level and it has been recently used by Vasarhelyi et al. [11] to examine how XBRL can affect the usefulness of financial reporting information for, among other things, data fidelity and assurance.

TAM is an information systems theory that addresses how users come to accept and use a technology. Even though a number of factors influence auditors' decision about how and when they will use it, two main determinants have been identified: (a) *perceived usefulness*, i.e., the degree to which a person believes that using a particular system would enhance his/her job performance; (b) *perceived ease-of-use* (in turn, also a source of perceived usefulness), i.e., the degree to which a person believes that using a particular system would be free from effort [46]. Therefore, TAM may allow us to consider auditors' attitudes and intentions toward XBRL, although, as stated by Bagozzi et al. [47], attitudes towards usage and intentions may be ill-formed or lacking in conviction.

Under the TAM, XBRL should have the potential to enhance auditors' job performance through the automation of formerly-manual tasks, and to enable more rapid, well-informed decision making through the same automation process. As a consequence, the same XBRL assurance should be simpler and more useful in the eyes of an auditor compared to the traditional format. However, while "usefulness" has already been outlined (e.g., automatic validation of calculated numbers, faster and more accurate analytical reviews, etc.), the "ease-of-use", and consequently the capability to provide an XBRL assurance service, will also depend on the auditors' skills.

In the digital era, new skills and greater competency are becoming critically important for auditors. They will have to widen their focus to satisfy growing stakeholder expectations [48]. In this regard, synergistic relationships between financial statements auditors and IT auditors have been examined [49, 50]; prospects for auditors with higher IT skills have been also discussed [51]. Chaveerug and Ussahawanitchakit [52], in examining the contribution of auditors with superior IT competency, found an improved ability in their audit decision making, error detection, data mining and a reduction of the audit cycle.

However, a study from Janvrin et al. [53] on the perceived relevance of IT and its effective use by auditors pointed out that auditors perceive some IT tools as of high value, but they use them infrequently. Additionally, the employment of IT specialists is low even when examining clients in complex IT settings. Likewise, according to a survey conducted by Protiviti [54], auditors need to make a better use of the CAAT (Computer Aided Audit Tools), data analysis software, and continuous auditing tools, and, furthermore, to develop a heightened awareness about IFRS and XBRL [55]. Our third proposition states:

Proposition 3 *For independent auditors to be interested in XBRL, assurance of an XBRL financial statement should not simply mean formal compliance with the traditional format; higher IT skills should be acquired.*

3.4 The Cultural Perspective

The cultural perspective within the auditing guild presents another set of “for-and-against” pressures regarding the development of an XBRL assurance service. This perspective implies a normative approach to the XBRL auditors’ involvement, i.e., this is a consequence of the idea that the assurance of an XBRL financial statement really will change the auditing profession. Under this approach, the XBRL paradigm is thought of as a new, advanced step in the history of the auditing practice, and performing an XBRL assurance is thought of as a great innovation. However, all of this requires time and a set of different means to disseminate XBRL within a social and cultural context.

In our opinion, this perspective may find a theoretical context in the *Diffusion of Innovation Theory* [56, 57]. It aims to explain how, why, and at what rate new ideas and technology spread through cultures, where diffusion is defined as the process by which an innovation is communicated through certain channels over time among the members of a social system. Hence, four main elements influence the spread of a new idea: (a) innovation, (b) communication channels, (c) time, and (d) a social system. Individuals progress through 5 stages: knowledge, persuasion, decision, implementation, and confirmation. If the innovation is adopted, it spreads via various communication channels. During communication, the idea is rarely evaluated from a scientific standpoint; rather, subjective perceptions of the innovation influence diffusion. The process occurs over time. Finally, social systems determine diffusion, norms on diffusion, roles of opinion leaders and change agents, types of innovation decisions, and innovation consequences.

If XBRL is really perceived as a great opportunity to change financial statements and consequently assurance on them, a substantial implementation of XBRL may enhance the role of independent auditors in improving financial statements’ reliability. As was expected with the adoption of IFRS (European Commission, February 2001), independent auditors can in the same way play a key role in facilitating a substantial adoption of XBRL, thus advancing the cause for broad adoption of electronic language in auditing. In particular, the wide-ranging use of XBRL for all business processes (i.e., XBRL-GL) will involve auditors at the initial stage of data preparation for the financial statements and not merely at the final stage.

A cultural perspective entails significant changes, like a highly-developed and professionally-qualified auditor profile—gained as a direct outcome of the technical/procedural experience—and a strong education for accountants who are involved in the preparation of XBRL financial statements. The support of scholars, experts and practitioners appears essential for the promotion and dissemination of

XBRL knowledge to solve auditing issues. In particular, scholars and practitioners should maintain close ties, thus helping to correct uninformed notions about the costs and benefits that come with XBRL adoption.

In U.S., the biggest auditing firms have demonstrated their interest in XBRL, in particular because of the opportunity it affords to perform quantitative analyses more efficiently and reliably [37]. Although some benefits of XBRL adoption (in terms of efficiency, comparability and standardization of financial reporting) anticipated by scholars did not materialize [30, 58], a cultural approach would allow practitioners and auditors to monitor XBRL developments and assurance applications. Academics and scholars should continue to investigate and communicate XBRL-related auditing issues. Alas, as mentioned earlier, meaningful changes in the auditing approach arise most often as a consequence of financial scandals, and not through the cultural impetus of auditors' professional organizations. Finally, our fourth proposition states:

Proposition 4 *For independent auditors to be interested in XBRL, assurance of an XBRL financial statement should really represent an innovation and it should truly change the approach to auditing.*

Figure 1 offers a framework for studying why and how auditors should be involved in the new standardized process of financial reporting. The framework is based on the above four main perspectives and related theories, and for each perspective one proposition is formulated. However, the proposition has to be tested under a few XBRL-specific assumptions, as illustrated in the previous sub-sections.

4 Testing a Framework for Auditors' Interest in XBRL: A Multiple Case Approach

4.1 Methodology

The methodology used for this research is that for a qualitative study, based on a grounded research approach, which is situated within the constructivist paradigm [59, 60]. The results arising from the application of the grounded theory are generally aimed to proposing probability statements related to the relationship between phenomena, or intended for posing conceptual hypotheses developed from empirical data [61]. According to the Glaser approach (2003) [62], this theory generally uses qualitative data and even any typology of data could be used.

According to other scholars, the grounded theory is intended as a systematic inductive approach that allows the collection and the analysis of data coming from a direct field investigation [63]. Therefore, such a research method is based on the capability of qualitative data to explain the facts observed and for this reason it is suitable for conducting analysis of data that allow to obtain a confirm or a refutation of a theory.

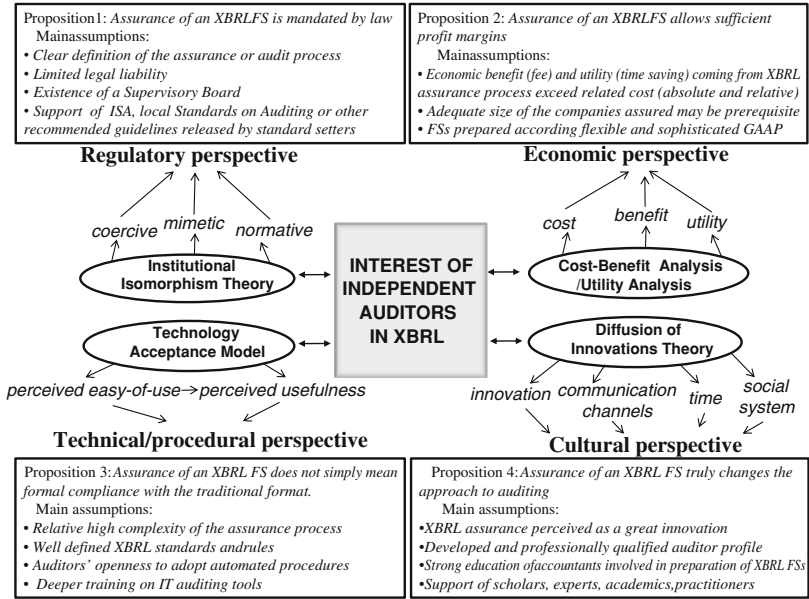


Fig. 1 A framework for independent auditors' interest in XBRL

As the aim of this research is to survey auditors interest in XBRL, we made a preliminary survey in order to insure that the low interest of auditors does not depend on poor knowledge of XBRL benefits.

Therefore, a preliminary investigation was carried out in order to gather descriptive data about the present situation of XBRL interest and to discover the perception of auditors about XBRL. To achieve such an initial investigation, a web survey method was chosen, given its suitability for reaching target groups located in widely distributed geographic areas [64].

In fact, in this step, a structured questionnaire was sent via e-mail to all the Italian auditing firms certified into the CONSOB (Italian Securities Exchange Commission) register in May 2011. A low answer rate and a lack of interest in XBRL were expected, given that similar research carried out by Dunn in the UK context revealed a very low level of interest for XBRL and a very low answer rate [2]. On this basis, the main objectives of the survey were to understand what was the auditors' interest in XBRL, in particular, whether such interest could depend on the XBRL benefits. In so doing, it has been possible to learn whether the benefits of XBRL could be a driver of the interest in XBRL. For this reason, the survey asked auditors "how" and "how much" the XBRL benefits could help them in their auditing activities. The questions were posed taking into account the main benefits of XBRL as stated in the literature. Specifically, the goals of the survey were the following:

- To achieve an overall view regarding the auditors' interest and experience on XBRL, even considering the most critical concepts of XBRL (taxonomy, instant document, link base, tag, etc.);
- To investigate whether, in view of the acknowledged benefits of XBRL suggested to auditors within the questions, the auditors' interest for XBRL is higher.

As a confirmation of the survey by Dunne et al. [2], a very low answer rate was obtained. Specially, the answers received show that the auditors are not influenced by the benefits of XBRL and thus it is possible to exclude the notion that XBRL benefits are a driver for interest in XBRL. Hence, there are surely other causes that explain the limited interest of auditors in XBRL.

For this reason, an additional, more in-depth case study analysis has to be performed in order to investigate the main causes of the low interest in XBRL.

In applying the grounded theory method, many relevant contributions pose the case study as one of the most suitable analyses to be achieved [59, 65, 66]. Specifically, a qualitative analysis of data can be obtained through a single or a multiple case study, that, according to Yin [67], belong to the same research methodology, even if they are distinguishable as distinct variants.

The main strong points of the single case study analysis are its suitability to be used with explanatory, exploratory and descriptive aims [67–69]; the possibility of its use in a multiple source of evidence [67]; its potential to generate and test theories [70, 71] when the case fits with the theoretical assumptions; its potential to confute theories, when a deviant case emerges [72, 73], or to provide previously unidentified causal mechanisms [74]; and its capability to offer a “working hypothesis” that can be compared to other cases, in order to evaluate the differences and the similarities among the cases [75]. Moreover, the case study analysis provides an important learning opportunity that can lead to the extraction of usable knowledge, especially if investigators focus intensively on critical issues [76].

However, the main risks of the case study are due to the use of insufficient information which could lead to unreliable results. In addition, the internal, external and construct validity are the main areas in which potential lack of rigor could be found [67, 77, 78]. The many weaknesses of single case study analysis are put forward, even by more optimistic scholars, concerning the great difficulty of using case studies in developing theories [70] and the inability to generalize the particular results obtained. As stated by Eisenhardt [70], the case study method represents a mere starting point for the development of theory, and becomes a basis for “analytical generalization”, rather than a “statistical generalization”, only when it involves several case studies [67]. According to Eisenhardt [70], the correct number of case studies goes from four to ten. Moreover, even if a case study could investigate those concepts and theories that are not yet well developed, or validated, findings are generally limited to a certain time, place and condition [67, 79].

Therefore, in this research paper, in order to investigate auditors interest in XBRL according to the framework explained above, a multiple case study approach is proposed, involving the Big Four auditing firms. A multiple case study approach is considered as a variant of the case study [67]. Therefore, it maintains

all the advantages of the case study, and, at same time, it reduces the typical weaknesses of the single case study. The multiple case study method, in fact, holds the potential to provide more compelling and robust results [80]. Moreover, the single case study analysis of specific situations affords results that may be generalized only with difficulty. Instead, the multiple case study approach allows direct replications of cases [67], thus allowing differences and similarities to emerge among them. Furthermore, if two or more cases reveal analogue conclusions, the possibility to expand the generalization of the findings is higher [67].

The aim of this investigation is to make a direct replication on the Big Four auditing firms, submitting questions related to the framework proposed, in order to accomplish a detailed understanding of the reasons explaining the auditors interest. Multiple case studies can effectively offer the possibility of highlighting the shared/different causes of interest, based on the auditors' experience.

As foreseen by grounded theory, a case study analysis is generally combined with other kinds of data collection, such as interviews, questionnaires, observations, and doing so with both qualitative and quantitative evidence [81]. In the context of the multiple case study analysis, a multi-perspective interview study followed [67], first selecting the interviewees who are more likely to have significant information related to auditing activities and XBRL. For this step of the research, the interviewees—3 managers and 3 senior managers for each Big Four—were contacted. Informational material on XBRL was sent to them by e-mail; after that, a set of semi-structured interviews were held, guided by a written prompt sheet, so that discussion was allowed to flow, and key points to be highlighted. Interviews were based on the four perspective of the framework, according to a common path to be followed. To generate trustable data, managers and senior managers were interviewed apart, so to avoid outside influences. In fact, one of the strong points that arose from the multi-perspective approach is that auditors belonging to the same auditing firm can generate different data from interviews. Multiple interviews allowed the different needs of auditors to emerge, different causes for their interest in XBRL and both similarities and differences in their perception about audits to be done on XBRL-related documents.

Interviews were conducted mainly through open-ended questions. Open-ended questions have advantages and disadvantages. The advantages relate to the possibility of discerning the real beliefs concealed behind the opinions expressed by the respondents and to the capacity of deeply understanding the reasons of discordant opinions for homogeneous interviewees. The disadvantages of this method are mainly related to the wide variety of answers obtainable, making scoring and coding difficult [82]. However, given the breath of the issue and the exploratory aim of the research, and given the unforeseen number and variety of subjective opinions and perceptions that auditors expressed, open-ended questions seem to be the best solution to grab as much information as possible.

Each interview took about 45 minutes and was recorded. Interviews were later transcribed in order to achieve a content analysis using the support of the software Atlas.ti 6.2[®] to compare them to each other, to isolate the key opinions common

among auditors, and then to discern the differences among them. The scientific validity of this approach is confirmed by Yin [67], Fink [83] and Berg [84].

Interviews were held with 3 managers and 3 senior managers for each of the Big Four auditing firms in order to understand which were the main reasons for their low interest in XBRL and which could be the triggers for boosting their XBRL interest. In total, 24 auditors were interviewed. Questions posed according to the framework perspectives were submitted in order to allow the opinions of each auditor emerge for each category. The main aims pursued were:

- *Regulatory*: in this perspective, questions submitted to auditors are aimed to allow their opinion emerge on the relevance of regulatory requirements in developing their interest for XBRL and on the possibility that, as a result of a new regulatory law, the auditing of XBRL financial statements becomes mandatory;
- *Economic*: in this perspective, the role of the possible economic advantages arising from an XBRL auditing has been debated as a basis for the development of the interest in XBRL;
- *Technical*: in this perspective, questions posed to auditors are oriented to understand how and why the technical opportunities and complexities of XBRL could be a trigger for developing auditor interest; more specifically, the opinions of the auditors can reveal whether they identify possible advantages (or disadvantages) of XBRL in performing their auditing activities;
- *Cultural*: in this perspective, questions posed to the auditors are aimed at highlighting their points of view regarding the relevance and innovation introduced by XBRL, regarding XBRL impacts on the auditing procedures, and its effects in defining a new approach for auditing a financial statement. Table 2 reports some of the main open-ended questions submitted to auditors.

Table 2 The main questions of semi-structured interviews

<i>The regulatory perspective</i>	<i>The economic perspective</i>
Should the auditing of an XBRL financial statement be mandated by law?	Is there the possibility to gain profits through an assurance/auditing activity on XBRL-related documents?
Are there in Italy enough legal requirements regarding XBRL?	Is XBRL a new source of business?
How much important is the legislature intervention in promoting the auditing of XBRL-related documents?	Does XBRL imply new costs?
<i>The technical perspective</i>	<i>The cultural perspective</i>
Does XBRL lead to any changes in auditing procedures?	Is XBRL more than a new IT tool?
Does XBRL provoke resistance to adopt new automatic techniques?	Does XBRL change the approach to auditing?
Does XBRL change the IT work?	Which are the conditions for diffusing the XBRL innovation?

Since the aim of the research is to test the framework presented in the previous sections of this research paper, the structure of the interviews has been designed in a way to submit questions for each perspective, according to our theoretical propositions.

4.2 Findings

The answers of the auditors were transcribed and analyzed in order to detect shared opinions on issues related to the four perspectives of the framework. As a result of the multiple case study, three categories of respondent have been identified. Each category has a different view of the causes of the low interest in XBRL. The first (*regulation is the key*) is composed by the interviewees which consider the regulatory perspective as the most important in promoting interest in XBRL issues. According to this category, the regulatory perspective could be the first way for the diffusion of XBRL and for the development of interest in XBRL issues.

The second category (*higher profit for higher efficiency*) is composed by auditors which consider the economic and the technical aspect of XBRL as closely related among them and thus the most suitable in developing interest in XBRL. According to them, if XBRL could bring profits, then it will be largely adopted, and, as a consequence, the interest in it will increase. At same time, auditors assert that, in addition to the profit, if XBRL will be correctly adopted it could bring many advantages in terms of data integration, technical efficiency and effectiveness. Therefore the development of interest in XBRL could arise from the combination of such two elements.

The third category (*cultural reserves*) states that the main cause of the low XBRL interest has cultural nature. That is, since XBRL contains the same information of a traditional financial statement, the adoption of XBRL could be perceived as useless. Moreover, as XBRL could lead to new IT skills and competences and as a result could affect the auditing activities, a resistance to change is likely to happen.

Hereinafter such categories will be analyzed in detail, also quoting some of the most significant statements of the auditors interviewed in order to make as evident as possible which are the shared opinions of the interviewees.

Category One: Regulation is the Key. With regard to the first category, it is composed of 11 respondents, specifically 6 senior managers and 5 managers. As said above, questions asked to the interviewees were aimed at grabbing the auditors opinion about the four perspectives introduced in the framework. This category embeds the set of auditors whose answers are similar for meaning.

The first impression which emerges from the auditors interviews is that they did not realize any impact of XBRL on their auditing activity, and also inside the audited companies, they did not perceive any change due to the introduction of XBRL.

About such a particular category, several opinions converged in recognizing a relevant role of the regulatory boards in promoting interest towards a new matter like XBRL.

As it happened for IFRS, when laws regulated the approach to be followed for the IFRS adoption, auditors state that it should happen the same for XBRL for increasing their interest in XBRL. Therefore, auditors interviewed are expecting an important legislature intervention in promoting their interest in XBRL, such as the definition of the rules for performing the auditing activities, the definition of the scope for carrying out an XBRL assurance, the technical implications and costs of such new duties, the software to be used and the fees to be applied for accomplishing such a new service.

This is one of the reason that explain why XBRL benefits are not a driver for interest in XBRL: auditors cannot know, actually, which could be the benefits arising from XBRL because benefits will depend on the regulatory requirements.

Judging from the expectation of the auditors and from their answers, it seems to be confirmed the principles of a normative isomorphism. In fact, in this category each auditor feels the need to receive a rigorous set of rules to follow, in order to comply with and to take advantage from law requirements for making clearer its ideas about XBRL, that is, opportunities, costs, benefits and technical implications of XBRL.

Therefore, the way in which an XBRL assurance will be performed, the effects on the auditing procedures, the costs and the profits which will arise from, are all issues which depend on the rigor that the regulatory board will give to the legal requirements. Furthermore, auditors also expect that the complexity of XBRL assurance procedures defined by the legislature could also affect auditing costs, hence bringing about the likelihood of applying additional fees.

In other terms, auditors belonging to this category recognize in law the main trigger to be activated for developing their interest in XBRL and the following point extracted from the interviews, reveal their opinions about it:

The depth of the XBRL assurance will depend on the rigidity of the schemes defined by the regulatory boards: if the approach of the legislature is too soft, the XBRL assurance could be considered as only one more new task for IT. Moreover, according to the approach the legislature adopts for introducing an XBRL assurance, it might be possible to apply further fees.

Another opinion that auditors expressed is that actually the regulatory boards do not provide requirements about XBRL auditing activities; rather, XBRL is thought to be useful only for the final deposit of the financial statement and thus all the auditors' activities preceding it are entirely unaffected by XBRL.

On the contrary, one auditor states that XBRL assurance could be helpfully achieved on interim financial statements, because about the 98 % of their work is carried out before producing the final financial statement.

As a further confirm of this opinion, a statement of another auditor interviewed is quoted:

The software related to XBRL is used when the auditor's job is already concluded, therefore it involves only the deposit of the financial statement. But at that point, it does not matter anymore for us.

As a result for this category, according to several auditors, regulatory bodies have a determining role in establishing how deep an XBRL assurance should go and which tasks it could involve. Thus, the regulation perspective for these interviewees is seen as the "key" for stimulate their interest in XBRL. The effect of this is likely to be a normative isomorphism.

Moreover, as it emerges from the interviews, almost all the auditors interviewed recognize that the regulatory perspective is the first element to be considered for promoting their interest in XBRL, because the regulatory perspective can affect also the other perspectives of the framework. As an example, technical and economical perspectives are both depending on the legal requirements.

Category Two—Higher Profit for Higher Efficiency. This category consist of 8 respondents, in detail, 3 senior managers and 5 managers. The answers received by the auditors have in common the recognition of a close relationship between the technical and the economic perspective.

Obviously, auditing firms could have a great interest in XBRL if benefits exceed costs related to its implementation, adoption and successive assurance activity. Observing the results of the interviews, it clearly emerges a real difficulty for respondents to divide the economic from the technical perspective, being very strictly linked among them.

The interest in XBRL, for this category of respondents, depends on the possibility to take advantage from the technical efficiency allowed by XBRL and, at same time, to take advantage from the higher profits that could arise from an XBRL assurance activity. In other terms, a part of interviewees belonging to this category think that XBRL can allow to reduce costs, making leaner the procedures, higher the timeliness and more effective the controls, thanks to the higher level of automatism, and, also, they think that XBRL could be a new profitable business. According to the auditors, XBRL could also allow better linkages with the client firms, in addition to a higher efficiency and effectiveness of their work.

Another part of respondents of this category, more prudently wonder which could be the additional costs that XBRL could bring about.

What emerges is a difference of opinion, but united by an interest in technical and economic aspects of XBRL. Thus, the Cost-Utility Analysis made by auditors does not return consistent results, but differing ideas on the convenience to perform an audit on XBRL financial statements or not. Indeed, questions regarding the costs and the profits that can arise from an XBRL assurance affect some main considerations: the cost of additional work for the IT staff; the cost of additional work for auditors; the profits obtainable from an XBRL assurance service. Regarding the IT staff, some auditors state that IT would be actively involved on new software and new IT activities, so making necessary further training costs; whereas, according to other auditors, the IT staff might take advantage of the

higher standardization achievable with XBRL, thereby reducing the overall effort and costs.

Still, other auditors assert that the IT specialists is the entity least affected by the XBRL assurance, since IT is considered very accustomed to dealing with never-ending innovations for information technology. Therefore, according to them, the effects on the IT costs could be very irrelevant. In the opinion of this part of auditors, it is likely that IT specialists will suffer an increase in workload, but quite surely they could improve the quality of their work taking advantage from XBRL language without further expenses.

About this point, the following statement extracted from an interview with a senior manager, is quite significant:

In some environments, like banks, the IT specialists have to achieve the auditing activities, therefore XBRL for them could mean additional work, but not an increase in costs.

Regarding the standardization achievable with XBRL, it is considered by auditors as one of the main strength points of XBRL, as it could allow to make uniform the reclassification criteria of interim financial statements, making them comparable with each other in a company.

As follows, a significant statement expressed by a manager on the benefit effects of XBRL for the IT staff:

IT could take advantage of the efficiency arising from the standardization of some procedures for the traceability of the operations that are carried out from the general ledger to the reclassification. If this reconciliation is easier, it also adds up to saving of time and money for companies.

About the additional costs for auditors, opinions are differing. The majority of auditors belonging to this category think that auditors will not have a real increase in their workload. It could be more likely that some control procedures will change because of the XBRL automatism and that business data will be available with a higher level of timeliness, but this part of auditors do not think that XBRL will increase their workload and this also because thanks to the higher IT efficiency, auditors could be more usefully supported by IT staff. Such a better support can have positive effects also on the auditors' job. Recognizing the usefulness of a new technology is one of the main points of the TAM theory. In fact, studies on the TAM theory showed that the main factors of the acceptance and use of a new technology are the perceived usefulness—for example the improvement of the performances in access, compare and analyze XBRL financial statements—and the ease of use—for example the recognition that a new XBRL-related software can lead to higher efficiency with lower efforts.

Another line of thought which emerges from the interviews is that auditors will have to increase their IT skills given to the fact that they will have to work more closely with the IT specialists. This could lead to a general increase of training costs. Even if the IT staff will be positively affected by XBRL, it follows that auditors should, in any case, align their skills with those of the IT staff.

Regarding the profits which could arise from an additional XBRL assurance or XBRL auditing, interviewees belonging to this category have in common the idea that they could incur another risk by certifying another kind of financial statement (i.e. XBRL financial statements). The certification of correspondence between XBRL financial statement and the traditional financial statement could thus bring about new profits.

As follows, regarding this point, one statement from a manager well represents the common view of the whole category:

For assuring an XBRL financial statement, the auditor would have another responsibility. It may indicate “x” days, “y” hours required and therefore ask for an increase in fees. So there might be an increase in revenues for auditors but I’m almost sure that if an increase in costs will happen, this will be surely limited.

This category of respondents shows which are the main impressions of auditors regarding the XBRL assurance to the regime, and not just regarding the XBRL implementation. On the basis of the impressions expressed by auditors, it is enough clear that it is difficult for them to make a conscious Cost-Utility Analysis, since they never made auditing on XBRL financial statements; it is also quite clear that, whatever the line of thought, the interest in XBRL for these auditors is closely linked to the technical complexity that XBRL will lead and, subsequently, to the economic effects. In any case, the majority of interviewees expresses its interest in XBRL in terms of saving time and money, due to the improvement of technical efficiency in the IT procedures and, as a consequence, in the auditing procedures. Auditors express interest also in terms of new profits, due to the limited costs that XBRL could bring about and, at same time, the likelihood to apply new fees. The main points that emerge from the interviews are that the interest of auditors for XBRL is due to the potential improvement in the efficiency of the work, to the advantages arising from the better data comparability allowed by XBRL, to the business data integration and lower errors rate, and at same time, to the consideration that XBRL might be a new source of business.

Category Three—Cultural Reserves. This category is composed of 5 interviewees, that is 3 senior managers and 2 managers. Opinions related to this perspective have all in common the recognition of cultural limits in promoting a new Information Technology tool like XBRL. This is aligned with the principles of the Diffusion of Innovation Theory. According to such a theory the key elements of the diffusion are the innovation, the communication channel, the time and the social system [56]. Therefore, XBRL would stand for the “innovation” and the regulatory and institutional boards would stand for the communication channel. Time is the speed with which the innovation is used by the members of the social system (auditors) [56]. According to the real situation even if the innovation does exist, an effective communication channel seems to be still lacking.

In fact, according to auditors belonging to this category, the interest in XBRL will be stimulated only when information on XBRL are available and complete, and when the cultural resistances to the innovations will be surpassed. Culture

represents the first stimulus for encouraging change in any sector and promoting interest in any matter.

Auditors which answer to the interviews consider the interest in XBRL as dependent on the level of information available on it. A sufficient degree of information on XBRL could surely improve the interest in XBRL, but actually, such a level of information seems to be still low. Some auditors stated that they do not receive any information from institutions, and until there is such a little external XBRL informational, XBRL will remain vague.

Also, some reserves are expressed by the auditors on the possibility to develop interest on XBRL, because information related to it are either not available or not complete. As follows, an answer which confirms that information is one of the most significant triggers for stimulate XBRL culture and consequently, interest in XBRL:

There is a very low level of information. Even if we know what XBRL does, we still don't understand the ramifications.

The common view of this category of auditors is that XBRL will be implemented only for a final deposit, and this makes XBRL just another bureaucratic measure to be endured. According to these auditors, one of the main causes of the poor interest in XBRL is the limited use of XBRL, since it refers only to the final deposit of financial statement.

Instead, information about the potentialities of XBRL could help auditors in developing interest and to consider the real benefits of such an innovation. One of the answers received from a senior manager, following quoted, is very significant for explaining this point:

I can't find information to address this question: if companies implement XBRL, which advantages might they gain? How can XBRL be useful to us in practice?

Another issue that can counteract the interest in XBRL is the resistance to change related to the different way to perform the auditing activities. This point is closely related with the technical perspective. Only a few auditors agreed that the introduction of an innovation like XBRL has not serious impacts on the IT staff, since they are very accustomed and open to IT tools, but, if anything, XBRL might have impacts on the auditing activities, as it could lead to a more innovative auditing approach one.

Instead, the majority of respondents stated that the auditing of an XBRL financial statement could be interpreted as a duplicate activity, given that the auditing of the traditional financial statement is supposed to be not abandoned. Therefore, since the traditional auditing activities will still be conducted, auditors express doubts about the usefulness of a replication of those activities on a different format of the same financial statement. Thus, a new auditing approach for a new financial statement format seems to be difficulty accepted.

In this sense, the auditors of this category recognize the relevant role that regulatory boards will have in establishing rules, extent and approach to be followed for performing an XBRL auditing activity.

These considerations make clear the existence of linkages between the categories, and, especially with reference to the culture, the linkages seem to be stronger given that all the other categories are, in a certain way, considerable as a little part of the wider concept of “culture”.

Another interesting insight emerging from the interviews is that almost all the auditors belonging to this category evoked the financial scandals as the main trigger prompting change in Italy, explaining that when a fraud, which could have been avoided through the use of XBRL, is unmasked, then XBRL will get attention.

An Analysis of the Relationships Between the Case Studies. The results of the interviews allowed to classify auditors in categories ordered on the basis of the frequency with which they have considered as relevant the same perspective. In Fig. 2 it is represented a graphical illustration of the answers received from auditors, with respect to the four perspectives analyzed.

As we can see, the perspective which has been perceived by auditors as the most important for stimulating an XBRL interest, is the regulatory one.

In second place, we find the economical/technical perspective, considered strictly linked because of the reciprocal effects.

In third place, there are auditors who deem the cultural perspective as the main cause of the lack of XBRL interest, since it is the auditing profession’s alliances and culture itself that might inspire real interest and the dissemination of informed opinion about the potential benefits concerning XBRL assurance.

The four perspectives are not widely separated from each other, but instead closely linked. Figure 3 offers an illustration of the relationships among these perspectives.

The effect that arises from each perspective is reflected in at least one of the other perspectives. The most evident linkages are those regarding the regulatory implications on the technical and economical issues, but, in a wider sense, the

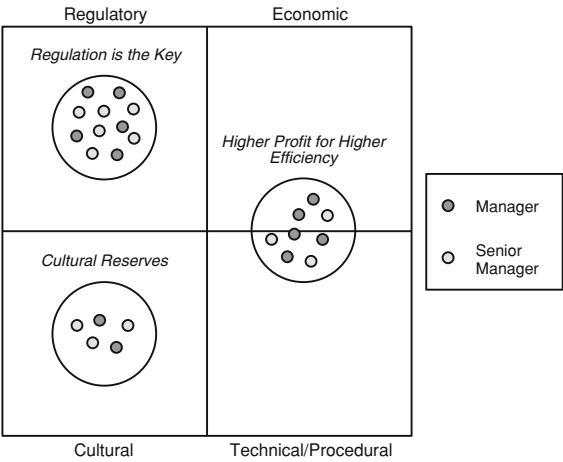


Fig. 2 The test of the framework

linkage between the cultural perspective and all the others is very evident. In fact, for achieving “cultural” diffusion of an innovation technology, such technology has to be previously accepted from the social system. In turn, the social system, in order to accept a new technology, requires to recognize its usefulness and benefits.

Further, starting from the regulatory perspective, a ramification involves the economic perspective and the technical one. Regulation can in fact establish the techniques to be followed and the fee to be applied. Also in alternative, technical perspective can affect the economic one, in case no fixed fees are established from regulatory boards. In this case, the more new auditing procedures are complex and involve new software, new skills and new work, the greater the effects on the economic dimension will be.

Moreover, if regulatory boards impose a “soft” XBRL assurance approach, the law will become just another new legal compliance issue. If the legislature requires a “hard” mandatory XBRL assurance approach, then audited companies will suffer a new investment and managers will want to know clearly which are the related remunerations and advantages.

Finally, a lack in the culture perspective has effects on all the other perspectives. Poor information about XBRL can compromise understanding about its advantages and potentials, thus undermining the likelihood of developing interest in XBRL. Looking at it from the other side, when the skills, the experience and the practice are developed over time, they can become a central cultural element and can contribute to an increase in the cultural attention to XBRL. Similarly, a lack of institutional attention to XBRL can have effects on the economic advantages that might accrue from an XBRL assurance. When regulatory agencies feel the need to regulate XBRL audit activities, then they will contribute to both the technical and procedural dimensions (see Fig. 3) and to the culture as well.

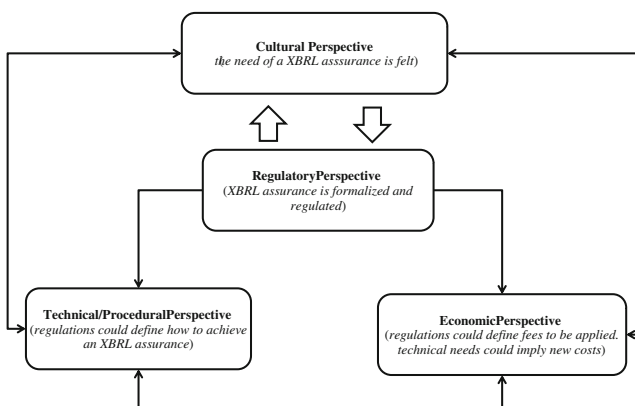


Fig. 3 The relationships inside the framework

5 Conclusions

This research paper tries to bridge a theory–practice gap related to XBRL, providing evidence about a great disparity in attention that exists between academics, on one side, and auditors, on the other, concerning the practical utility of XBRL.

In fact, on the theoretical side, scholars have focused attention on the benefits that XBRL could allow for a wide category of stakeholders, considering auditors as the primary stakeholders who ought to become more involved in XBRL. A number of reasons have been advanced in support of a greater role for auditing in the XBRL era such as an improvement in corporate governance and auditing, as a part of the corporate governance framework, in the development of continuous assurance/auditing techniques, in automatic validation of calculated numbers or compliance with disclosure checklists and, generally speaking, in an easier, efficient and effective auditing activity.

Nonetheless, on the practical side, poor attention has been paid to how and why XBRL may really interest auditors. On the empirical side, evidence shows that the expertise of auditors in XBRL assurance procedures is not as high as it should be and a lack of interest, knowledge and experience in XBRL emerges. A low auditor interest in XBRL can be explained by the present situation in Italy, where traditional financial statements accompany the instance documents. Both versions are often presented for external consumption. In this scenario, assurance would include the attestation that the data presented in the instance document is the same as the data in the audited financial statements and that both comply with regulatory and legislative requirements [13].

Given such a gap, this paper aims to survey the interest in XBRL within large Italian auditing firms, proposing a framework composed of four perspectives, in the hypothesis that one or more of these contribute to the state of inattention by auditors for XBRL: regulatory, economic, procedural/technical, cultural.

As the aim of this research is to survey auditor interest in XBRL, we made a preliminary survey in order to insure that the low interest of auditors does not depend on poor knowledge of XBRL benefits. The result of the preliminary survey shows that auditors are not influenced by the benefits of XBRL and thus it is possible to exclude the notion that XBRL benefits are a driver for interest in XBRL. Other causes can thus explain the limited interest of auditors in XBRL. Therefore, in order to find them, we performed a more in-depth multiple case study analysis.

Results from this study's interviews confirm the higher significance played by the regulatory approach, compared to other perspectives proposed in the theoretical framework. Strengthening the limited grasp of XBRL among auditors would promote their usage of the program, so that many of the benefits described for XBRL in the scholarly literature might become a reality in the everyday business sector.

As a result, before a new expectation gap arises, or a new financial scandal comes out, auditing professionals should be strongly involved in the XBRL digital format. Although the findings of this research cannot be extended and considered broadly applicable, some conclusions can be offered in order to better understand

the future prospects of XBRL auditing, especially in countries where SMEs are the predominant kind of company. In this regard, auditor involvement would allow unlisted companies to create individual extensions that can be submitted to the independent auditors in order to be verified. Such individual extensions may allow unlisted companies to take advantage from the XBRL benefits that scholars recognize for larger companies. Moreover, although the small-medium unlisted firm is the most widespread model in the Italian economy, actually it is not likely that an XBRL assurance service was voluntarily asked for by unlisted companies, unless a specific regulatory intervention is arranged.

The risk implicit in an only formal control would be avoided by stimulating professional bodies to study and adopt the XBRL technology. Furthermore, the investigation presented in this research paper should be extended to other countries, or into other contexts where XBRL reporting is compulsory, in order to understand which attitudes predominate in determining auditors' interest—or lack of it—in XBRL.

Standard setters and regulators around the world may refer to the framework proposed in this research paper in order to study and analyze how XBRL should be implemented in a specific country, how to involve auditors and how to develop interest and involvement in XBRL.

This research paper also answers to an increasing need of empirical and behavioural research claimed by scholars, and still required, regarding the investigation of the real opportunities offered by XBRL, beyond the mere implementation for legal requirements. Future researches on this topic should be addressed in order to investigate the way in which XBRL can effectively create value for an auditing firm and which implications could affect the audited firms.

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