Journal homepage: <a href="https://ijaaf.um.ac.ir">https://ijaaf.um.ac.ir</a>
DOI: 10.22067/ijaaf.v4i1.88702
Review Article

# Comments on the Context-Specific Nature of Financial Reporting Quality

#### Reza Hesarzadeh\*

Faculty of Economics and Business Administration, Ferdowsi University of Mashhad, Mashhad, Iran

## **ABSTRACT**

Some conceptual studies believe that the nature of financial reporting quality (FRQ) is inherently context-specific, i.e., FRQ is defined only in the context of a specific decision made by a specific decision-maker, and it alone is meaningless. This article discusses how conditioning the FRQ on a specific context is not based on a well-built concept and may lead to problematic and misleading conclusions.

**Keywords**: financial reporting quality; context-specific nature; comment

\* Corresponding author: Associate Professor of Accounting, Email: hesarzadeh@um.ac.ir



**Finance** 

Journal of

Accounting, Auditing and

## 1. Introduction

Providing overall high-quality financial reporting is critical because it positively influences capital providers in making resource allocation decisions that enhance the functioning of capital markets and the efficient operation of economies (Financial Accounting Standards Board (FASB) 2010; International Accounting Standards Board (IASB) 2010). Over the past two decades, this issue and other factors, such as the emphasis of supervisory agencies (e.g., the U.S. Securities and Exchange Commission) on high-quality financial reporting, and the development and implementation of the international financial reporting standards (IFRS) (DeFond 2010), has resulted in many studies of the financial reporting quality (FRQ).

While FRQ studies have made significant advances, they face difficult challenges to conceptualize and measure FRQ. Particularly yet, there are broad disagreements about how to define and measure FRQ (e.g., Dichev et al. 2013; Zhang 2020). However, some conceptual studies (e.g., Francis et al. 2006; Dechow et al. 2010; Nelson and Skinner 2013; Elliott et al., 2020) dismiss the suspense file and suggest the nature of FRQ is inherently context-specific, i.e., it is defined only in the context of a specific decision made by a specific decision-maker and FRQ alone is meaningless. For example, Dechow et al. (2010) define FRQ as

... "provide(ing) more information about the features of a firm's financial performance that are relevant to a specific decision made by a specific decision-maker" (emphasis added).

The purpose of this paper is to discuss that conditioning the FRQ on a *specific* decision made by a *particular* decision-maker is not based on well-built concepts and may lead to problematic and misleading conclusions. For example, this paper will discuss a high-quality financial reporting set, as the studies interpret it as conditional in a specific context, even cannot contribute to making a good specific decision.

The paper is organized into five sections. Section 2 elaborates on the background for the study. Section 3 presents comments on the context-specific nature of FRQ. Section 4 presents some suggestions, and Section 5 summarizes it.

# 2. Background: Specific Utility and Overall Utility Perspectives of FRQ

Surveying the empirical-archival literature shows that there are various views about the concept of FRQ and how to choose FRQ measures. But it seems that each of these views can be considered closer to one of the two following perspectives:

In the first perspective, the nature of FRQ is inherently context-specific, and therefore, FRQ alone is meaningless, i.e., it is defined only in the context of a specific decision made by a specific decision-maker. Then, FRQ is conditioned to a specific decision and a particular maker of decision, and it does not mean anything by itself (see, for example, Francis et al. 2006; Dechow et al. 2010; Nelson and Skinner 2013; Czerney et al., 2019). In this perspective, the FRQ measure should be selected according to the specific context, so the FRQ measure is unique (Dechow et al. 2010). First, it should be determined what aspect should financial reporting capture and describe the specific context, then the measure related to the answer should be chosen.

<sup>1-</sup>Such studies have usually employed various terminologies, such as accounting quality, transparency, earnings quality and financial reporting quality. I choose "financial reporting quality" as the terminology because it seems more accurate than other terminologies for this paper and the general intention of such studies. Accounting has diverse formal functions, such as accounting for managements, accounting for governance and accounting for financial accountability. Based on these diverse formal functions, the concept of accounting quality may be different. Moreover, some quality measures are not merely limited to earnings; thus, earnings quality is not an inclusive terminology. In addition, transparency is generally interpreted as the openness or availability of information and therefore, similar to earnings quality, does not seem to be an inclusive term.

In a more detailed explanation, the researcher should usually answer a series of questions to select proper measure:

- Q1: which specific decision and specific decision-maker are going to be examined?
- Q2: which information /information characteristics are needed?
- Q3: which FRQ measure reflects that (those) information/information characteristics?

The answer to the third question is the same measure that should be selected. Besides, this measure, by default, can be used in the context of the first question (Q1).

In the second perspective, FRQ is not conditioned to a specific decision or a specific decision-maker, but a substantial utility over a wide range of decisions and decision-makers (see, for example, Bhattacharya et al. 2003; Givoly et al. 2010; Boulton et al. 2011; Chen et al. 2011; Dichev et al. 2013; Hope et al. 2013; Raman et al. 2013). From this perspective, the FRQ measure should cover various dimensions of FRQ. These various dimensions are ambiguous, so several measures must be chosen to increase the probability of covering all dimensions (see, for example, Givoly et al. 2010). In a more detailed explanation, the researcher should usually answer a series of questions to select proper measure:

- Q1: what are the different groups of decisions and decision-makers?
- Q2: which mutual information/information characteristics are needed?
- Q3: which FRQ measures reflect that (those) mutual information/information characteristics?

The answer to the third question is the same measure that should be selected. Besides, this measure, by default, can be used in various contexts.

Therefore, as mentioned earlier, in the first perspective, FRQ is conditioned to a specific decision or specific decision-maker, and FRQ measure should be chosen according to the specific context. In the second perspective, FRQ is conditioned to an overall utility over a wide range of decisions and decision-makers, and FRQ measure is independent of a specific context.

Note that studies related to both perspectives concentrate on a specific decision and a specific decision maker proper to their research question/subject. Yet, as previously mentioned, studies related to the first perspective choose the FRQ measure based on that specific context, and studies related to the second perspective select the FRQ measure that has substantial utility over a wide range of decisions and decision-makers.

To be more brief and clear, hereafter, the first perspective will be called "specific utility perspective," and the second one will be called "overall utility perspective."

# 3. Comments on the Context-Specific Nature of FRQ

This section presents some comments on the context-specific nature of FRQ. It discusses how conditioning the FRQ on a specific context is not based on a well-built concept and may lead to problematic and misleading conclusions. It discusses the comments in two outlooks, including the "concept of decision-relevance" and "problematic conclusions."

## 3.1. Concept of decision-relevance

As formerly mentioned, the specific utility perspective believes the context-specific nature of FRQ is based on the concept of the decision-relevance in *The Conceptual Framework For Financial Reporting* and, as a result, concludes the term FRQ alone is meaningless unless used in the context of a specific decision made by a specific decision-maker (see, for example, Francis et al. 2006; Dechow et al. 2010). This interpretation is subject to the following two comments:

**32** 

Iranian

**Finance** 

Journal of Accounting,

Auditing and

• First, it seems that the concept of decision-relevance in *The Conceptual Framework For Financial Reporting* is not highlighted as much as this concept in the specific utility perspective.

To clarify, although *The Conceptual Framework For Financial Reporting* uses the character of the decision-relevance to defined and achieve the FRQ, it *also* uses other characteristics. According to the *Conceptual Framework For Financial Reporting*, FRQ is defined and achieved by adherence to information characteristics (FASB 2010; IASB 2010). Some of the characteristics are "related to overall utility over a wide range of decisions and decision-makers."

For example, while characteristics regarding relevance, including predictive value or confirmatory value, may be related to the context, the characteristics regarding reliability (or representational faithfulness), including completeness, neutrality, and free from error, are related to an overall utility over a wide range of decisions and decision-makers. To explain, unlike relevance, reliability is a basic characteristic of information, and information users are well acquainted with its *determinants*. To support this assertion, Kadous et al. (2012) provide evidence that reliability is a basic property of information that users understand well. On the other hand, relevance is related to context and requires a more difficult analysis.<sup>1</sup>

Therefore, if we accept that achieving various characteristics is necessary for achieving FRQ and that some of the characteristics are "related to overall utility over a wide range of decisions and decision-makers," then the overall utility perspective should be taken into consideration to achieve FRQ. So it is clear that attending to the other characteristics (and not only the decision-relevance) is necessary to conceptualize and measure FRQ. In summary, it seems a specific utility perspective overemphasizes the concept of decision-relevance.

• Second, it seems that the concept of decision-relevance in *The Conceptual Framework For Financial Reporting* is not necessarily contingent on a specific decision made by a specific decision-maker.

To clarify, according to *The Conceptual Framework For Financial Reporting*, the concept of decision-relevance of information does not necessarily indicate that information is relevant to a specific decision or a specific decision-maker, but most imply that the information is relevant to the *general process* of decision making. The concept of decision-relevance is defined independently of and without reference to specific preferences, decision models, or even the actual use of information (Williams and Ravenscroft 2014). To explain, according to *The Conceptual Framework For Financial Reporting* (FASB 2010; IASB 2010), information is decision-relevant if it has predictive value or is confirmatory. Predictive value and confirmatory relate to the general process of decision-making and can relate to different decisions (rather than necessarily a specific decision or a specific decision-maker). Several reasons generally indicate decision relevance or specifically predictive value and confirmatory most relate to the general process of decision making. For example:

- Financial information has predictive value if used as an input to *primary users' processes* to predict future outcomes. Further, financial information has
   confirmatory value if it provides feedback about (confirms or changes) previous
   evaluations (FASB 2010; IASB 2010).
- Furthermore, financial reporting meets the *common needs* for decision-making, like information for assessing future net cash inflows' prospects for an entity that most users need (FASB 2010; IASB 2010).

<sup>1-</sup> Kadous et al. (2012) reveal that users will substitute the more accessible assessment of measurement reliability when asked to assess the relevance of information.

 Mainly financial reporting is not of any value to a specific decision or specific decision-maker; instead, its value lies in addressing the primary users as a whole (Beaver 1981).

The *general process* of decision making usually requires predicting future outcomes, getting feedback, assessing prospects for future net cash inflows, assessing the competitive opportunity, and so on. This *general process* of decision making is not usually contingent on a specific decision and decision-maker.

In summary, it seems a specific utility perspective chooses limited intuition from the concept of decision-relevance and overemphasizes the specific decision-maker's specific decision.

Therefore, it seems a specific utility perspective overemphasizes the concept of decision-relevance and chooses limited intuition from the concept. As a result, the decision-relevance concept is not a well-built concept to condition FRQ to a specific decision-maker's specific decision.

## 3.2. Problematic conclusions

Conditioning the FRQ on a specific decision made by a particular decision-maker may lead to some problematic conclusions. Here, this paper presents six general cases.

First, suppose there are three specific decisions that information users make:  $\psi_1$ ,  $\psi_2$ , and  $\psi_3$ . Furthermore, suppose a set of financial reporting,  $\eta_1$ , provides information that is relevant to the three specific decisions  $\psi_1$ ,  $\psi_2$  and  $\psi_3$  and that another set of financial reporting,  $\eta_2$ , provides information that is relevant to only one specific decision  $\psi_3$ . If the information of  $\eta_1$  is generally greater than that of  $\eta_2$  but is less than that of  $\eta_2$  for  $\psi_3$ , based on specific utility perspective and ceteris paribus, it cannot be said that  $\eta_1$  has a higher FRQ than  $\eta_2$ ; it can only be said that  $\eta_2$  has a higher FRQ than  $\eta_1$  in the context of a specific decision  $\psi_3$  (see, for example, Dechow et al.'s definition in the second paragraph of introduction). As a result, based on a specific utility perspective, it cannot be said that  $\eta_1$ , which is more useful than  $\eta_2$ , has a higher FRQ.

Second, suppose a set of financial reporting provides more information (than others) about the features of a firm's financial performance relevant to all or most of the decisions. Based on a specific utility perspective, we have to conclude that in the context of and for each specific decision made by a particular decision-maker, naming that set of financial reporting as having higher FRQ is correct. However, in the context of and for all or most decisions (not in the context of a specific decision made by a particular maker of decision), it is not very sensible to describe the set as having higher FRO.

Third, users' decisions involve choosing between alternatives, such as buying, selling, or holding an investment (FASB 2010; IASB 2010). To make a good specific decision, a decision-maker must assess and compare the general results of different decisions (rather than a specific decision) and then need to more information relevant to different decisions (FASB 2010; IASB 2010) or high-quality information around different decisions. For example, an investor that is going to increase investment needs to the information not only to outlook the results of buying the investment but also to outlook the results of other decisions like selling and holding the investment or even decisions beyond trading decisions like changing boards of directors. Therefore, a high-quality set of financial reporting should provide information for different decisions.

<sup>1-</sup> Suppose that a set of financial reporting  $\eta 1$ , provides more information about the features of a firm's financial performance than another set of financial reporting,  $\eta 2$ , so that the information of  $\eta 1$  is more decision-relevant than that of  $\eta 2$ . In other words,  $\eta 1$  has more predictive value - it can be better used as an input to processes employed by users to predict future outcomes - and more confirmatory value - it provides better feedback about (confirms or changes) previous evaluations - than  $\eta 2$ . Given specific utility perspective and ceteris paribus, the quality of  $\eta 1$  and  $\eta 2$  cannot be assessed because QFR is meaningless except in the context of a specific decision.

**Finance** 

Journal of

Accounting,

**Auditing and** 

With this explained, a high-quality financial reporting collection, that specific utility perspective interprets it as conditional on a particular decision, even cannot contribute to making a good specific decision.

Moreover, a decision-maker may make several decisions such that the decision portfolio (rather than each specific decision) is good. In summary, the presence of information about the alternatives allows a good specific decision to be made. Therefore, a set of financial reporting that provides more information that is relevant to a specific decision made by a specific decision-maker cannot necessarily be of high FRO.

Forth, financial reporting is provided for a wide range of primary users, including existing and potential investors, lenders, and other creditors (FASB 2010; IASB 2010), not for a specific decision-maker.<sup>1</sup> Hence, if, for example, financial reporting presents the information in a way that increases information asymmetry, such that information is achievable to only a specific decision-maker, it seems the financial reporting should not be regarded as high quality, even if additional (more) information is provided for a particular decision made by the decision-maker. Otherwise, the concept of FRQ demotes to group individualism.<sup>2</sup> Furthermore, such an interpretation prevents us from assessing FRQ as a general utility.

Fifth, financial reporting is provided for external users. Hence, if, for example, financial reporting provides information for managers rather the primary users, in contrast to specific utility perspective, it seems that the financial reporting should not be regarded as high quality since it is far from its primary function (For example, see paragraph BC1.23 in *The Conceptual Framework For Financial Reporting* about the conflicts between regulators and main users). There are similar explanations for main decisions (decisions about providing resources to the entity) versus all specific decisions.

Sixth, practically, should such statements as "the information based on U.S. GAAP or IFRS are high quality" be necessary considered meaningless due to not being conditional on a specific decision? Is overall FRQ necessarily meaningless? Can specific utility necessary lead to overall usefulness? Affirmative answers to these questions seem to be relatively difficult.

# 4. general comment on overall utility perspective and future directions

This paper puts some comments on the context-specific nature of FRQ in the specific utility perspectives. In summary, the comments imply that specific usefulness per se is not necessarily evidence of FRQ. Then, what is FRQ?

It seems that interpreting quality as fitness for purpose (e.g., Ball and Urwin, 1985; Harvey and Green 1993; Klobas 1995; Woodhouse 2012; Peyravan 2020), a set of financial reporting can describe higher quality if that set better fits the purpose of financial reporting. The purpose of financial reporting is overall usefulness. So, a set of financial reporting can describe higher quality if that set better fits the overall usefulness. With this interpretation, high-quality financial reporting may have varying degrees of specific usefulness for different primary users (i.e., it may be useful for a particular decision and specific decision-maker and simultaneity not be useful for another), but it should generally meet more of the common needs of more of the

<sup>1-</sup> Although, other users, such as regulators and members of the public other than investors, lenders and other creditors, may also find financial reporting useful, but financial reporting is not primarily directed to these other groups (FASB 2010; IASB 2010).

<sup>2-</sup> See study of Williams and Ravenscroft (2014). They conclude that the current concept of decision usefulness is incoherent because policy makers and scholars have not seriously dealt with deeply-flawed ontological assumptions inherent in its definition and justification.

**Comment** 

s on the

primary users (FASB 2010; IASB 2010; Isidro and Nanda, 2020).¹ Therefore, financial reporting should not be considered high quality just because of its usefulness for a specific decision made by a specific decision-maker. Similarly, a measure should not be deemed an FRQ measure just because of its usefulness for a specific decision made by a specific decision-maker. Stated differently, a measure that is useful in one decision is not necessarily an FRQ measure.

Taken together, it seems that researchers should distinguish the specific and overall usefulness and focus more on looking for general usefulness measures. This moving from a focus on particular usefulness to a focus on the primary users as a whole cannot be ignored.<sup>2</sup>

The interpretation above is relatively closer to the impressions of overall utility perspective (see, Dichev et al. 2013) since it implies that the same core concept of FRQ has substantial utility over a wide range of settings and the influence of a specific context is limited. However, the overall utility perspective faces some critical challenges and needs some improvements (see Dechow et al. 2010; Nelson and Skiner 2013).

Particularly, according to the conceptual and theoretical literature, the attention to "the impact of FRQ measures on dependent variables in trade-off/interaction and combination with other FRQ measures" (hereafter, "collective role of FRQ measures") is often necessary.<sup>3</sup> It seems the overall utility perspective suffers from neglecting the collective role of FRQ measures when it chooses the FRQ measures. As a result of neglecting the collective roles of QFR measures, the overall utility perspective cannot achieve an appropriate trade-off/interaction-based combination of QFR to measure overall QFR (overall utility).<sup>4</sup>

To clarify, in the overall utility perspective, the concept of FRQ as an overall utility and its dimensions are ambiguous (see questions Q´1 to Q´3 in section 2). Therefore, the perspective to escape the ambiguity and reduce the effect of applying a specific QFR measure on research results usually chooses *several* common measures.<sup>5</sup> The challenge here is that these several common measures are taken from the current studies that neglect the collective role of FRQ measures. The current studies usually concentrate on individual relationships (i.e., single-expected relationship) between QFR and other variables. Therefore, they do not analyze and investigate the relationship between a trade-off/interaction-based combination of QFR measures and the other variables. Currently, numerous empirical research assumes that the collective and individual role of FRQ measures are the same. This assumption results from the difficulty in the empirical investigation of the trade-off/interaction of QFR measures (e.g., Defond 2010).<sup>6</sup>

<sup>1-</sup> Specific usefulness is good for a specific decision or decision maker, but QFR is good for most of those for whom financial reporting is prepared.

<sup>2-</sup> Note the results of studies on specific usefulness may help the studies on overall usefulness to find overall usefulness measures. For example, the studies on overall usefulness may employ Meta-Analysis through the results of studies on specific usefulness.

<sup>3-</sup> According to theoretical discussions supporting *The Conceptual Framework For Financial Reporting*, higher quality or overall usefulness are obtained by achieving a collection of characteristics (IASB 2008). Therefore, it is expected that higher quality be a product composed of various characteristics package and not just one characteristic. In other hand, a balancing or trade-off, between the characteristics is often necessary. Therefore, it is expected that higher quality be a product of proper trade-off/interaction or combination, not just plain aggregation of measures.

<sup>4-</sup> Currently the empirical studies that tend to measure the overall QFR, usually choose perfectly different QFR measures. This causes that specific utility perspective conclude there are some research opportunities that researchers choose their favorable measures (e.g., see Dechow et al. 2010).

<sup>5-</sup> For example, some researches' (e.g., Boulton et al. 2011; Chen et al. 2011; Hope et al. 2013) reasons for using multiple measures are to cover all of the dimensions of FRQ and mitigate the probability of measuring something other than quality.

<sup>6-</sup> Note overall utility perspective studies apply the FRQ measures separately (see, for example, Koh et al. 2013; Kim and Zhang 2014) or aggregate form (see, for example, Bhattacharya et al. 2003; Bharath et al. 2008; Beatty et al.

**Finance** 

Journal of

Accounting,

**Auditing and** 

In contrast to the assumption above, the decision tree methodology can empirically determine the trade-off of measures style and the importance of every measure that can help researchers that finally select the best combinations of measures to measure overall FRQ better. For more explanations, conventional statistical methods such as Regression or Factor Analysis are generally faced with limitations in showing the accurate manner of trade-off/interaction and combination of independent variables for affecting the dependent variables. Though, the decision tree method can show the accurate manner of trade-off and a combination of independent variables for affecting the dependent variables. Besides, this method is considered as a data (knowledge) mining method or unknown knowledge discovering process (Hastie et al., 2013; Provost and Fawcett, 2013) and provides the tools to conduct induction through classification (For more details, refer to Appendix A).

So, future studies can employ the decision tree methodology to determine which trade-off/interaction-based combination of FRQ measures could influence different dependent variables. This approach probably helps to find a trade-off/interaction-based combination of FRQ measures that measure overall utility.

## 5. Summary

The specific utility perspective of FRQ believes the nature of FRQ is inherently context-specific. This article discusses how conditioning the FRQ of a particular context is not based on a well-built concept and may lead to problematic and misleading conclusions. In contrast, the overall utility perspective believes the nature of FRQ is conditional on the overall utility. Then it seems overall utility perspective better fits with the purpose of financial reporting. However, it needs some improvements.

As a general conclusion, it seems to condition the FRQ on a specific context cannot be a solution to dismiss the suspense file of conceptualizing and measuring overall quality. Instead, it seems moving from a focus on specific usefulness to a focus on overall usefulness is necessary.

<sup>1-</sup> Dichev et al. (2013) report that there is little guidance in the literature on (1) the relative importance of measures, (2) whether there are specific contexts in which one measure is more important than the other and (3) what trade-offs should weigh when deciding to choose one measure over the other. The suggested decision tree analysis methodology could relatively respond three cases.

## References

- Ball, C. and Urwin, D. (1985). *Fitness for purpose*. Surrey: Guildford. <a href="https://www.worldcat.org/title/fitness-for-purpose-essays-in-higher-education/oclc/902014265?referer=di&ht=edition">https://www.worldcat.org/title/fitness-for-purpose-essays-in-higher-education/oclc/902014265?referer=di&ht=edition</a>
- Beatty, A., S. Liao, and J. Weber. 2010. Financial reporting quality, private information, monitoring, and the lease-versus-buy decision. *The Accounting Review*, 85 (4), 1215–1238. https://dspace.mit.edu/handle/1721.1/76295
- Beaver, W.H. (1981). *Financial reporting: An accounting revolution*. Englewood Cliffs, NJ: Prentice-Hall.
- Beynon, M.J. Peel, M.J. and Tang, Y. (2004). The application of fuzzy decision tree analysis in an exposition of the antecedents of audit fees. *Omega*, 32 (3), 231–244. https://doi.org/10.1016/j.omega.2003.11.003
- Bharath, S.T. Sunder, J. and Sunder, S.V. (2008). Accounting quality and debt contracting. *The Accounting Review*, 83 (1), 1–28. https://www.jstor.org/stable/30243509
- Bhattacharya, U. Daouk, H. and Welker, M. (2003). The world price of earnings opacity. *The Accounting Review*, 78 (3), 641–678. https://www.jstor.org/stable/3203220
- Biddle, G. and Hilary, G. (2006). Accounting quality and firm-level capital investment. *The Accounting Review*, 81 (5), 963–982. https://www.jstor.org/stable/4093094
- Boulton, T.J. Smart, S.B. and Zutter, C.J. (2011). Earnings quality and international IPO underpricing. *The Accounting Review*, 86 (2), 483–505. <a href="https://www.jstor.org/stable/29780243">https://www.jstor.org/stable/29780243</a>
- Chen, F. Hope, O.K. Li, Q. and Wang, X. (2011). Financial reporting quality and investment efficiency of private firms in emerging markets. *The Accounting Review*, 86 (4), 1255–1288. <a href="https://www.jstor.org/stable/23045602">https://www.jstor.org/stable/23045602</a>
- Czerney, K. Schmidt, J.J. Thompson, A.M. and Zhu, W. (2019). Do Type II subsequent events impair financial reporting quality?. *The Accounting Review*, https://doi.org/10.2308/accr-52662
- Dechow, P. Ge, W. and Schrand, C. (2010). Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics*, 50 (2-3), 344–401. https://doi.org/10.1016/j.jacceco.2010.09.001
- DeFond, M.L. (2010). Earnings quality research: Advances, challenges and future research. *Journal of Accounting and Economics*, 50 (2-3), 402–409. <a href="https://doi.org/10.1016/j.jacceco.2010.10.004">https://doi.org/10.1016/j.jacceco.2010.10.004</a>
- Dichev, I.D. Graham, J. Harvey, C.R. and Rajgopal, S. (2013). Earnings quality: Evidence from the field, *Journal of Accounting and Economics*, 56 (2-3), 1–33. https://doi.org/10.1016/j.jacceco.2013.05.004
- Elliott, W.B. Fanning, K. and Peecher, M.E. (2020). Do Investors Value Higher Financial Reporting Quality, and Can Expanded Audit Reports Unlock This Value? The Accounting Review, 95(2), 141–165. <a href="https://doi.org/10.2308/accr-52508">DOI:10.2308/accr-52508</a>
- Financial Accounting Standards Board. (2010). Concepts Statement No. 8 Conceptual Framework For Financial Reporting—Chapter 1, The Objective of General Purpose Financial Reporting, and Chapter 3, Qualitative Characteristics of Useful Financial Information. FASB, Norwalk, CT.
- Francis, J. Olsson, P. and Schipper, K. (2006). Earnings quality. *Foundation and Trends in Accounting*, 1(4), 259–340. <a href="http://dx.doi.org/10.1561/1400000004">http://dx.doi.org/10.1561/1400000004</a>
- Givoly, D. Hayn, C. and Katz, S.P. (2010). Does public ownership of equity improve earnings quality?. *The Accounting Review*, 85 (1), 195–225. Doi: 10.2308/accr.2010.85.1.195
- Harvey, L. and Green, D. (1993). Defining quality. Assessment and evaluation in higher

**Finance** 

Journal of

Accounting,

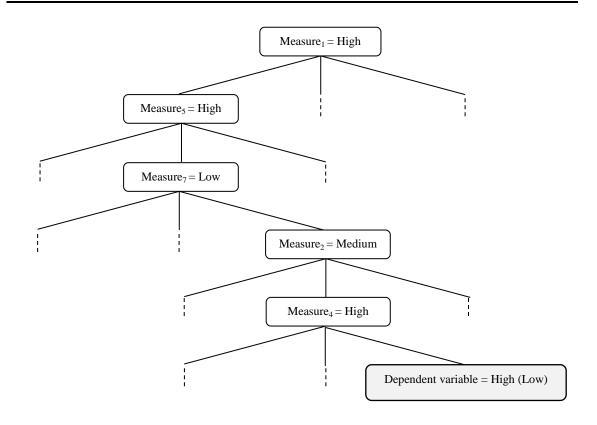
**Auditing and** 

- education, 18 (1), 9-34. https://doi.org/10.1080/0260293930180102
- Hope, O.K. Thomas, W.B. and Vyas, D. (2013). Financial reporting quality of U.S. private and public firms. *The Accounting Review*, 88 (5), 1715–1742. <a href="https://www.jstor.org/stable/23526001">https://www.jstor.org/stable/23526001</a>
- International Accounting Standards Board (IASB). (2008). Exposure Draft on an improved Conceptual Framework For Financial Reporting: The Objective of Financial Reporting and Qualitative Characteristics of Decision-useful Financial Reporting Information. London, 1–64.
- International Accounting Standards Board (IASB). (2010). *The Conceptual Framework For Financial Reporting*. IASB, London.
- Isidro, H. and Nanda, D. (DJ), and Wysocki, P. D. (2019). On the Relation between Financial Reporting Quality and Country Attributes: Research Challenges and Opportunities. The Accounting Review, 95 (3), 279–314. <a href="DOI:10.2308/accr-52607">DOI:10.2308/accr-52607</a>
- Kadous, K. Koonce, L. and Thayer, J. M. (2012). Do financial statement users judge relevance based on properties of reliability?. *The Accounting Review*, 87 (4), 1335–1356. <a href="https://doi.org/10.2308/accr-50157">https://doi.org/10.2308/accr-50157</a>
- Kim, J. and Zhang, L. (2014). Financial reporting opacity and expected crash risk: Evidence from implied volatility smirks. *Contemporary Accounting Research*, 31(3), 851-875. <a href="https://doi.org/10.1111/1911-3846.12048">https://doi.org/10.1111/1911-3846.12048</a>
- Klobas, J.E. (1995). Beyond information quality: fitness for purpose and electronic information resource use. *Journal of Information Science*, 21 (2), 95–114. https://dl.acm.org/doi/10.1177/016555159502100204
- Koh, K. Rajgopal, S. and Srinivasan, S. (2013). Non-audit services and financial reporting quality: evidence from 1978 to 1980. *Review of Accounting Studies*, 18, 1–33. https://link.springer.com/article/10.1007/s11142-012-9187-6
- Krishnan, J. Wen, Y. and Zhao, W. (2011). Legal expertise on corporate audit committees and financial reporting quality. *The Accounting Review*, 86 (6), 2099–2130. DOI: 10.2308/accr-10135
- Nelson, M.W. and Skinner, D.J. (2013). How should we think about earnings quality? A discussion of "Earnings Quality: Evidence from the Field. *Journal of Accounting and Economics*, 56 (2-3), 34-41. <a href="https://doi.org/10.1016/j.jacceco.2013.10.003">https://doi.org/10.1016/j.jacceco.2013.10.003</a>
- Peyravan, L. (2020). Financial Reporting Quality and Dual-Holding of Debt and Equity. *The Accounting Review*, 0000–0000. doi:10.2308/accr-52661
- Raman, K. Shivakumar, L. and Tamayo, A. (2013). Target's earnings quality and bidders' takeover decisions. *Review of Accounting Studies*, 18 (4), 1050-1087. https://link.springer.com/article/10.1007/s11142-013-9224-0
- Williams, P.F. and Ravenscroft, S. (2014). Rethinking decision usefulness. *Contemporary Accounting Research*, 32 (2), 763–788. <a href="https://doi.org/10.1111/1911-3846.12083">https://doi.org/10.1111/1911-3846.12083</a>
- Woodhouse, D. (2012). A Short History of Quality. Abu Dhabi: Commission for Academic Accreditation.
- Zhang, D. (2020). Top Management Team Characteristics and Financial Reporting Quality. The Accounting Review, 94 (5), 349–375. <a href="https://doi.org/10.2308/accr-52360">https://doi.org/10.2308/accr-52360</a>

### **39**

#### APPENDIX A

## A Simple Example of Decision Tree: Fuzzy Version



### **Interpretation (Fuzzy Rule):**

If Measure<sub>1</sub> = High and Measure<sub>5</sub> = High and Measure<sub>7</sub> = Low and Measure<sub>2</sub> = Medium and Measure<sub>4</sub> = High then Information = High or Uncertainty = Low with truth level of X%. or (equivalently)

For a company with high Measure<sub>1</sub>, high Measure<sub>5</sub>, low Measure<sub>7</sub>, medium Measure<sub>2</sub>, high Measure<sub>4</sub>, then a high level of information or low level of uncertainty is expected with a true level of X%.

#### **General Explanations of Decision Tree Analysis Methodology:**

Decision tree analysis creates a tree-based classification model. It breaks up a collection of heterogeneous records into smaller groups of homogeneous records using directed knowledge discovery. In brief, it classifies cases (different characteristics) into groups and predicts the values of a dependent variable (more information or less uncertainty). The procedure provides validation tools for exploratory and confirmatory classification analysis. Decision tree learning is commonly used in data mining. The goal is to create a model that predicts a target variable's value based on a trade-off of several input variables. The structure of a decision tree commences with a root node, from which all branches originate. A branch takes the form of a series of nodes, where decisions on condition attribute values are made at each node, enabling progression through (down) the tree. A progression stops at a leaf node, where a decision classification is given based on the rule associated with the full branch from the root node to the individual leaf node (Beynon et al. 2004). The method uses recursive partitioning to split the training records into segments by minimizing the impurity at each step, where a node is considered "pure" if 100% of cases in the node fall in a specific category of the target field.