

# Relevance in Information Systems

**Mariusz Karwowski, Monika Raulinajtys-Grzybek, Gertruda Krystyna Świdorska**

Department of Management Accounting, Warsaw School of Economics

**Abstract** – The purpose of the research underlying this article is to present how the concept of relevance is defined in accounting information system and analyse those definitions in comparison to the definition of relevance in information science. For this purpose, a systematic review related to the issue was conducted. The article presents the definitions of relevance used in publications concerning accounting information system with all its subsystems. In financial accounting and audit, materiality, which is the entity-specific aspect of relevance, is a measure of the usefulness of information for the user of financial statements. It is expressed quantitatively, but also depends on qualitative considerations. In management accounting the issue is identified with the decision-making process, for which relevant information is used. The study is the first complex publication which discusses the importance of relevance in accounting information system, and its subsystems – financial and management accounting.

**Keywords** – Accounting Information System, Audit, Financial Accounting, Management Accounting, Materiality, Relevance.

## I. INTRODUCTION

The concept of relevance is studied in many fields, but it is among others rooted in the information science. It is integral to information system design, development, and evaluation. Recently, there has been an upsurge of interest in the concept of relevance, particularly in relation to information retrieval systems. The article presents the definitions of relevance in accounting information system and its subsystems. In case of financial accounting and audit it focuses on materiality, which is the entity-specific aspect of relevance.

The objective of the article is to present how the concept of relevance is defined in accounting information system and analyse those definitions in comparison to the definition of relevance in information science. First selected definitions of relevance in information science were presented. Next they were used to analyse definitions of relevance (and materiality as an interrelated concept) in financial accounting and audit, as well as in management accounting. This is preceded by the description of used method, which is a systematic literature review related to the issue.

## II. METHOD

The available research about the concept of relevance in information science was sought in six databases containing publications in the area of information science and management: ProQuest, Wiley Online Library, Springer Link, Science Direct, JSTOR, and Emerald. The articles were identified by first searching the database for articles containing topic-related keywords in the title and/or abstract. The keywords included “relevance”, “information

systems”, and “definition” or “criteria”. Definition of relevance formulated in the publications from the area of information science has been used as a reference point for literature studies of the concept of relevance in accounting.

The same databases have been searched for articles from the area of accounting. The search has been limited to scholarly journals. The keywords included:

- “relevance” or “materiality”, and “financial accounting” or “financial statements” or “audit” – in case of financial accounting and audit,
- “relevance” or “materiality”, and “management accounting” or “managerial accounting” – in case of management accounting.

The primary verification of abstracts was aimed to choose only those publications that were related to the topic of the article. 16 publications were found in the area of financial accounting and none in the area of management accounting. The term “relevance” in the publications of management accounting was mainly related to the relevance of management accounting science, the discussion started with the Kaplan and Johnson publication “Relevance Lost: The Rise and Fall of Management Accounting”, which was beyond the scope of this article. Therefore in the area of management accounting the search has been repeated in Google Scholar database and included also 7 textbooks.

“Relevance” and related terms are also defined in numerous regulations and recommendations. Therefore the available research evidence was also sought from “grey” research literature sources. Grey literature was sought by reviewing the publications of American Institute of Certified Public Accountants, Chartered Institute of Management Accountants, Financial Accounting Standards Board, IFRS Foundation, Institute of Cost Accountants of India, International Auditing and Assurance Standards Board, and Public Company Accounting Oversight Board.

## III. RELEVANCE IN INFORMATION SCIENCE

The development of information science occurred in 40ies and 50ies, and relevance has been identified as its central concept. However, it has not been clearly defined, and – as many authors mention – designing a system that generates relevant information for users without understanding what relevance is to users is difficult [18], [42], [54].

Developing a definition of relevance is difficult due to the fact that there are many kinds of relevance, c.f. [42]. [25] after his literature study stated that there is no clear and precise definition of relevance and even claimed that such a definition cannot be created. However, other authors formulated several definitions, simultaneously noticing many components, variables, criteria, and factors

that should be included in the definition as well as play an important role in measuring relevance (see Table 1).

Table 1. Definitions of relevance in information science

| Authors | Definition  |
|---------|---|
| [7]     | Relevance should be divided into topicality (gathering all information related to the query) and informativeness (information that give information to the user)  |
| [26]    | A measure of the effectiveness of the contact; an equivalence relation because there are many possible answers to a request   |
| [30]    | Relationship (R) between an Information Object (I) and an Information Need (N) (which consists of Topic, User, Problem/Task, and Situation/Context) with focus on R) such that the information object has the potential of providing assistance in solving a problem, performing a task, producing a new document, learning about a given topic, satisfying curiosity, providing entertainment, and so on |
| [38]    | Utility value of a document dependent on the user and a request. The limitation is not taking into consideration the situation affecting the preferences of the user  |
| [42]    | A relation between two entities of two groups. In the first group there are the following: Document, Surrogate, Information. In the second group there are: Problem, Information need, Request, Query. These entities can be decomposed in the following components: Topic, Task, Context   |

Source Own preparation.

Individual authors identify relevance with satisfaction with the information seeking results [61], or utility [48],[51]. [15] states that an item of information is relevant to a question if it can be used in a deductive reasoning argument that results in an answer to the question. Also [66] investigates relevance in the context of a query noticing that relevant items of information are those that answer, or logically help to answer, questions of concern. Gathering information related to the query is also defined as topicality. [8] equate relevance with topicality and mentions that next to relevance there is also a complementary concept of utility, which takes into consideration user’s needs. Such an approach is rare as most authors indicate that topicality is one of the elements of relevance. Relevance includes also informativeness, which is the relation between the item retrieved and the user’s needs [7],[57],[58].

Reference [25] underlines that topical relevance is insufficient for describing relevance, although it should be viewed as a prototype for relevance, and a feature that most information systems have been constructed around. [46] points out that topical relevance is context-free and ignores judge’s context and state of needs, and that focus should be placed on users rather than on systems. Other authors also highlight two components of relevance – one related with topicality and the other related with user’s context, c.f. [24],[29]. [56] speaks about topical relevance (answering user’s question), pertinence (appropriate to the user), and utility (providing information that is not only appropriate but also new). Despite many

publications that treat topicality as a most basic concept, [30] claim that it lies at the heart of relevance. They view it as user-oriented as topicality is often the most important relevance criterion considered and determined by end users.

According to [42], relevance is a relation between any two entities of two groups. The first one includes: document, surrogate – being some representation of a document, such as abstract or keywords, and information – being the content of the document. The second group consists of: a problem – for which information is needed, information need – user’s perception of what is needed to solve the problem, request – formulation of the information need, and query – a formal presentation of the information need understandable for the information system. These types of relevance can be further decomposed according to the topic in which used is interested, task which the problem is related to, and the context, such as user’s knowledge, or time for the search. The last dimension of the space in which relevance should be analysed is time, as all of these variables change in time.

Reference [50] built a definitional framework of relevance that is still considered one of the most comprehensive definitions of that concept (see Table 2).

Reference [30] improves[50]’s definition and notice that objective relevance (defined by them as relevance-as-is) can only be estimated by determining an agent (a person or system) operating on a representation of the information object and a representation of the information need, resulting in an operational approximation of relevance. They underline that with different types of agents their perception of relevance differs. Differentiation between objective relevance and its measurable reflection has also been mentioned by other authors, c.f. [19],[27].

In the end of 20th century the research on relevance has concentrated on relevance criteria, shifting the research from conceptual to empirical and from topical to nontopical [29]. Relevance judgement is a measurable assessment of the degree to which a relationship can be considered relevant. [17] indicate that relevance is a continuous variable, and not a dichotomous one. There are many criteria that affect relevance judgement, many of which are nontopical and user-centred (see Table 3).

Table 2. Framework of relevance

| Relevance is the A of a B existing between a C and a D as determined by an E |   |   |
|--|---|---|
| A  | measure<br>degree<br>dimension          | estimate<br>appraisal<br>relation                     |
| B  | correspondence<br>utility<br>connection | satisfaction<br>fit<br>bearing                        |
| C  | document<br>article<br>textual form     | reference<br>information provided<br>fact             |
| D  | query<br>request<br>point of view       | information used<br>information requirement statement |

|   |        |                        |
|---|--------|------------------------|
| E | person | requestor              |
|   | judge  | information specialist |
|   | user   |                        |

Source [50, pp. 321–343].

**Table 3. Criteria of relevance judgement**

| Authors | Criteria  |
|---------|---|
| [60]    | ease of use, noise reduction, quality, ability to respond to user’s problem, time saving and cost saving  |
| [48]    | accuracy, completeness, subject, suggestiveness, timeliness, and treatment  |
| [53]    | factors related to information – accuracy, currency, specificity, geographic proximity – source – reliability, accessibility, verifiability through other sources – and presentation – dynamism, presentation quality, clarity  |
| [6]     | Information content, user’s experience, user’s preferences, other information accessible, sources of the documents, document as a physical entity, user’s situation, effectiveness of a techniques presented in the document, consensus within the field, user’s relationship with the author |
| [14]    | Topic, content, format, presentation, values, personal need of use of the document  |
| [63]    | Information and knowledge sources, feelings of uncertainty, establishing professional relationships   |

Source Own preparation.

Relevance has been defined as any relation of the presented variables. In order to assess any entity (document, or information) as relevant, it is necessary to assign some value of a relevance by a judge. There are also many kinds of relevance judgement, which can be classified according to [42]: the kind of relevance, the kind of judge, entities from the above presented two groups that the judge uses to assess relevance, the time when the judgement is expressed.

Reference [20] considers relevance judgement depends on two features: judge’s expertise and knowledge, as well as judge’s openness to information. [48] has proven whether the difference of relevance judgement is explained with the characteristics of judges, checking the differences between researchers and students from different specialties and at different levels, but [9] has come to opposite conclusions proving high consistency of how different judges assessed full-text documents.

#### **IV. RELEVANCE AND MATERIALITY IN FINANCIAL ACCOUNTING AND AUDIT**

Relevance in financial accounting means capability of making a difference in the decisions made by users. It occurs when information has predictive and confirmatory value, or both [35], [34, §QC6-7]. According to [55] relevant information must be logically related to a given decision and be able to reduce the uncertainty about the variables in the decision process, c.f. [43]. It means that relevance can be identified with “topicality” defined in literature as “having a relation to a query”.

Materiality is the entity-specific aspect of relevance,

and it is based on the nature or magnitude, or both of these characteristics of information [35], [34, §QC11]. In addition to financial accounting the concept of materiality is used in the audit, which purpose is to enhance the degree of confidence of intended users in the financial statements [36, §3].

**Table 4. Dictionary definitions of relevance and materiality**

| Definition of relevance  | Definition of materiality  |
|--|--|
| <b>Oxford Dictionaries</b>   |  |
| The quality or state of being closely connected or appropriate <sup>1</sup> .  | The quality of being composed of matter <sup>2</sup> .                                     |
| <b>Merriam-Webster Dictionaries</b>  |  |
| The ability (as of an information retrieval system) to retrieve material that satisfies the needs of the user <sup>3</sup> . | 1. The quality or state of being material.<br>2. Something that is material <sup>4</sup> . |
| applicability, bearing, connection, materiality, pertinence, relevancy <sup>5</sup>  | applicability, bearing, connection, pertinence, relevance, relevancy <sup>6</sup>          |
| <b>Cambridge Business English Dictionary</b>   |  |
| The degree to which something is related or useful to what is happening or being talked about <sup>7</sup> .                 | Measure of how important a piece of information is when making a decision <sup>8</sup> .   |

Source Own preparation.

According to [67] materiality is a relevance of any item included or omitted. Based on the analysis of English dictionaries, which is shown in Table 4, relevance and materiality can be considered as synonyms.

However, [13, §QC126] drew attention to the nuances that exist between these terms, presenting an example of an applicant for employment who is negotiating with an employment agency. The agency has full information about a certain job for which the applicant is suited and will furnish any item of information about it. The applicant will certainly want information about the nature of the duties, the location of the job, the pay, the hours of work, and the fringe benefits. Information about vacations and job security may or may not be important enough to affect a decision concerning accepting the job. Further, the applicant may not be concerned at all with whether the office floor is carpeted or about the quality of the food in

<sup>1</sup><http://www.oxforddictionaries.com/definition/english/relevance> (accessed 27 May 2016).

<sup>2</sup><http://www.oxforddictionaries.com/definition/english/materiality> (accessed 27 May 2016).

<sup>3</sup> <http://www.merriam-webster.com/dictionary/relevance> (accessed 27 May 2016).

<sup>4</sup> <http://www.merriam-webster.com/dictionary/materiality> (accessed 27 May 2016).

<sup>5</sup> <http://www.merriam-webster.com/thesaurus/relevance> (accessed 27 May 2016).

<sup>6</sup> <http://www.merriam-webster.com/thesaurus/materiality> (accessed 27 May 2016).

<sup>7</sup> <http://dictionary.cambridge.org/dictionary/english/relevance> (accessed 27 May 2016).

<sup>8</sup> <http://dictionary.cambridge.org/dictionary/english/materiality> (accessed 27 May 2016).

the cafeteria. All of those items are, in the broadest sense, relevant to an evaluation of the job. But some of them make no difference in a decision to accept it or not. The values placed on them by the applicant are too small for them to be material. They are not important enough to matter.

In the next part of chapter 4 the concept of materiality is considered, due to the fact that this term dominates significantly in scientific publications. Table 5 shows the definitions of materiality in international and American standards of financial reporting and auditing.

**Table 5. Definitions of materiality in financial accounting and auditing standards**

| <b>Standards</b> | <b>Definition</b>   |
|------------------|---|
| [35], [34]       | Information is material if omitting it or misstating it could influence decisions that users make on the basis of financial information about a specific reporting entity <sup>9</sup> [35, § QC11],[34, §QC11].  |
| [31], [32], [33] | Omissions or misstatements of items are material if they could, individually or collectively, influence the economic decisions that users make on the basis of the financial statements. Materiality depends on the size and nature of the omission or misstatement judged in the surrounding circumstances [31, §7],[32, §5],[33, §7].   |
| [37]             | Although financial reporting frameworks may discuss materiality in different terms, they generally explain that [37, §2]:<br><ul style="list-style-type: none"> <li>– misstatements, including omissions, are considered to be material if they, individually or in the aggregate, could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements</li> <li>– judgments about materiality are made in light of surrounding circumstances, and are affected by the size or nature of a misstatement, or a combination of both.</li> </ul> |
| [52]             | The magnitude of an omission or misstatement of accounting information that, in the light of surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would have been changed or influenced by the omission or misstatement [52, § 6].  |
| [3]              | In interpreting the federal securities laws, the Supreme Court of the United States has held that a fact is material if there is “a substantial likelihood that the ...fact would have been viewed by the reasonable investor as having significantly altered the “total mix” of information made available.” As the Supreme Court has noted, determinations of materiality require “delicate assessments of the inferences a “reasonable shareholder” would draw from a given set of facts and the significance of those inferences to him ...” [3, §2].   |

Source Own preparation.

<sup>9</sup>However § 2.11 of the Exposure Draft ED/2015/3 Conceptual Framework for Financial Reporting, proposes to modify this definition by including the word “primary” before the word “user”.

Table 5 shows that the definitions of materiality in international and American standards of financial reporting and auditing are consistent with each other. They refer to the “omission” or “misstatement” that could influence the decisions of users made based on financial information concerning the specific reporting entity. In the definitions mentioned above, often also the terms “information”, “user (reasonable person)”, “judgments” and “circumstances” are used. Users of financial statements and their information needs are specified in particular standards, used by financial statements’ preparers and auditors. The main difficulty in determining whether information is material or not is the necessity of judgment, which vary depending on particular circumstances.

Numerous articles published in scientific journals, regarding materiality in financial accounting and auditing, take as a starting point the definitions in standards applicable to the topic [12] , [39], [44], [62], [65]. However as [21] noticed materiality is not a term with a core meaning.

**Table 6. Definitions of materiality in financial accounting and auditing**

| <b>Authors</b> | <b>Definition</b>  |
|----------------|--|
| [5]            | A matter of relative significance.   |
| [49]           | An item of accounting information is material only if it has information value to a financial statement user.  |
| [45]           | Rules of thumb suggested as ways of arriving at a preliminary judgment about materiality, e.g. percentage of pre-tax income or net income.   |
| [11]           | The general level of the maximum amount of error which could occur without rendering a financial statement as misleading. The interpretation of the extent to which information would affect a user’s decision is a matter of professional judgement based on past experience. |
| [40]           | As applied by preparers and auditors, the concept of materiality is generally understood ultimately to involve determination of the importance of a matter for financial reporting purposes.   |

Source Own preparation.

On the other hand, [64] concluded that investors’ views of materiality are varied. Table 6 shows the definitions of the authors, who proposed their own suggestions of the term.

It can be concluded, taking to consideration above definitions, that materiality is the importance or the value of information for financial reporting purposes. In these definitions the terms of “omission” or “misstatement” are used in lesser extent, bringing them closer to the concept of relevance. From the point of view of definitional framework of [50], there is a convergence with the terms presented in Table 7.

Table 7 shows that materiality should be identified as a measure (degree) of utility existing between information provided and query (request) of users. As [1] noted the definition of materiality also concerns the work of judges. Such a meaning of materiality is consistent with the point of view of [42]. According to him materiality is a relation

between two entities: document (financial statements) and information need. Continuing the definitional framework of [50], materiality in financial accounting and audit may be determined as a measure (degree) of usefulness of information for the user of financial statements or the degree, in which the relation may be considered as relevant. This measure may be expressed quantitatively (by size), but also qualitatively (by nature). In case of the size it should be known that materiality is a continuous variable. There is always an area for judgments when considering existing circumstances of specific reporting entity. IFRS Practice Statement concerning materiality draws attention to the above issues. It stresses the importance of judgments and entity-specific factors that change over time [33, p. 12].

Table 7. [50]'s definitional framework of relevance and definitions in financial accounting and auditing standards

| A              | B       | C                    | D             | E          |
|----------------|---------|----------------------|---------------|------------|
| measure degree | utility | information provided | query request | judge user |

Source Own preparation.

As [22] noted, traditionally materiality focuses on ensuring that entities do not omit material information. However, the same attention should also be given to

guaranteeing that immaterial information is excluded. Providing immaterial information may obscure material information and consequently hinder understandability. Users have to filter out information from the mass available in financial statements and if preparers add immaterial information, users have to spend more resources on searching for material information. Disclosing immaterial information increases the length of financial statements and makes them less understandable, c.f. [1], [33]. The above issue was stressed by [23]. Based on a survey of 6,500 members of the Financial Executives International (FEI) it was concluded that:

- complexity in financial reporting confuses investors and prevents them from making optimal decisions,
- the proliferation of required disclosures makes it difficult for investors to interpret a company's performance and factors that drive performance,
- footnotes are the most significant source or cause of disclosure complexity.

In terms of the criteria used to determine the materiality, [11] developed them most extensively. He presented the factors listed in Table 8, in accordance with Discussion Memorandum of FASB of 1975.

Table 8. Criteria for determining materiality

| Determinant factors  | Modifying factors  |   |   |  |
|--|--|---|---|--|
|  | Characteristics of the environment   | Characteristics of the firm   | Characteristics of the event or judgement item  | Characteristics of the accounting system or policies in use  |
| (1) Amount of the judgement item.<br>(2) Judgement item as a percentage of sales.<br>(3) Judgement item as a percentage of gross margin.<br>(4) Judgement item as a percentage of net income.<br>(5) Judgement item as a percentage of assets.<br>(6) Judgement item as a percentage of liabilities.<br>(7) Judgement item as a percentage of stockholder equity.<br>(8) Judgement item as a percentage of its account total (e.g. machinery).<br>(9) Judgement item as a percentage of its category total (e.g. plant).<br>(10) Judgement item as a percentage of its classification total (e.g. fixed assets). | (1) Political -national and world.<br>(2) Economic - national and world.<br>(3) Industry - national and world.<br>(4) Firm's position in its industry.<br>(5) Business practices and customs.<br>(6) Regulatory requirements.<br>(7) Income tax considerations.<br>(8) Needs and expectations of users of financial statements, etc. | (1) Age and maturity of the firm.<br>(2) Capitalization structure.<br>(3) Seasonal nature of its operations.<br>(4) Competitive situation.<br>(5) Geographical dispersion of operations.<br>(6) Integrated nature of the operations.<br>(7) Diversity of suppliers and customers.<br>(8) Ownership interests and diversity.<br>(9) Costs of gathering and presenting data against relative benefits.<br>(10) Public image of the firm.<br>(11) Management's capabilities and public credibility.<br>(12) Liquidity - short-and long-run.<br>(13) Solvency - short-and long-run. | (1) Timing - current effect or future effect.<br>(2) Timing - one-time effect or continual effect.<br>(3) Result of discretionary or non-discretionary action of management.<br>(4) Result of temporary or permanent condition.<br>(5) Related party or arm's length transaction.<br>(6) Potential for violation of certain agreements.<br>(7) Potential for violation of certain laws.<br>(8) Result of mathematical error or actual event.<br>(9) Nature of the event or judgement item.<br>(10) Potential for management of earnings.<br>(11) Relationship to normal operations.<br>(12) Certainty with respect to ultimate realization of assets or liquidation of liabilities.<br>(13) Effect of the existence of other similar judgement items.<br>(14) Effect of the existence | (1) Selection of "liberal" or "conservative" accounting policies.<br>(2) Extent of variation from generally accepted accounting principles.<br>(3) Extent of variation from accepted industry practice.<br>(4) Consistency of application of policies.<br>(5) Comparability of resulting information.<br>(6) Effects of subsequent events.<br>(7) Extent and specificity of disclosure of accounting policies in use, etc. |

|  |  |  |   |
|--|--|--|---|
|  |  | (14) Profitability - trend of earnings.<br>(15) Profitability - prospects for the future.<br>(16) Organizational structure, etc. | of other dissimilar judgement items, etc. |
|--|--|--|---|

Source [11].

These factors relate to materiality much wider than the criteria set out in Chapter 3. Materiality judgments as determinant factors are presented in detail. Criteria that affect materiality judgement constitute the modifying factors, i.e. determinant factors can be modified by environment, firm, event or judgement item and accounting system or policies in use.

### V. RELEVANCE IN MANAGEMENT ACCOUNTING

Relevance is defined as one of the four key management accounting principles by [10] and American Institute of Certified Public Accountants in their document *Global Management Accounting Principles* (2014). Information generated by management accounting must be relevant to support decision-makers. Relevant information is therefore determined with the decision at hand and needs of the decision-maker. Information is drawn from past and present as well as from predictive insights about the future. It is not constrained by traditional organisational boundaries and might be drawn from inside and outside the organisation, including from financial and operational systems, from customers, business partnerships, suppliers, markets and the macro-economy. Relevant information can be both quantitative (both financial and non-financial – including environmental and social issues) and qualitative. According to the *Principles* (2014), information is relevant if it is:

- best available,
- reliable and accessible,
- contextual.

To be relevant to a decision information usually includes an element of prediction and considers issues that have a significant effect on outcomes. Irrelevant information often includes sunk or committed costs. Historical information is relevant for example for drawing conclusions about reasons why good or bad decisions has been taken. Relevance of information is based on its quality, accuracy, consistency and timeliness.

Definition of relevance presented in the *Principles* (2014) takes into consideration basic assumptions about the relationship between information and problem or query, which have been underlined by some authors, including [42] or [66]. An important role in the definition of relevance is played by the recipient of information – a decision-maker, which indicates that to be relevant information in management accounting must not only be topical but fore mostly useful for user. The emphasis is also placed on the availability of information and its timeliness, which have been mentioned by [42], and omitted for example in [50] framework.

Reference [4] defines relevance in a similar way. They claim relevance of information means usefulness of information for an organization’s decision and control processes. They mention four characteristics of relevant information: accuracy, timeliness, consistency and flexibility. Inaccurate information cannot be relevant as it is misleading. Information that is late is also not useful for decision making. Consistency means that methods and ways to report information do not conflict within different parts of the organization. Flexibility applies to using available information differently, according to users’ needs.

Other authors define the concept of relevance and relevant information in the context of a specific problem, c.f. [2], and the information needs of the user, c.f. [28]. In several publications in the field of management accounting the emphasis is placed on the indication which information about costs and benefits are relevant in the context of a decision-making process. This is often compiled with the concept of opportunity costs, avoidable costs or incremental costs and benefits, c.f. [16],[47],[59]. As [47] noted, Institute of Cost Accountants of India underlines that relevant information should be identified in relation to decision-making, but it is also a valuable concept in relations to planning and control. [41] generalizes that information is relevant if it helps achieving organization’s goals – both strategic and operating.

In the light of [42] definition, relevance in management accounting can be defined as a relation between information and a problem. The problem can be identified with the decision for which information is to be used. An important factors are also: the user searching for information, the context determining the available sources that information can be generated from, and time available for the search.

Using [50] framework, relevance is the degree or measure of utility between the information provided and query or request as determined by user. The terms “query” and “request” from column D of the framework (see Table 2) do not reflect well the fact that relevance of information should rather be analyzed in the context of the decision to be made. The concept of relevance in management accounting is strongly associated with the representation of the information need of the used, which has been highlighted by [30]. It is also tightly linked to the availability of information in the time given for search. In the definition of relevance *Principles* (2014) mention „best available” information, as well as „accessible” information allowing the fact that due to time- or system-related constraints information might not fully answer the question set but be the best available for user at the moment of the decision and therefore be viewed as relevant.

Relevance criteria indicated by [4] are consistent with the ones included by [48] or [53]. In the literature, however, there is no research on relevance judgment and the significance of relevance criteria in the area of management accounting. The only criterion mentioned by [28] is the scope of responsibility of the manager – operational, tactical or strategic.

## VI. CONCLUSION

Conducted systematic literature review showed that definitions of relevance in financial and management accounting have common elements, but each of the subsystems determined the inclusion of unique elements to the definition of relevance. This concept is also defined differently by various authors, especially with regard to concepts related such as topicality or “user-centeredness” (also referred to as informativeness, utility, inclusion of user’s context, or pertinence).

Relevance in accounting information system refers primarily to information generated in this system. It is relevant if it plays an important role in decision-making process conducted by recipients of that information – both external users of financial statements and internal used of managerial reports. The assessment of relevance depends foremostly on type of decisions taken and users’ needs.

In financial accounting the concepts of “relevance” and “materiality” are distinguished. The first one can be identified with “topicality” defined in literature as “having a relation to a query”. Substantially more space in the literature and in the regulations is devoted to the concept of materiality. Information is material if its lack could lead to making different decision by users. Regulations define this concept through the prism of exclusions indicating that a piece of information is material if its lack would change the decision of the user of financial statements. However, the same attention should also be given to guarantee that immaterial information is excluded.

In management accounting emphasis is placed primarily on the aspect of utility. Relevant information should have a significant impact on decisions taken by users. Relevance is assessed in relation to the specific problem as well as information system in which it is generated. Relevance judgment is subjective and covers the best out of accessible information, whereas accessibility depends on time available for taking decision and scope of information collected. An area, which in the opinion of the authors requires further research, are the factors that affect the relevance judgment in management accounting.

## REFERENCES

[1] Afterman, A. (2016). FASB’s Proposal to Change the Definition of Materiality. The Unexpected Uproar. The CPA Journal. March, 54–55.

[2] Anthony R.N., Govindarajan V. (2007). Management Control Systems, 12th Edition, McGraw-Hill/Irwin.

[3] AS 11 (2010). Auditing Standard No. 11, Consideration of Materiality in Planning and Performing an Audit. Public Company Accounting Oversight Board.

[4] Atkinson, A.A., Kaplan, R.S., Young, M.S. (2004). Management Accounting, 4th Edition, Upper Saddle River, NJ : Prentice Hall.

[5] Barnes, J. (1973). More efficient auditing through an understanding of the materiality concept. The Journal of Accountancy, May, 78–80.

[6] Barry, C.L. (1994). User-defined relevance criteria: an exploratory study. Journal of the American Society for Information Science, 45(3), 149–159.

[7] Boyce, B. (1982). Beyond topicality: A two stage view of relevance and the retrieval process. Information Processing and Management, 18, 105–109.

[8] Brajnik, G., Mizzaro, S., Tasso, C. (1966). Evaluating user interfaces to information retrieval systems: A case study on user support. In 19th International Conference on Research and Developments in Information Retrieval (SIGIR-96), 128-136, <https://users.dimi.uniud.it/~giorgio.brajnik/papers/sigir96.ps.gz>.

[9] Burgin, R. (1992). Variations in relevance judgments and the evaluation of retrieval performance. Information Processing & Management, 28(5), 619–627.

[10] Chartered Institute of Management Accountants, American Institute of Certified Public Accountants (2014). Global Management Accounting Principles, <http://www.cgma.org/>

[11] Chong, H.G. (1992). Auditors and materiality. Managerial Auditing Journal Vol. 7 Iss 5, 8–17, doi: 10.1108/02686909210017865.

[12] Colbert J.L. (1996). International and US standards - audit risk and materiality. Managerial Auditing Journal, Vol. 11 Iss 8, 31–35.

[13] CON 2 (2008). Statement of Financial Accounting Concept No. 2. Financial Accounting Standards Board.

[14] Cool, C., Belkin, N.J., & Kantor, P.B. (1993). Characteristics of texts affecting relevance judgments. Proceedings of the 14th National Online Meeting, 77–84.

[15] Coombs, H., Hobbs, D., Jenkins, E. (2005). Management Accounting: Principles and Applications, SAGE Publications Ltd.

[16] Cooper, W.S. (1971). A definition of relevance for information retrieval. Information Storage and Retrieval, 7(1), 19–37.

[17] Cooper, W.S., Maron, M.E. (1978). Foundation of probabilistic and utility-theoretic indexing. Journal of the Association for Computing Machinery, 25(1), 67–80.

[18] Cosijn, E., Ingwersen, P. (2000). Dimensions of relevance. Information Processing and Management, 36(4), 533–550.

[19] Cuadra, C.A., Katter, R.V. (1967b). Opening the black box of “relevance”. Journal of Documentation, 23(4), 291–303.

[20] Davidson, D. (1977). The effect of individual differences of cognitive styles on judgments of document relevance. Journal of the American Society for Information Science, 28, 273–284.

[21] Edgley, C. (2014). A genealogy of accounting materiality. Critical Perspectives on Accounting 25, 255–271.

[22] EFRAG (2012). Towards a Disclosure Framework for the Notes. Discussion paper. the European Financial Reporting Advisory Group, Autorité des Normes Comptables, the UK Financial Reporting Council Accounting Committee.

[23] FERF (2011). Disclosure overload and complexity: hidden in plain sight. Financial Executives Research Foundation, KPMG.

[24] Froehlich, T.J. (1991). Towards a Better Conceptual Framework for Understanding Relevance for Information Science Research. Proceedings of the ASIS Annual Meeting, 118–125

[25] Froehlich, T.J. (1994). Relevance reconsidered—Towards an agenda for the 21st century: Introduction to special topic issue on relevance research. Journal of the American Society for Information Science, 45(3), 124–134.

[26] Goffman, W., Newill, V.A. (1966). Methodology for test and evaluation of information retrieval systems. Information Storage and Retrieval, 3(1), 19–25.

[27] Green, R. (1995). Topical relevance relationships. I. Why topic matching fails. Journal of the American Society for Information Science, 46(9), 646–653.

[28] Hirsch, M.L. (2006). Advanced Management Accounting, 2nd Edition, Thomson Learning.

[29] Hjørland, B. (2010). The foundation of the concept of relevance. Journal of the American Society for Information Science and Technology, 61(2), 217–317.

[30] Huang, X., Soergel, D. (2013). Relevance: An Improved Framework for Explicating the Notion. Journal of the American Society for Information Science and Technology, 64(1), 18–35.

- [31] IAS 1 (2007). International Accounting Standard 1 – Presentation of Financial Statements”. IFRS Foundation.
- [32] IAS 8 (2003). International Accounting Standard 8 – Accounting Policies, Changes in Accounting Estimates and Errors. IFRS Foundation.
- [33] IASB (2015). IFRS Practice Statement: Application of Materiality to Financial Statements. Exposure Draft ED/2015/8. IFRS Foundation.
- [34] IFAC 8 (2010). Statement of Financial Accounting Concepts 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. Financial Accounting Standards Board.
- [35] IFRS CF (2010). The Conceptual Framework for Financial Reporting. IFRS Foundation.
- [36] ISA 200 (2009). International Standard on Auditing 200 Overall objectives of the independent auditor and the conduct of an audit in accordance with international standards on auditing. International Auditing and Assurance Standards Board.
- [37] ISA 320 (2009). International Standard on Auditing 320 Materiality in Planning and Performing an Audit. International Auditing and Assurance Standards Board.
- [38] Kochen, M. (1974). Principles of information retrieval. Los Angeles: Melville.
- [39] McKee, T., Elifsen, A. (2000). Current materiality guidance for auditors. The CPA Journal; Jul, 70, 7, 54–57.
- [40] Messier, W.F., Jr, Martinov-Bennie, N., Eilifsen, A. (2005). A Review and Integration of Empirical Research on Materiality: Two Decades Later. Auditing, 153–187.
- [41] Mitra J.K. (2009). Advanced Cost Accounting, New Age International Publishers.
- [42] Mizzaro, S. (1997). Relevance: The Whole History. Journal of the American Society for Information Science, 48(9), 810–832.
- [43] Morton J.R. (1974), Qualitative objectives of financial accounting: A comment on relevance and understandability. Journal of Accounting Research, Vol. 12, No. 2, 288–298.
- [44] Newton, L.K. (1977). A process for assessing materiality. The CPA Journal, May, 11–15.
- [45] Pany, K., Wheeler, S. (1989). A comparison of various materiality rules of thumb. The CPA Journal, Jun, 59, 6, 62–63.
- [46] Park, T.K. (1994). Toward a theory of user-based relevance: A call for a new paradigm of inquiry. Journal of the American Society for Information Science, 45(3), 135–141.
- [47] Reddy, R.J. (2004). Management Accounting, A.P.H. Publishing Corporation, New Delhi.
- [48] Regazzi, J.J. (1988). Performance measures for information retrieval systems – An experimental approach. Journal of the American Society for Information Science, 39, 235–251.
- [49] Ro, B.T. (1982). An analytical approach to accounting materiality. Journal of Business Finance & Accounting 9,3, 397–412.
- [50] Saracevic, T. (1975). Relevance: A review of and a framework for the thinking on the notion in information science. Journal of the American Society for Information Science, 26(6), 321–343.
- [51] Saracevic, T., Kantor, P., Chamis, A., Trivison, D. (1988). A study of information seeking and retrieving. I. Background and methodology. Journal of the American Society for Information Science, 39, 161–176.
- [52] SAS 47 (1983). Audit risk and materiality in conducting an audit. American Institute of Certified Public Accountants.
- [53] Schamber, L. (1991). Users’ criteria for evaluation in multimedia information seeking and use situations. The School of Information Studies Dissertations. Paper 43. [http://surface.syr.edu/it\\_etd/43](http://surface.syr.edu/it_etd/43)
- [54] Schamber, L., Eisenberg, M.B., Nilan, M.S. (1990). A re-examination of relevance: Toward a dynamic, situational definition. Information Processing & Management, 26(6), 755–776.
- [55] Shahwan Y. (2008). Qualitative characteristics of financial reporting: a historical perspective. Journal of Applied Accounting Research, Vol. 9 Iss 3, 192–202.
- [56] Soergel, D. (1994). Indexing and retrieval performance: The logical evidence. Journal of the American Society for Information Science, 45, 589–599.
- [57] Swanson, D.R. (1977). Information retrieval as a trial-and-error process. Library Quarterly, 47, 128–148.
- [58] Swanson, D.R. (1986). Subjective versus objective relevance in bibliographic retrieval systems. Library Quarterly, 56, 389–398.
- [59] Świdarska, G.K. et al. (2010). Controlling kosztów i rachunkowość zarządcza. MAC Consulting/Difin, Warszawa
- [60] Taylor, R.S. (1986). Value-Added processes in information systems. Norwood, NJ: Ablex Publishing.
- [61] Tessier, J.A., Crouch, W.W., Atherton, P. (1977). New measures of user satisfaction with computer-based literature searches. Special Libraries, 68(11), 383–389.
- [62] Thomas, C.W. (1979). Materiality guidance for auditors. The Journal of Accountancy, February, 74–77.
- [63] Thomas, N.P. (1993). Information seeking and the nature of relevance: Ph.D student orientation as an exercise in information retrieval. Proceedings of the ASIS Annual Meeting, 126–130.
- [64] Van Arsdell, S.C. (1975). Criteria for determining materiality. Journal of Accountancy, 140, 72–78.
- [65] Van Pelt III, J.V (1975). Materiality. Management Accounting, 56, 13–15 and 24.
- [66] Wilson, P. (1973). Situational relevance. Information Storage and Retrieval, 9, 457–471.
- [67] Woolsey, S.M. (1973). Approach to solving the materiality problem. Journal of Accountancy, 135, 000003, 47–50.

## AUTHORS’ PROFILES



**Mariusz Karwowski**  
 Ph.D. in Management  
 Department of Management Accounting  
 Warsaw School of Economics  
 al. Niepodległości 162, 02-554 Warsaw, Poland  
 Email: mkarwo@sgh.waw.pl



**Monika Raulinajtys-Grzybek**  
 Ph.D. in Management  
 Department of Management Accounting  
 Warsaw School of Economics  
 al. Niepodległości 162, 02-554 Warsaw, Poland  
 Email: mrauli@sgh.waw.pl



**Gertruda Krystyna Świdarska**  
 Prof. in Economics  
 Department of Management Accounting Warsaw  
 School of Economics  
 al. Niepodległości 162, 02-554 Warsaw, Poland  
 Email: gswide@sgh.waw.pl