08. Leadership and Governance
Competitive Session

Understanding director financial literacy: A mixed method approach

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ABSTRACT:
Corporate governance scandals (e.g. Enron and HIH) have triggered much research and reform into preventing future scandals. In this context director financial literacy is recognised as a core capability for directors. Yet there is little guidance on what this capability involves other than being able to 'read and understand financial statements'. We seek to address this weakness by presenting the results of a Delphi study on the conceptualisation of director financial literacy. We found that financially literate directors must understand 24 basic accounting concepts and independently apply this knowledge to a strategic evaluation of the finances. From an agency perspective, the findings of this study raise questions about the influence of regulation on boards as mechanisms for reducing information asymmetry.

Keywords: Accountability; Agency; Board composition; Board effectiveness; Board of directors; Board roles.

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Boards of directors are critical mechanisms for reducing information asymmetry (Fama & Jensen, 1983) and assuring management acts in the best interests of the community they serve (Johnson, Daily, & Ellstrand, 1996; Zahra & Pearce, 1989). In the wake of corporate governance scandals such as Enron and HIH, the efficacy of boards as governance mechanisms has been questioned by scholars and practitioners (Finkelstein & Mooney, 2003; Johnson et al., 1996; Pugliese et al., 2009). At the heart of this concern is why the application of normative mechanisms (e.g. independent directors) grounded in the principles of agency theory and fiduciary duties have not prevented corporate collapse (Finkelstein & Mooney, 2003; Gendron, Bedard, & Gosselin, 2004; Roberts, McNulty, & Stiles, 2005).

The practitioner literature recognises the important contribution individual directors make in enabling board oversight of their organisation's finances (ASIC, 2014a; ASX Corporate Governance Council, 2010). Having the ability to read, interpret and apply financial information to decisions underpins director and board performance (Financial Reporting Council, 2013; and McRobert, 2009 and 2010). Yet the perceived passivity and inability of boards of directors to prevent economically significant corporate scandals has also raised questions about the extent to which individual directors fulfil their duties (Financial Reporting Council, 2013; McRobert, 2009; McRobert & Hoffman, 2010).

Both scholarly and practitioner literature, have divided financial capability into two broad levels – (1) 'financial experts' comprised of directors with qualifications and professional experience in finance or related areas; and, 'financial literates' comprised of directors who do not have qualifications or experience in finance or related areas but are expected to be able to 'read and understand financial statements' (McDaniel, Martin, & Maines, 2002; Vinnari & Näsi, 2013). While expertise may be measured using demographic and other data, it is not clear what specifically each director must be able to 'read and understand' to be financially literate in the context of board work (Rose & Rose, 2008; Vinnari & Näsi, 2013). The terms 'financial literacy' and 'financial expertise' have also been challenged as being concerned with accounting rather than broader forward looking financial capabilities such as those associated with financing and investment (Coates, Marais, & Weil, 2007; Giacomino, Wall, & Akers, 2009).

From a scholarly perspective, flaws in the conceptualisation and operationalisation of director financial literacy have been attributed to the use of contested and inferred measures of competence (Carcello, Hermanson, & Ye, 2011; Rose & Rose, 2008; Vinnari & Näsi, 2013) and hampered the comparability of studies (Carcello et al., 2011; DeFond, Francis, & Carcello, 2005). From a practical perspective, in the absence of clear definitions and guidance, individual directors and boards are left to determine what exactly they need to know to perform their roles and duties (Giacomino et al., 2009).

At a deeper level, however, this situation points to three key challenges – (1) a framing challenge requiring an agreed understanding of the purpose of director financial literacy; (2) a measurement challenge concerned with clearly and precisely differentiating financial literates from illiterates; and (3) a conceptual challenge concerned with the specific capability required of each individual director. Establishing a clear and shared understanding of director financial literacy is, therefore, critical to progressing the research agenda in this area and establishing a foundation from which direct, valid and reliable measures for verifying actual levels of director financial literacy can be developed. Our study seeks to address these challenges in the Australian context through the following three research questions:

- *How do experts frame director financial literacy (RQ1)*;
- *How do experts identify a financially literate director (RQ2)*; and
- *Which are the central financial concepts for directors to understand (RQ3)?*

Given the assumed relationship between director financial literacy and governance failures, the practical significance of our research is that it provides a conceptual framework for defining and measuring director financial literacy in Australia. Developing measures of director financial literacy could potentially help (i) regulators to codify and verify director financial literacy and (ii) support director financial education and development programs.

The theoretical significance of our research is that by exploring in-depth what it means for a director to be financially literate we hope to reduce the definitional ambiguity and establish a conceptual framework for a valid, reliable and direct measure of individual director financial literacy. As such, this study is an important and necessary step toward understanding the influence of director financial literacy on corporate governance and performance outcomes.

METHOD

Director financial literacy is a nascent area of research with progress being hampered by conceptual ambiguity and disagreement across expert domains (Carcello et al., 2011; Coates et al., 2007; Jeanjean & Stolowy, 2009; McDaniel et al., 2002; Vinnari & Näsi, 2013). To progress the research agenda this study needed to establish a consensus across expert domains on what it means for a director to be financially literate. To this end a Delphi study was selected as the most suitable means for achieving an agreed conceptual framework.

A Delphi study 'is a structured process for collecting and distilling knowledge from a group of experts by means of a series of questionnaires interspersed with controlled opinion feedback' (Streveler et al., 2011, p. 970). Delphi studies have been successfully used to develop several other conceptual frameworks and direct measures of domain specific knowledge and cognitive capabilities (Goldman et al., 2010; Osborne, Collins, Ratcliffe, Millar, & Duschl, 2003; Streveler et al., 2011). By definition participation in Delphi studies is limited to experts with a deep understanding of the issue under investigation (Okoli & Pawlowski, 2004). The method, therefore, does not depend on statistical methods for sampling.

Each candidate's eligibility to contribute to our Delphi study was assessed according to their availability over the course of the study and whether they met the criteria for expertise (Table 1) derived from previous studies (Carcello, Hermanson, & Ye, 2011; Financial Reporting Council, 2013; Jeanjean & Stolowy, 2009; McDaniel et al., 2002; Rose & Rose, 2008; Vinnari & Näsi, 2013).

Insert Table 1 about here

Thirty-nine participants were recruited to the study using purposeful and snowball sampling. Participants broadly represented three professions - accountants, board directors and educators (Figure 1); and three sectors - For profit, Nonprofit and Public (Figure 2).

Insert Figure 1 and Figure 2 about here

The Delphi study progressively moved toward a moderated consensus on how experts conceptualise director financial literacy (Figure 3). Over three successive rounds a series of online questionnaires were distributed to participants. At the completion of each round, the responses were de-identified, collated and distributed back to participants for review, reflection and feedback. The results of each round were used to develop the questionnaire for the next round. The rounds continued until an acceptable level of agreement had been reached. Questionnaires moved from open-ended questions requiring qualitative data analysis techniques, through to closed questions requiring quantitative data analysis to calculate the extent of agreement within the panel. As such, this Delphi study was mixed method research (Figure 4).

Insert Figure 3 and Figure 4 about here

A key advantage of Delphi studies is that they minimise group effects such as dominant individuals while encouraging each participant to contribute their views. Participants remained anonymous to each other until the closure of the Delphi study. Members, however, had anonymous access to the contributions made by other members of the panel (Pickard & Childs, 2007).

Delphi studies separate idea generation or exploration (round one) from evaluation and judgement (round two onwards). For this study the first questionnaire consisted of four open-ended questions designed to encourage individual participants to brainstorm their views on director financial literacy in narrative form. Responses were analysed using open, axial and thematic coding techniques

(Charmaz, 2006). Rounds two and three predominantly involved quantitative data collection and analysis. The codes developed from round one were applied to the qualitative data collected in rounds two and three. The quantitative data analysis included descriptive statistics and between groups analysis to gauge group effects such as expertise and experience on responses. Descriptive statistics were also used to determine the extent of data saturation and participant agreement on the issues considered by the panel.

At the conclusion of each round concept maps were prepared to document the iterative development of the conceptual framework. At the completion of round one experts indicated that director financial literacy potentially included an understanding of 97 transactional through to strategic level concepts (Figure 5). It was, however, limited to the sub-domain of accounting. By the end of round three experts agreed that as minimum each director must be able to comprehend and connect at least 24 accounting concepts to reveal the 'financial story' and make financial judgements (Figure 6). While these concepts are basic, the cognitive skills required to apply these concepts to board decisions are more advanced than what is implied by the phrase 'read and understand' currently dominating practitioner and scholarly literature.

Insert Figure 5 and Figure 6 about here

RESULTS

Framing director financial literacy

At an individual director level, director financial literacy was viewed by the Delphi panel as a necessary basis for fulfilling directors' duties and obligations relating to solvency. In making decisions boards perform multiple roles (Jeanjean & Stolowy, 2009). Nonetheless, experts predominantly framed director financial literacy from an agency perspective as a mechanism for discharging the board's control role.

From an agency perspective, director financial literacy supports the board's efforts in protecting the organisation from managerial self-interests manifested in incompetence or dishonest behaviours.

> A financially literate director then, is one who can analyse and interpret the figures, using previous year's comparatives as well, to identify trends and to ascertain the financial health of the entity - are there signs of financial distress emerging, for example, or has the CEO attempted to pull the wool over their eyes?
>
> (Director, Nonprofit sector).

Having at least a fundamental level of financial capability is essential to reducing information asymmetry between management and directors. Each director should, therefore, 'have sufficient financial skills to be able to "test" the information provided and be satisfied as to its relevance and appropriateness' (Accountant, For profit sector). Testing financial information helps a director with assessing whether 'the 'story' they hear from management matches the financials they review' (Accountant, For profit sector). Director financial capability, therefore, provides a means for minimising risks associated with material misstatement in the financial reports and other unlawful activities. 'To be satisfied that there are no material misstatements in the financial statements, directors must have a level of knowledge of accounting concepts and understand what the key misstatement risks are' (Accountant, Nonprofit sector), and not 'be put off by gobbly-gook from the CFO' (Accountant, Nonprofit sector).

In contrast to the scholarly literature, experts did not express views on the relationship between financial capability and the independence of directors from management. Instead, experts' views supported Roberts and colleagues' (2005) proposition that 'independence of mind' is an important governance mechanism and possibly a more effective mechanism than having an independent relationship from management.

Being financially literate also enables individual directors to fulfil their 'duty to be properly informed about the financial position of the company and to ensure that it does not trade when insolvent' (Director, For profit sector). One expert suggested that unless a director is at least financially literate then it is not possible to fulfil these legal obligations. 'You cannot discharge your duties as to solvency etc. without knowing what you are reading / analysing / interrogating' (Director, Public sector).

The Delphi panel's view on the purpose of director financial literacy was consistent with the view dominating scholarly and practitioner literature. This view is that director financial literacy primarily (and arguably exclusively) serves the purposes of monitoring management and solvency and fulfilling individual directors' duties (ASIC, 1992, 2014b; Coates et al., 2007; Giacomino et al., 2009; McRobert & Hoffman, 2010; Rose & Rose, 2008).

Drawing on the results of the Delphi study and the legal obligations imposed on charities and corporations in Australia it is concluded that at the most fundamental level each individual director must have sufficient financial capability to perform three tasks:

1. Monitor management;
2. Approve financial reports and associated statements; and
3. Monitor solvency.

Having established the perspective and purposes of director financial literacy it was then possible to consider the requisite technical financial knowledge to achieve these purposes.

Minimum conceptual understanding required

Given the agency-legal perspective adopted by experts and, therefore, the centrality of financial reporting, it is not surprising that in identifying the technical financial knowledge required for director financial literacy experts drew exclusively from the accounting domain. From the experts' perspective director financial literacy was exclusively drawn from the accounting domain for the purpose gaining a sense of the organisation's 'financial story'. This view is consistent with proposition posed by both Coates et al. (2007) and Giacomino, Wall, et al. (2009) that director financial literacy is more accurately described as 'director accounting literacy'.

The experts agreed that broader financial capabilities covering investment and financial strategy were not essential to the minimal level of financial capability required of directors. For example, one expert commented that there 'is no expectation that the reason for reviewing financial statements might be to identify areas of growth or over-expenditure' (Educator, Nonprofit sector). Where the future was considered it was very much embedded within the accounting domain. Central to director financial literacy is being able to understand how changes in the financial statements relate to the business they govern. This includes being 'able to identify any areas of major deviation from budget' (Director, For profit sector).

Overall, the capability required for each individual director without financial expertise is summarised in Table 2. This competence framework demonstrates that the financial knowledge and skills required for financially literate directors is both multi-dimensional and multi-level. It is multi-dimensional in that each of the 24 concepts are associated with one of five financial themes (dimensions). Drawing on the *Framework for the Preparation and Presentation of Financial Statements* (AASB, 2009), Table 2 also shows that director financial literacy is multi-level as 14 of the 24 concepts are nested within higher-level concepts. Finally, to be financially literate, a director needs to be able to apply their conceptual understanding of the 24 accounting concepts to board work. Based on the results from the Delphi study, this requires directors apply a broad range of cognitive capabilities. These capabilities move from simple (recall) to complex capabilities (judgement).

Insert Table 2 about here

Universality of director financial literacy

Agreement on the universality of director financial literacy developed iteratively over the course of the Delphi study. In round one, for example, it was suggested that each 'director's level of financial knowledge depends on the boards on which they sit' (Educator, For profit sector). This idea was developed further in round two when the same expert explained that 'items like assets will generally apply but things like tax, derivatives will depend on the nature of the organisation and the way it arranges things' (Educator, For profit sector). And finally, in round three experts agreed it is necessary that each individual director understand the 24 basic accounting concepts related to legal financial reporting requirements and three financial statements – the balance sheet, income statement and cash flow statement. Some experts, however, noted that additional concepts such as those relating to specific tax accounting requirements (e.g. fringe benefits tax) may also be critical to understand in certain contexts. By the end of round three it was concluded that director financial literacy is an essential foundation from which more context-specific or advanced capabilities can be developed.

It was also acknowledged that the specific terminology or labels used for financial information may be influenced by the context in which information is presented. One expert from Canada commented that although he 'was familiar with every concept identified' on occasions he 'found the Australian terminology unfamiliar and had to consult the glossary' (Director, Nonprofit sector). This view suggests that despite differences in labelling, the underlying concepts remain relevant and applicable across jurisdictions.

Levels of director financial capability

Consistent with the regulatory guidance and scholarly literature on director financial literacy, experts noted that for directors 'with less experience' the notion of 'read and understand financial statements' has 'a much lower threshold and to the extent that they want to ensure that they can satisfy their directors duties' (Educator, Nonprofit sector). Financially literate directors, for example 'need to be comfortable with accounting concepts. Not necessarily the level of knowledge of a CA/CPA etc., but enough to understand whether there is a risk of material misstatement' (Accountant, Nonprofit sector). Experts suggested that it is 'reasonable that a director relies on assurance from a CFO, CEO and external audit notwithstanding the board's responsibility in signing off financial statements' (Accountant, Nonprofit sector). The extent of capability expected of 'financial literates', includes being able to 'gain a sense of where the key drivers for performance are coming from - look at the big movements year on year' (Accountant, Nonprofit sector).

In contrast, the capability expected of a financial expert is 'to understand the detail and ask pertinent questions at the board table' (Educator, Nonprofit sector). Where a director also serves on the Audit Committee, however, that director 'must be able to delve deeper into the financial statements and operations / risk treatments of the entity' (Director, Public sector).

Summary

This study set out to explore and address challenges arising from the weak conceptualisation of director financial literacy as being the ability to 'read and understand financial statements'. To this end experts were asked to explain their understanding of this phrase. By the conclusion of the Delphi study the experts framed director financial literacy as:

1. Facilitating board performance by reducing information asymmetry and monitoring management;
2. Facilitating the fulfilment of individual director's duties and monitoring solvency;
3. Being limited to a strategic understanding of 24 accounting concepts related to legal financial reporting; and
4. A fundamental and universal capability from which context-specific and advanced capabilities can be developed.

Thus, on its own, director financial literacy is not sufficient for strategic oversight but it is a necessary foundation which can be developed and potentially applied to multiple roles and contexts.

DISCUSSION

The findings of this study provide empirical support for the view that to reduce information asymmetry and monitor management boards need to be composed of financially competent directors. This study also revealed that information asymmetry may exist at two levels – (1) terminology and (2) the financial story. The first level involves having sufficient understanding of the meaning and application of specific terms and relationships between terms (e.g. profit, cash and retained earnings). The second level involves moving beyond the formal information provided by management in financial statements to evaluate the veracity of that information and strategic implications for the organisation. These two levels are related and necessary.

Recognising, understanding and drawing meaning from the financial concepts embedded in financial statements is akin to language literacy. Unless an individual understands the alphabet, grammar and structure of a language then it is not possible to read the words, draw meaning from texts and evaluate the coherence, quality and veracity of the story. Likewise, unless a director understands accounting concepts, relationships and practices applied to financial statements, then using this information to form a view on basic matters such as the solvency and performance of the organisation (i.e. the 'financial story') is not possible. Thus, when applied to provide assurance of the financials and rigour in board decision-making, director financial literacy potentially contributes value to board performance and the community it serves.

A key theoretical contribution made by this study is the potential influence of regulation, notably directors' duties and individual liability, on the principal-agency relationship. This study supported the view that the board of directors is a key governance mechanism for controlling managerial opportunism and reducing information asymmetry (Fama & Jensen, 1983). Yet by framing director financial literacy in terms of monitoring management and fulfilling individual legal duties the requisite level of financial capability may differ by jurisdiction. For example, legal duties relating to solvency dominated the results across all three rounds of the Delphi study. While individual liabilities are a key feature of the legal regimes for corporate entities in Australia, this is not necessarily the case in other jurisdictions. Thus, while solvency may still be important in other jurisdictions (e.g. the US) in terms of corporate survival, the level of importance attributed to solvency may not be as strong in other jurisdictions where individual director liability for solvency does not directly apply.

From a practical perspective, this study contributes three insights into director financial capability. These insights involve (1) individual and group capabilities (2) the organisation's financial story, and (3) the composition and education of boards.

Firstly, this study indicates that not only does director financial capability involve two levels (expertise and literacy), but director financial literacy itself also involves two levels. While each individual director must have a grasp of fundamental accounting concepts and practices they must also be able to apply higher order thinking skills to these concepts so they can perform as a director. As decision-making groups boards perform an assurance role, including rigour in deliberations and the production of accurate and relevant information. Thus, a higher level of capability is required of the board as a whole and, where relevant, audit committees. This higher level group capability includes the contributions of at least some directors with financial expertise.

Secondly, being able to discern and test the financial story in the formal financial statements is central to the monitoring role. It also potentially affects other board roles, including advice and access to resources such as debt or equity finance.

Finally, this study provides evidence to support the view that selection and composition of boards requires directors who, upon joining the board, are already at least financially literate. Additionally, ongoing development of each director's financial capability through education and experience is necessary.

CONCLUSION

While director financial literacy has become more important in recent years, this concept is weakly defined and measured in the literature. By exploring expert understandings of director financial literacy our study provides a more robust framework for measuring and advancing scholarly endeavours in this area, including the relationship between director financial competence and corporate governance failures. From a practical perspective the results of this study provide a foundation from which more accurate, reliable and direct measures can be developed and applied in a range of contexts. For example, pre and post course assessments to evaluate the effectiveness of director education programs; and for regulatory purposes to verify that directors serving on boards do indeed have the minimal financial capability required to perform their duties and contribute to board performance. While challenging, ongoing research in this area is critical to understanding how each individual director's financial capability may influence the integrity of financial reporting and oversight.

Two key limitations of this study relate to perspective. This study was conducted in the Australian context and the results included potentially jurisdiction-specific concepts as being necessary to director financial literacy. It would be interesting, therefore, to repeat the study in other jurisdictions to gauge the extent to which jurisdiction-specific laws, duties and liabilities influence the minimum level of financial knowledge and capabilities required of each individual director.

The views contributed were also limited to those of the 35 experts who actively participated in the study. The views of other stakeholders in this issue (e.g. novice directors, regulators, shareholders and investors) have not been included in the current study. For example, given their respective motivations for investing in organisations it is possible that shareholders and institutional investors may conceptualise director financial literacy as being inclusive of more specific concepts relating to equity and broader financial concepts, particularly those concerned with forward projections such as earnings forecasts. Similarly, given the interests of corporate regulators such as ASIC, ACNC and the Australian Taxation Office, it is possible their views of director financial literacy are linked to the specific requirements of their statutory mandates. Extending this study to consider other perspectives on this topic would address this limitation.

This study raised other questions which may be addressed in future studies. For example, uncertainty remains as to the extent to which directors are actually financially literate. Thus a priority area for further research is to develop a direct, valid and reliable measure of director financial literacy using the conceptual framework emerging from Delphi study as a basis. Once such a measure is developed it will be possible to verify individual director financial capability in Australia. Beyond measurement further studies into how to educate individual directors to achieve the minimum level and at what point in a director's career this must occur would inform theory and practice on board composition, including director selection and ongoing development. Further studies exploring and explaining how directors connect and apply the information contained in financial statements to generate individual or group views of the financial story would provide insights into why even directors who participate in financial training, may experience difficulty in translating and applying this capability to form an independent strategic view of the finances of the organisation they serve (Coates et al., 2007; Financial Reporting Council, 2012; Weil, Coates, & Laurentius, 2006).

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Figure 1: Breakdown of experts' primary area of professional expertise

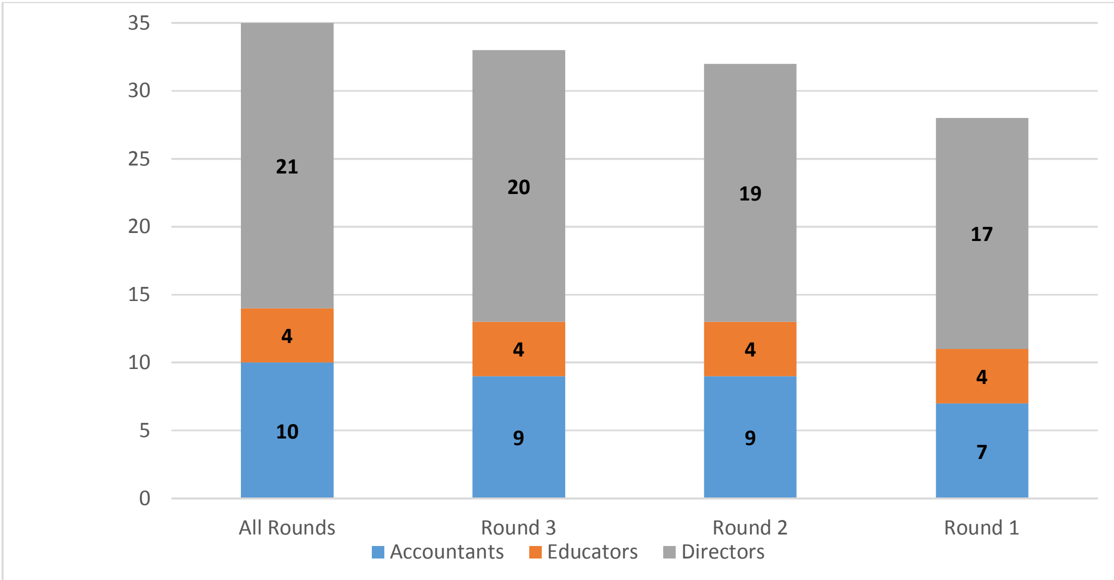


Figure 2: Breakdown of experts' primary sector-based experience

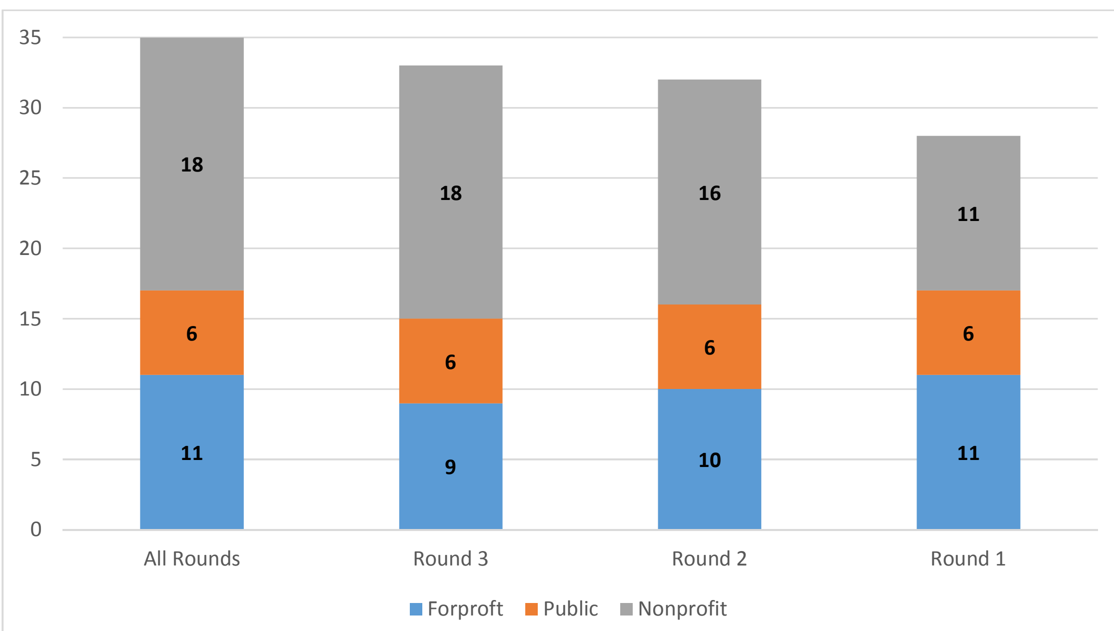


Table 1: Mandatory expertise selection criteria for participants

Expertise sub-domain	Mandatory selection criteria
Accountants	• Accounting knowledge as demonstrated through acquisition of formal post-graduate qualifications in accounting, auditing or finance; and • At least 5 years' experience as a practitioner or advisor in accounting, auditing or finance; or • Recognised professional credibility through current professional membership in leading associations within subject areas, including Certified Practising Accountants (CPA) Australia and The Institute Of Chartered Accountants Australia (ICAA). Membership must be at least 5 years at the professional level.
Directors	• Within the past 10 years at least a total of 5 years' experience as a director on 3 or more boards.
Educators	• Experience in developing, delivering, assessing and reviewing formal director-level education with Australian Institute of Company Directors (AICD), Governance Institute Of Australia (GIA), Australian Institute of Management (AIM) or university courses in business.

Figure 3: Overview of the Delphi study

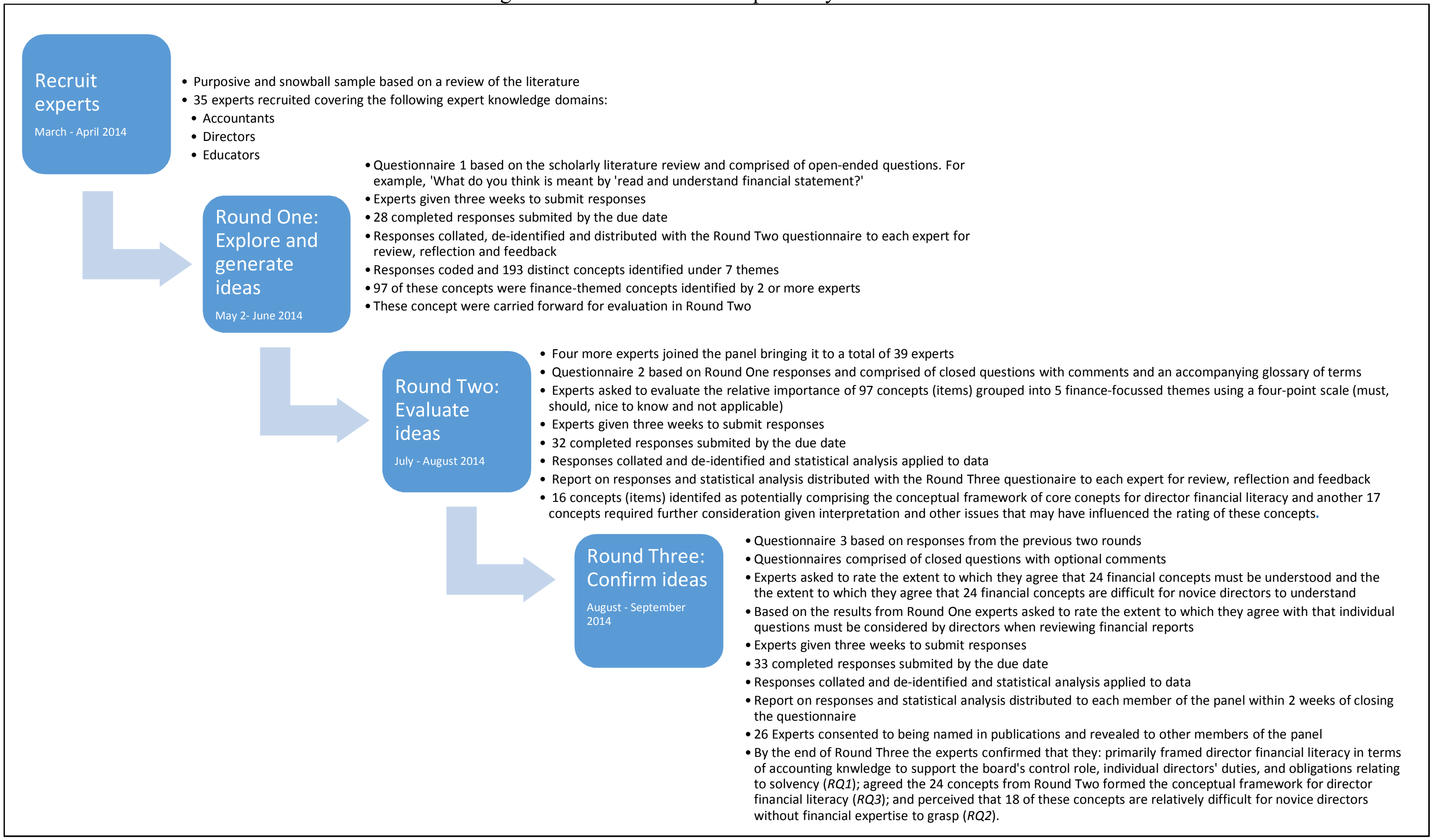
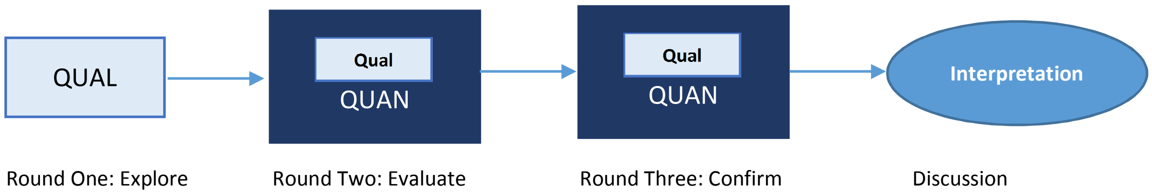


Figure 4: Mixed method design for the Delphi study
Adapted from Cresswell (2009)



QUAN = quantitative; and QUAL = qualitative

Table 2: Director financial literacy competence framework

Level	The 24 concepts directors must understand to be financially literate are listed below.	Each concept relates to one of five dimensions of director financial literacy:	To be financially literate a director also needs have an applied capability which includes being able to:	To be financially literate a director needs to be able to apply the following capabilities t board work
5	1. Solvency 1.1. Capacity to service debt 1.2. Liquidity 2. Financial position	Financial judgements	• Ascertain the strategic implications of financial decisions	• Recall • Recognition • Comprehension • Evaluation • Judgement
4	3. Budget or forecasts vs actuals	Financial statements analysis	• Analyse financial statements	• Recall • Recognition • Comprehension • Analysis
3	4. Audit opinion 5. 'Going concern' assumption	Accounting practices	• Understand how financial reports are prepared and presented	• Recall • Recognition • Comprehension
2	6. Financial statements – the purpose of each statement and the relationships between them 7. Directors' declaration	Financial reports	• Understand financial reports	• Recall • Recognition • Comprehension
1	8. Balance sheet 8.1. Assets 8.2. Liabilities 8.3. Equity 8.3.1. Reserves 9. Statement of cash flows 9.1. Operating activities 9.2. Financing activities 9.3. Investing activities 10. Income statement 10.1. Income 10.2. Expenses 10.3. Profit/loss 10.3.1. Profit vs cash at the bank 10.3.2. Measures of profit (e.g. EBIT, EBITDA and NPAT)	Financial statements	• Understand three fundamental financial statements and the line items within these financial statements	• Recall • Recognition • Comprehension

Figure 5: Concept map for director financial literacy at the end of round one

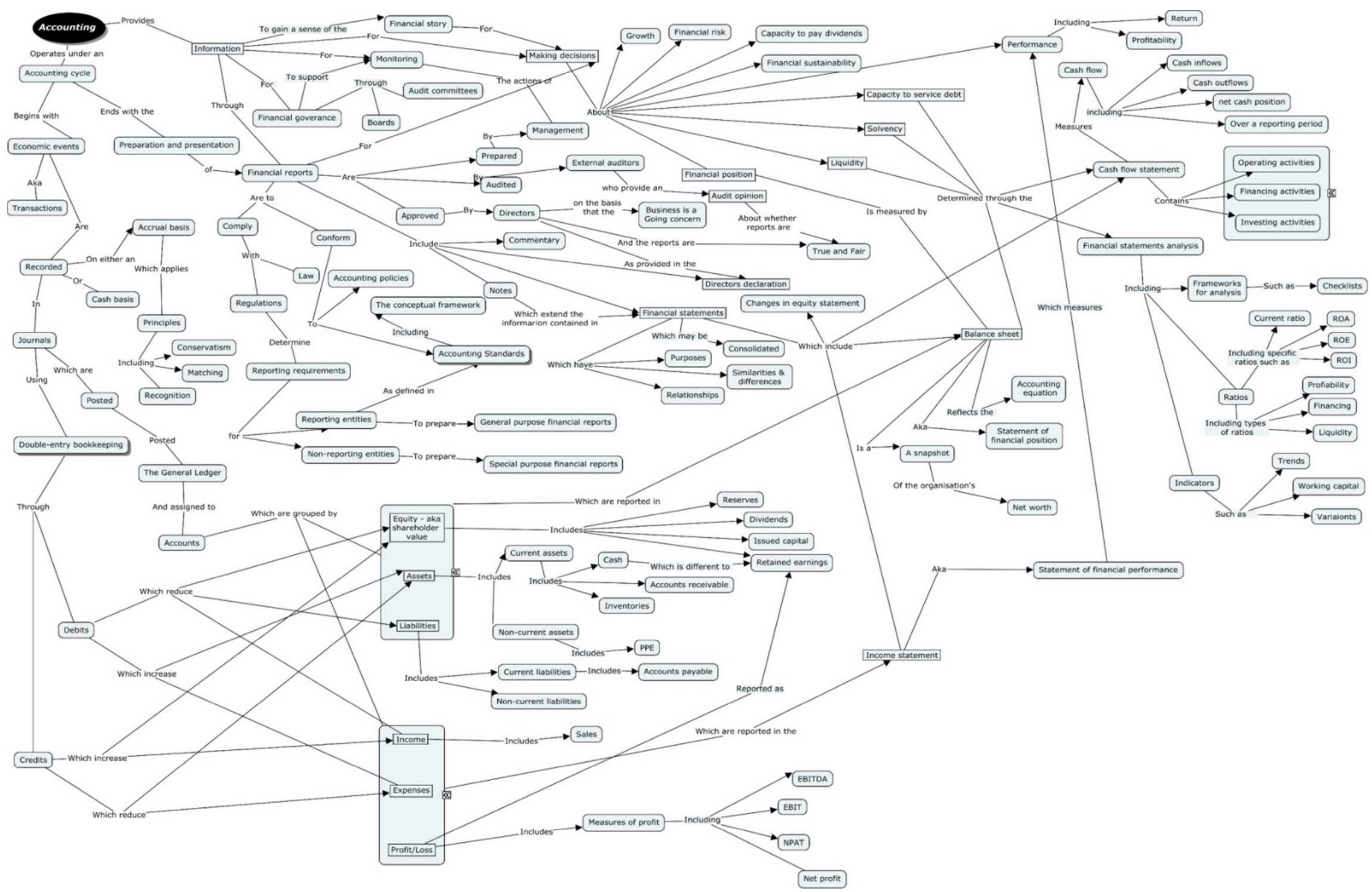
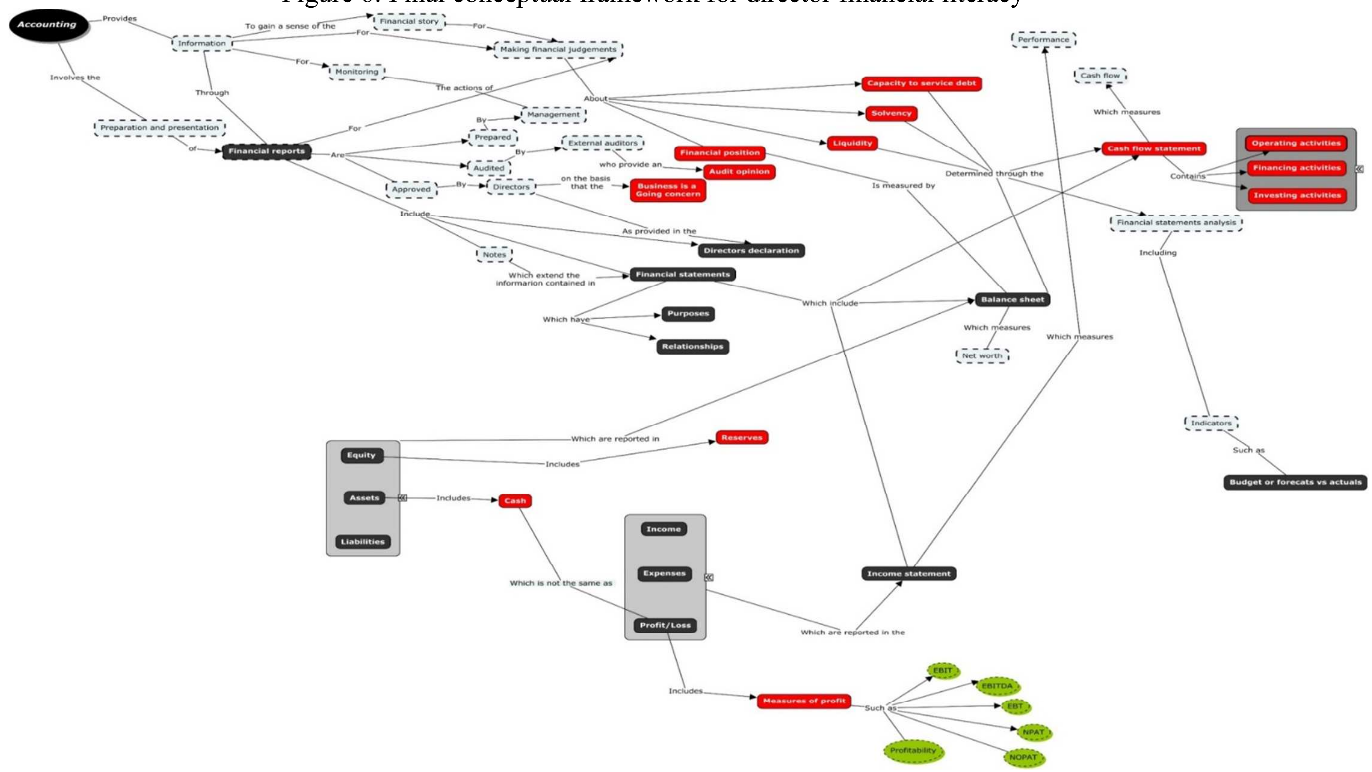


Figure 6: Final conceptual framework for director financial literacy



Concept — Met statistical cut-offs and included in conceptual framework

Concept — Met statistical cut-offs; included in conceptual framework; and identified as relatively more difficult concepts for novice directors without financial expertise to understand.

Concept — Identified in round one and preliminary steps or concepts to those identified in the conceptual framework

Concept — Example of underpinning concepts which may differ according to the context in which a director serves.

Concepts that are grouped because their meaning and use are relative to each other.