Ladder of analytical abstraction: a constructive map for data analysis
A case of voluntary reporting of human capital

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Abstract

Purpose – This study aims to demonstrate how Carney's ladder of analytical abstraction is used to examine the motivations of banks for reporting human capital (HC) information.

Design/methodology/approach – The authors use semi-structured interviews of senior bank employees at eight large New Zealand banks. They analyse the managers' views using a constructive mapping of responses applying Carney's ladder of analytical abstraction. The findings are interpreted from a stakeholder theory perspective.

Findings – The authors find that the New Zealand banks report on HC to manage reputation, strengthen employee relationships and achieve competitive advantages. The results suggest that banks engage in opportunistic reporting to distract external stakeholders while advancing their interests.

Research limitations/implications – The study will guide researchers in the use of Carney's ladder of analytical abstraction in analysing qualitative data.

Practical implications – This study provides insights for businesses to improve the consistency and quality of HC reporting and ensure that the information needs of broader stakeholder groups are met.

Originality/value – Some previous voluntary reporting studies analyse their data using inductive analysis. The authors use Carney's ladder of analytical abstraction as a framework to guide our inductive analysis.

Keywords Qualitative, Data analysis, Inductive, Ladder of analytical abstraction, Sustainability, Human capital reporting

Paper type Research paper

1. Introduction

This study examines the banks' motivations for reporting human capital (HC) information using Carney's ladder of analytical abstraction, a framework that guides an inductive analysis. HC, conceptualised as the skills, knowledge and experience of employees (Becker, 1964; Sveiby, 1989), is arguably one of the most valuable assets in an organisation (Berkowitz, 2001). Studies on HC and its importance to organisations have been published in

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the academic press for several decades (Abeysekera and Guthrie, 2004; Salvi *et al.*, 2022), and some of these studies use qualitative methods (Melubo *et al.*, 2019; Sorour *et al.*, 2021).

Qualitative data analysis comprises a series of interconnected activities, including data reduction, data display and drawing conclusions. The process involves a combination of inductive and deductive reasoning, moving backward and forward identifying and describing themes in the data and interpreting the findings (Thomas, 2006). Thus, conducting a qualitative analysis can be challenging for many researchers due to its complex nature (Lerman *et al.*, 2022). There are limited systematic methods available to guide qualitative data analysis and reduce the complexity of the process (e.g. Carney, 1990, as cited in Miles and Huberman, 1994, p. 91; de Casterlé *et al.*, 2012; Eisenhardt, 1989; Gioia and Pitre, 1990; Gioia *et al.*, 2012; Langley, 1999; Thomas, 2006).

Carney's ladder of analytical abstraction visually presents the steps in the qualitative inductive data analysis and how the steps are interconnected. The ladder of analytical abstraction includes a constructive map of how the raw data evolves into concepts and emerging theories (Ligita *et al.*, 2022). It follows a path that takes the analysis from description to explanation (Miles and Huberman, 1994), where description simplifies content by breaking it down into smaller parts, while explanation demonstrates how the parts fit together in line with the theory (Bernard, 1988). In practice, it is hard for researchers to distinguish between description and explanation, so they move through stages of analysis by condensing data (Miles and Huberman, 1994). In this context, Carney's ladder of analytical abstraction visually guides the researcher in systematically conducting and communicating qualitative research. Thus, in this study, we use the ladder of analytical abstraction, a constructive map proposed by Carney T.F. in 1990, to explore New Zealand banks' motivations behind reporting on HC.

This study makes three contributions. Firstly, we make a methodological contribution by explaining how Carney's ladder of analytical abstraction can be used in conducting a rigorous qualitative analysis. Carney's ladder of analytical abstraction has a major issue of being less detailed than other methods (Miles and Huberman, 1994, p. 92). The lack of details in the data analysis procedure makes it difficult for researchers to assess its suitability for a study (Green *et al.*, 2007), leading researchers to avoid using the method or providing minimum information about the analysis process. For example, researchers in many disciplines, such as health care, hotel management, information systems, knowledge management, public administration and entrepreneurship, use the ladder of analytical abstraction in their data analysis (Brien and Smallman, 2011; Denton-Calabrese *et al.*, 2021; Lee and Fink, 2012; Liddy *et al.*, 2020; Ospina *et al.*, 2018; Samuelsson and Witell, 2022). While stating that they used Carney's ladder of abstraction, this research provides minimum information about how they conducted their data analysis. Such minimum instructions inhibit the development and progress of the method. Thus, in the present study, we comprehensively explain how to conduct an inductive qualitative analysis using Carney's ladder of analytical abstraction to improve the method's development and progression.

Secondly, our study contributes to the sustainability reporting literature. Naynar *et al.* (2018) claim that there is a discrepancy between what information organisations disclose and what information stakeholders value, while Bellucci *et al.* (2021) call for further research on motivation to disclose intellectual capital [1]. This suggests that organisations' motivation for reporting remains an area of further research. A few studies address HC as a standalone practice (Cisi and Centrone, 2021), limiting the understanding of why organisations report on HC; therefore, we contribute to the literature by providing New Zealand evidence on why banks report on HC.

Thirdly, the use of Carney's ladder of analytical abstraction contributes to the voluntary reporting literature. Previous research on voluntary reporting analyses their data using a process of preparing text to work on, developing codes and presenting findings (Thomas, 2006). For example, Bellringer *et al.* (2011) use an inductive analysis and provide details about the development of first-level codes followed by the presentation of findings. There is a lack of research that examines the motivation behind HC reporting using a framework such as Carney's ladder of analytical abstraction. Thus, this research extends the knowledge of HC, demonstrating how Carney's ladder of analytical abstraction is used to examine the motivations for reporting HC information.

The rest of the paper proceeds as follows. Section 2 presents the literature review, including qualitative data analysis and Carney's ladder of analytical abstraction. Section 3 describes the data collection and analysis methods. Section 4 details the walk-through of the ladder of analytical abstraction in the HC reporting domain. Finally, Section 5 provides the conclusion.

2. Literature review

2.1 Qualitative data analysis and Carney's ladder of analytical abstraction

Data analysis is central to all the stages of qualitative research (Flick, 2014). A qualitative researcher deals with words that have multiple meanings, so understanding those meanings and expressing a story is challenging (Chowdhury, 2014; Miles and Huberman, 1994). Therefore in conducting an analysis, a researcher should focus on formalising the components of the story, identifying key variables and understanding the impact of each variable on another (Miles and Huberman, 1994). In this process, a researcher may follow a deductive or inductive approach (Azungah, 2018; Thomas, 2006). Studies applying deductive analysis use pre-defined coding frameworks, identifying themes from previous studies (Abhayawansa and Azim, 2014; Absar, 2016). In contrast, studies using the inductive method develop a tailored coding framework that suits their research rather than using a pre-existing one (Melubo *et al.*, 2019; Sorour *et al.*, 2021). According to Miles and Huberman (1994), the quality of the analysis depends on a coding framework that is well-designed, clear and comprehensive, making the choice of approach irrelevant.

However, in addressing the complex nature of the inductive data analysis process, some researchers create "templates/frameworks" (Lerman *et al.*, 2022) which provide detailed instructions about the data analysis. Some of the templates have been created by Carney (1990 as cited in Miles and Huberman, 1994, p. 91), Eisenhardt (1989), Gioia and Pitre (1990), Gioia *et al.* (2012), Langley (1999) and Thomas (2006). These templates address the challenges qualitative researchers face (Lerman *et al.*, 2022) in making the research methods transparent and able to be evaluated by others (Pratt, 2009). These templates serve different purposes. Some focus on the coding process (de Casterlé *et al.*, 2012; Gioia and Pitre, 1990; Gioia *et al.*, 2012; Thomas, 2006), while others explain the analysis of data from case studies (Eisenhardt, 1989). Particularly, Langley (1999) recommends seven strategies to analyse qualitative data, one of which is visual mapping. According to Langley, visual mapping is a "simultaneous representation of a large number of dimensions, and they can easily be used to show precedence, parallel processes, and the passage of time" (p. 700). Visual mapping "offers a means of data reduction and synthesis that is less radical and more flexible" (p. 702). Langley's concept of visual mapping has been well received, with several citations in papers (Gehman *et al.*, 2018; Lerman *et al.*, 2022). Though Langley's work got much attention, Carney was the first to offer the notion of visual mapping by introducing the "ladder of analytical abstraction" in data analysis in 1990 (as cited in Miles and Huberman, 1994, p. 91). The ladder of analytical abstraction originated from Thomas Francis Carney's 1990 publication *Collaborative Inquiry Methodology*. Except for the note in Miles and Huberman (1994), evidence from the original work is rarely found. Figure 1 shows the ladder of analytical abstraction is a stepwise approach that involves three stages.

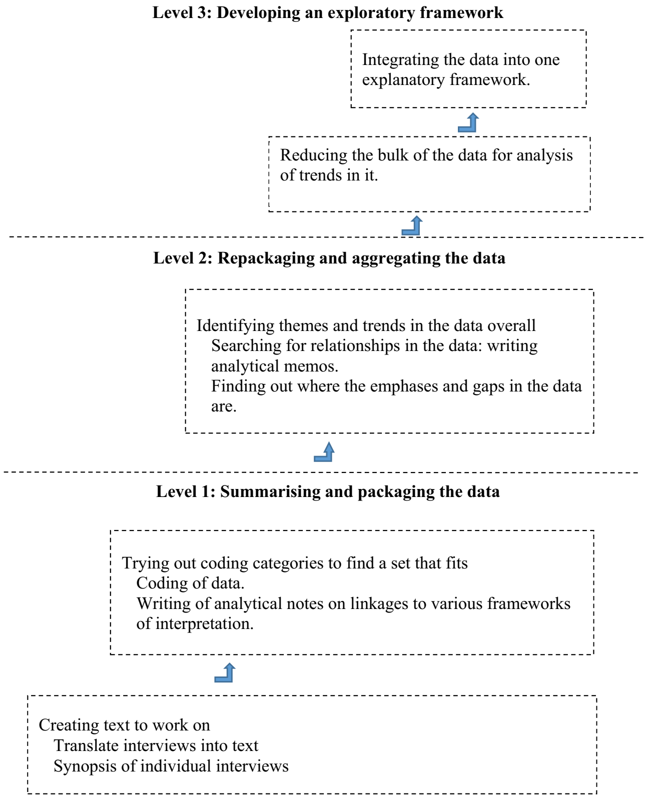


Figure 1. Ladder of analytical abstraction

Source: Adapted from the ladder of abstraction by Carney (1990) as cited in Miles and Huberman (1994, p. 92), with updates by the authors

First-level coding is at the bottom of the ladder, where the researchers summarise and package data by creating text based on interviews and other textual materials. Data are reorganised and consolidated in the second stage, focusing on grouping codes to develop categories. Then, based on categories, themes are identified. At stage three, the researcher integrates their findings and develops an exploratory framework.

The three levels may mislead a researcher, giving the impression that the ladder is linear and sequential; however, a researcher moves back and forth on the ladder from data collection to theory formulation, making it a non-linear and cyclical process (Bygstad and Munkvold, 2011). The approach is more inductive in nature, as it explains how a coding framework is developed from the raw data restricting researchers from arriving at predetermined conclusions (Glaser, 1992). Furthermore, qualitative research is often downgraded by quantitative researchers claiming that the approach is not rigorous enough to demonstrate scientific advancement (Chowdhury, 2014; Gehman *et al.*, 2018; Gioia *et al.*, 2012). However, the ladder of analytical abstraction allows the researcher to engage with the study in-depth to reveal untold stories, enhancing the rigour (Lee and Fink, 2012; Liddy *et al.*, 2020).

2.2 Reporting on HC

In the past, researchers argued that HC reporting was necessary for internal managerial decision-making (Tomassini, 1977) as well as for external stakeholder decision-making (Hendricks, 1976); thus, the concept of reporting HC prevails among the academic community (Flamholtz *et al.*, 2002). However, the accounting standard setters ignored reporting on HC other than from a financial perspective, so voluntary reporting continued to be the focus of businesses and researchers. Since 2000, organisations such as the International Integrated Reporting Council (IIRC), Global Reporting Initiative (GRI) and International Organisation for Standardisation (ISO) have been collaborating globally to develop best practices for voluntary reporting to stakeholders. HC reporting falls within these integrated reporting frameworks (Orazalin and Mahmood, 2019). The frameworks have some differences in overall goals, resulting in variations in the reporting of HC outcomes. However, there are common measures for reporting on HC. For example, the GRI framework requires reporting on 17 (GRI 401–411 and 413–418) topics, such as employment, health and safety and diversity (GRI, 2016). Similarly, ISO 30414 provides guidelines on reporting 11 HC topics, such as compliance and ethics, diversity and leadership (ISO, 2018). Recently, there has been an impetus towards convergence of the business reporting frameworks with the merging of the Sustainability Accounting Standards Board and the IIRC to form the Value Reporting Foundation (Bridges *et al.*, 2022). In addition, the International Financial Reporting Standards Foundation has established the International Sustainability Standards Board (ISSB) to develop globally accepted sustainability standards (IFRS foundation, 2021). Thus, HC reporting, as a part of integrated business reporting, is still in flux.

2.2.1 Motivations to report on HC. An increasing amount of research on sustainability issues is tied to stakeholder theory (Fiandrino *et al.*, 2022). This theory redefines the nature of the role of the organisation and how the value was created (Freeman *et al.*, 2020). An organisation is a sub-part of the social system in which it operates. Thus, it has to maintain sound relationships with multiple individuals and groups (customers, employees, suppliers, communities and owners) "who can affect or are affected by the achievement of the organisation's objectives" (Freeman, 1984, p. 46). The relationship with stakeholders requires organisations to disclose information to stakeholder groups to make appropriate decisions (Hörisch *et al.*, 2020). However, the disclosure of information can be viewed from two perspectives of stakeholder theory: ethical and managerial (Deegan, 2002).

From an ethical perspective, morals and values are a central feature of organisational management, emphasising the organisation's responsibilities to its stakeholders (Donaldson and Preston, 1995; Freeman and Reed, 1983). The values define stakeholder relationships, with greater alignment leading to more productive relationships and value creation (Freeman *et al.*, 2020). Previous studies provide conflicting evidence for this view. Melubo *et al.* (2019) reveal that reporting by locally owned organisations was motivated by the values of the managers and their care for the community. Dissanayake *et al.* (2021) find organisations in Sri Lanka face a tension between global expectations and local contextual factors; therefore, when they undertake sustainability projects, they select projects that benefit themselves and the country's development. In this context, the extent and nature of sustainability reporting in Sri Lankan organisations depend on managers' perceptions of sustainability reporting and the broader context of the country's challenges and global norms. However, providing a contrasting thought, researchers claim that the ethical aspect of reporting is driven by pressure from stakeholders. In this relation, O'Dwyer (2002) argues that the goal of maximising stakeholder information demands is rarely achieved because HC disclosures have been met with increased scepticism and calls by stakeholders for greater actions. Confirming O'Dwyer, Sorour *et al.* (2021) indicate that organisations use reporting to achieve legitimacy as they face external pressures from a changing socio-political environment.

Stakeholder theory also has a strategic management perspective (Freeman *et al.*, 2020; Langrafe *et al.*, 2020). The interaction with stakeholders is powerful (Freeman *et al.*, 2020), as they create pressure on organisations in terms of the perceived needs of society or the environment (Freudenreich *et al.*, 2020). As Frooman (1999) argues, an organisation's focus on stakeholders is counter-intuitive because they must understand how stakeholders influence the firm to take necessary actions. Thus, from the strategic perspective, organisations must manage and integrate the relationships and interests of stakeholders to ensure an organisation's long-term success (Deegan, 2002; Freeman and McVea, 2001) by creating value for them (Freeman *et al.*, 2020). Because the withdrawal of stakeholders damages the endurance of the business (Freeman, 2010). Within this perspective, corporate disclosure is a management tool that provides the necessary information to manipulate the most influential stakeholder groups (Abeysekera, 2006; Gray *et al.*, 1996).

Previous studies support the managerial perspective of stakeholder theory. For example, Abeysekera (2008) find that voluntary reporting reduces tension between firms and their constituents to accumulate additional capital. Azizul Islam and Deegan (2008) state that stakeholder groups place pressure to improve social and environmental performance. Nielsen *et al.* (2016) find that firms report externally to manage the institutional pressure from external forces. As Melubo *et al.* (2019) document, motivations for reporting by the organisation can vary depending on their nature, with foreign-owned enterprises reporting for reasons such as developing business partner relations, protecting the environment and attracting customers. Giuliani and Chiucchi (2019) discover organisations' voluntary reporting changes over time, reflecting the actions of different agents (political, technical and cultural) and changes in the external environment. Gerwanski (2020) finds that integrated reporting is a potential tool that could use to improve the corporate image. Also, when firms are being criticised for past misconduct, they can use reporting to achieve legitimacy. Bellringer *et al.* (2011) find that companies report for reasons such as accountability, financial incentives and strengthening relationships with internal stakeholders. As Farneti and Guthrie (2009) state, voluntary reporting is also used to communicate and influence employees and show employees that they provide leadership (Bellringer *et al.*, 2011). Beattie and Smith (2010) provide that voluntary reporting is used to attract and retain high-quality employees and build a reputation for transparent and accurate reporting.

In brief, some studies support the view that organisations legitimately report satisfying stakeholder demands (Melubo *et al.*, 2019; Dissanayake *et al.*, 2021), while others state the reporting is to manage stakeholders (Abeysekera, 2008; Giuliani and Chiucchi, 2019). Given the mixed views, it is unclear whether firms' reporting satisfies stakeholders' information needs (Naynar *et al.*, 2018). Furthermore, as evident in the literature, the above previous studies examine motivations of intellectual capital or sustainability reporting (Bellringer *et al.*, 2011; Nielsen *et al.*, 2016). Only a few studies address HC as a standalone practice (Cisi and Centrone, 2021), which limits a thorough understanding of HC complexities.

2.2.2 Data analysis in voluntary reporting. This section reviews the qualitative data analysis methods of voluntary reporting studies. A review of the research literature indicates that some studies adopt a pre-defined coding framework in content analysis. In contrast, others develop a framework that is tailored to the study.

The use of a pre-defined list of codes identified from the literature or adapting a coding framework used in previous studies in data analysis is known as the deductive method

(Elo and Kyngäs, 2008; Hsieh and Shannon, 2005). The following studies use a deductive method in their data analysis. Guthrie *et al.* (2006) use a coding framework that comprises three themes: internal capital, external capital and HC, identified via literature. Abeysekera (2008) uses a coding framework with seven HC items to analyse the contents of the annual report information and interview responses. The author identified the items from the HC literature. Azizul Islam and Deegan (2008) also use content analysis to analyse interview responses and annual report information. They adopt a pre-defined framework to analyse the content of annual reports; however, there is no indication of the use of a coding framework for interview responses. Similarly, Beattie and Smith (2010) use a framework with 18 HC items identified from the literature. Abhayawansa and Azim (2014) use content analysis of pharmaceutical companies' annual reports on the Dhaka Stock Exchange. Their study adopts the amended intellectual capital categorisation scheme developed by Abhayawansa (2011). Nielsen *et al.* (2016) use three pre-defined research themes to analyse eight semi-structured interviews. However, the authors provide no information about their data analysis. Absar (2016) develops an index comprising items identified via previous studies to analyse the content of annual reports and responses from semi-structured interviews. Yu *et al.* (2017) initiate their analysis by identifying items via prior literature and then move into developing themes and concepts.

In contrast, some studies develop a coding framework rather than use an existing one. Bellringer *et al.* (2011) develop a coding framework that identifies key themes, topics and issues. The coding process involves developing first-level codes, but no detail was given on the development of subsequent codes. Melubo *et al.* (2019) develop first-level codes by identifying patterns within interview data; however, the authors provide no detailed information on the development of succeeding codes. In contrast, Farneti and Guthrie (2009) develop a coding framework that involves developing the first level and subsequent codes. O'Dwyer (2002) and Schaper *et al.* (2017) developed codes/themes from interview data. Sorour *et al.* (2021) analyse web disclosures using a coding framework with 37 items identified via literature. In addition, Sorour *et al.* (2021) analyse interview responses using the qualitative content analysis method, which involves the development of codes. However, the data analysis process is not explained in detail.

In this context, researchers use inductive and deductive methods in their data analysis. However, our review of voluntary reporting studies has revealed a scarcity of evidence of researchers applying a systematic framework for data analysis, such as Carney's ladder of analytical abstraction.

3. Research method

3.1 Sample and data collection

We use a field study method to interview personnel responsible for reporting on HC to gain in-depth insights into the motivations behind such reporting (O'Dwyer, 2002). We select the banking sector for the study, as it relies heavily on HC (Curado, 2008) and has been the focus of previous studies on HC reporting (Mamun and Aktar, 2020; Onuoha *et al.*, 2020).

At the time of the study, 26 banks were registered with the Reserve Bank in New Zealand, comprising five New Zealand-owned and four Australian-owned banks, with the remaining 17 banks operating as subsidiaries or branches of foreign banks (RBNZ, 2018). The largest banks in New Zealand were Australian-owned, so four Australian and five New Zealand-owned banks were selected for the study. Of the nine banks that were approached to participate in the study, eight agreed to be involved representing 31% of the total registered banks. The interviewees were selected by the banks. They were chosen on the basis that they had a broad knowledge of the banks' business strategies, policies and practices around human resources and reporting of HC information. Table 1 lists the interviewees' positions, which include four human resource managers, some with additional responsibilities, two human resource analysts and an organisation development and operations manager.

We use semi-structured interviews to gather the views of participants. The interview guide includes a mixture of open and closed questions to help "explore and uncover stories" and allow the researchers to manage the direction of an interview (Ahrens and Chapman, 2006; Merchant and Stede, 2006). The interviews were conducted over the phone, as required by banks. We recorded all the interviews with the permission of the interviewees. The interviews lasted for around 1–2 h, as listed in Table 1. To protect the confidentiality of the participants, we remove the names of the interviewees and the banks from the transcriptions. We then assign A-H to identify banks.

3.2 Data analysis

The current study uses Carney's ladder of analytical abstraction that provides a constructive map to analyse the interview responses. The map comprises three levels, as shown in Figure 1.

3.2.1 Level 1: Summarising and packaging the data. As stated above, we collected data from eight semi-structured interviews. In the data analysis at level 1, we transcribe all the audio-recorded interviews verbatim to text. Then, we review the interview transcriptions line-by-line to develop "code", a label assigning descriptive information collected during the study. Data analysis in qualitative research starts with coding. The coding process includes the review of the set of data, transcribing them and separating them meaningfully while keeping the connection between the parts intact (Miles and Huberman, 1994). Miles and Huberman (1994) identify three types of coding in qualitative research: descriptive codes, interpretative codes (categories) and pattern codes (themes).

Descriptive codes are basic types of codes used with little interpretation. The purpose of a descriptive code is to describe the attributes of a particular segment of text (Elo and Kyngäs, 2008; Hsieh and Shannon, 2005). We use the inductive method to develop the codes. Instead of using a pre-existing coding framework, we created a new one based on the needs

Interviewee position	*Interview method*	*Duration of interview*	*Time frame*
1. Organisational Development Manager	Telephone	2 h	24 September 2016
2. Head of People Strategy and Organisational Development, Talent and Development, People and Operations	Telephone	1 h	30 January 2017
3. Human Resource Analyst	Telephone	1.5 h	15 February 2017
4. Manager Human Resource Services, People and Communications	Telephone	1 h	24 February 2017
5. Human Resource Analyst	Telephone	1 h	24 September 2017
6. Manager Human Resource	Telephone	1.5 h	15 January 2018
7. National Operations Manager	Telephone	1 h	02 February 2018
8. Manager People and Communications	Telephone	1 h	14 March 2018
Total interviewee hours		10 h	

Notes: Interviews are shown in the order in which they were conducted; all interviews were conducted over the phone; all the interviews were recorded with the permission of the interviewee; and to ensure the anonymity of the interviewee, the names of the managers and the banks were not revealed
Source: Prepared by the authors

Table 1.
Interviews

of our study to uncover narratives about HC reporting in banks. Furthermore, Carney's ladder of analytical abstraction provides the guidelines for developing a coding framework that suits our study. Accordingly, we create code and assign words, sentences and paragraphs (chunks) in the texts based on their relevance to the code (Elo and Kyngäs, 2008; Hsieh and Shannon, 2005). We use NVivo software for the development of descriptive codes.

3.2.2 Level 2: Repackaging and aggregating the data. After developing descriptive codes, the next stage of data analysis is to construct categories and themes (Miles and Huberman, 1994). Categorising helps a researcher organise and group similar codes into categories or families based on similar characteristics (Saldaña, 2021). In this stage, we reduce the long list of descriptive codes by refining, merging and integrating them into categories (Saldaña, 2021). Then, we further reduce and aggregate some categories as they find interrelated and merit further grouping into themes (Miles and Huberman, 1994). These themes are more explanatory and inferential and pull together substantial amounts of information into more meaningful constructs (Miles and Huberman, 1994).

3.2.3 Level 3: Developing framework. The third stage of the data analysis involves the development of the framework. In this stage, we integrate the themes to develop an integrated schema for reporting on HC.

4. Walk through the ladder of analytical abstraction

4.1 Level 1: Summarising and packaging the data

Based on the interviewees' responses, we developed the first-level codes (descriptive codes). The following text shows how we analyse the case interviews while developing descriptive codes. We extracted the following paragraph from the interview of Bank A and C:

> *In the case of the appointment and resignation of any director, chief executive officer, or someone in higher positions, it has to be reported about that appointment or resignation. It is a regulatory requirement. Further, it is a kind of making aware the public.* (Bank A)

> *Yes, we have an obligation to report on, and we can't get away.* (Bank C)

We then analyse each text line-by-line, with key phrases and ideas highlighted and coded, assigning a label or name. Based on the responses, it is clear that Bank A reports on the appointment or resignation of higher positions because it is a regulatory requirement that the public need to be made aware of. Bank C confirms Bank A's response, indicating that external reporting is an obligation. Thus, we develop two codes, "aware public" and "regulatory requirements". This stage of the analysis resulted in 17 descriptive codes, as shown in Table 2.

4.2 Level 2: Repackaging and aggregating the data

After developing descriptive codes, the next data analysis stage is constructing categories and themes. In this stage, we develop eight categories and three themes (refer to Figure 2).

4.2.1 Developing categories. At this stage, we reduce the list of descriptive codes (17) to eight categories based on their similarities and how the respondents interpreted them (Saldaña, 2021). For some descriptive codes, we find neither responses nor similarities to group into a separate category. The procedure for constructing categories is explained below:

- *Category 1:* Engage with stakeholders (C1)

  The three descriptive codes, communicate with investors (DC1), aware public (DC2) and show commitment to the community (DC3), are similar by nature because they

Code no.	Example of quotations	Code name
DC1	*We maintain a level of disclosure that seeks to provide all investors with equal, timely, balanced, and meaningful information* (Bank B)	Communicate with investors
DC2	*In the case of the appointment and resignation of any director, chief executive officer, or someone in higher positions, it has to be reported about that appointment or resignation. It is a regulatory requirement. Further, it is a kind of make aware the public* (Bank A)	Aware public
DC3	*To address our broader role in society. It's a commitment that's making a difference with encouraging results.* (Bank E)	Show commitment to the community
DC4	*We will provide whatever we need to in terms of registered or obligations. . .I suppose, by law, our responsibility and accountability is to our shareholders first and foremost* (Bank C)	Discharge accountability
DC5	*An annual peer and media review also helps us make sure our CR agenda is in line with best practices. We take all of these things into account, along with the Global Reporting Initiative (GRI) Sustainability Guidelines (G3) framework, when we communicate with our stakeholders.* (Bank D)	Adhering to internationally accepted best practices
DC6	*So obviously we report quite a lot of information, for example, employee benefits such as Salaries and other staff expenses, share-based payment. Accounting standards require us to do so.* (Bank G)	Adhere to accounting standards
DC7	*Yes, we have an obligation to report on, and we can't get away.* (Bank C)	Complying with regulatory reporting
DC8	*I think with the media, it depends on what the media is interested in. The website is a reasonable static portal. With media releases that would either be based on a query coming through to us from the media, or there will be certain things that we want to push out or release to the media, which will be, you know, obviously positive stories about us and once again, it is about building our brand in the market place.* (Bank F)	Strengthening the brand in the marketplace
DC9	*I think it is about helping people understand what are some real experiences that people have had within the bank, and those roles would also be targeted at certain segments. If we are looking for dealers, for example, and you are looking to become a dealer within . . .(name of the bank), you know it is quite good to go on and get an actual example of someone who is in the role now; what have they experienced? What do they like about the role? What do they like about working here? So once again, it is about employee attraction.* (Bank H)	Attract potential employees
DC10	*Then people know what kind of knowledge, skills, and qualities we require. The person who fulfilled all requirements only can apply for the post.* (Bank A)	Raise awareness of the bank to potential employees
DC11	*Yes very. It is critical. I mean, ultimately, we achieve our results because of our people, so if we are not acknowledging and celebrating the great work that our people are doing, then that will impact our ability to attract and retain good people who are going to help us ultimately to achieve results.* (Bank B)	Acknowledge employees
DC12	*We do report employee information to external parties to show our commitment towards them.* (Bank H)	Show the bank's commitment to employees
DC13	*That's why we have a genuine commitment to investing in our people* (Bank B)	Show banks' interest in people development

(*continued*)

Table 2.
Development of descriptive codes

Code no.	Example of quotations	Code name
DC14	*I think if you want information on who our executive is, and then you can go onto the . . . website, I think you can get there. If you go through the careers website, I think you will find it. You know, it is kind of profiling people within the bank.* (Bank G)	Profile employees
DC15	*At . . . Bank, we are committed to recognising and rewarding the contribution of our people.* (Bank F)	Recognise and reward employees
DC16	*Living our values every day is integral to achieving our vision. They reflect what is great about us and how we work together - both in our interactions with each other as well as with our customers, communities, and other stakeholders. So, all reporting is focused on profiling the bank.* (Bank C)	Profile the organisation
DC17	*Through reporting workforce profiles, we show that we have people who make a difference. So there is a competitive component to it. So what we have relative to our competitors.* (Bank D)	Show banks' strengths over competitors

Source: Prepared by the authors

Table 2.

emphasise different external stakeholder groups. Thus, we group all three descriptive codes into a category named "engage with stakeholders".

- *Category 2:* Discharge accountability (C2)

  Discharge accountability (DC4) considers a single category because of the absence of links with other codes.

- *Category 3:* Adhering to internationally accepted best practices (C3)

  Similar to C2 above, we find no links with other codes, so a single category adhering to internationally accepted best practices (DC5) is created.

- *Category 4:* Complying with the regulatory requirements (C4)

  As Bank G reports, accounting standards require banks to report some employee-related information:

  > *These are some mandatory disclosure requirements prescribed by accounting standards. So obviously we report quite a lot of information, for example, employee benefits such as salaries and other staff expenses, share-based payment. Accounting standards require us to do so. (Bank G)*

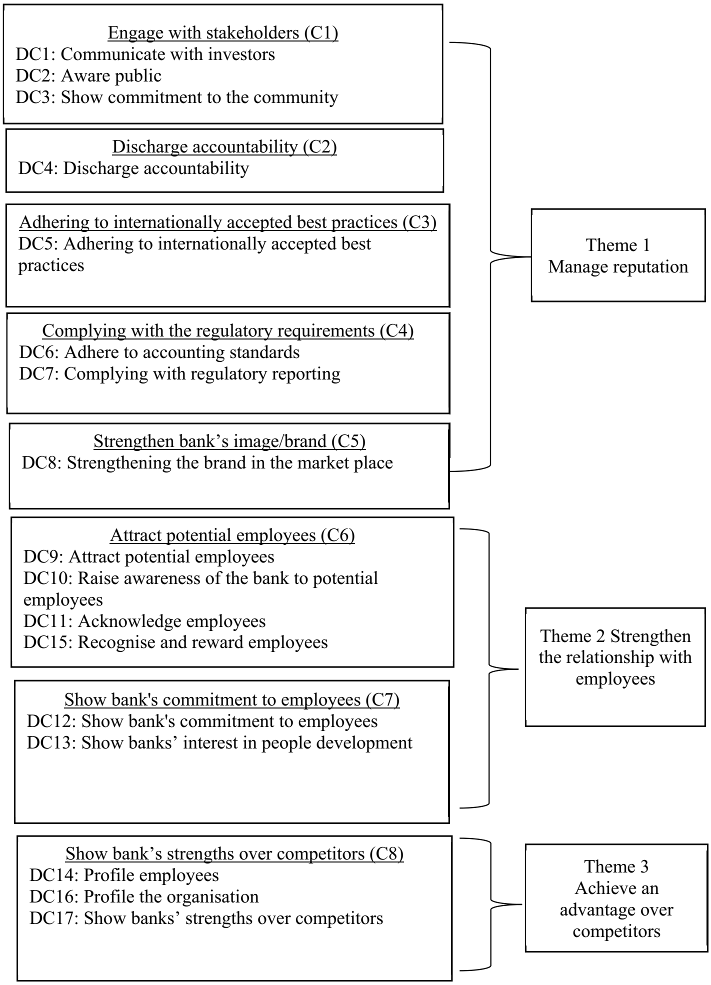
  The above comment shows that reporting some employee information is mandatory; thus, we combine the two codes, adhere to accounting standards (DC6) and complying with regulatory reporting (DC7), into a category, complying with the regulatory requirements.

- *Category 5:* Strengthen banks' image/brand (C5)

  We consider strengthening the brand in the marketplace (DC8) as a single category because of the absence of links with other codes.

- *Category 6:* Attract potential employees (C6)

  As per the following response from Bank D, the two descriptive codes, raise awareness of the bank to potential employees (DC10) and attract potential employees (DC9), are linked:



Source: Prepared by the authors

Figure 2.
Framework with descriptive codes, categories and themes

We place great value on ensuring potential employees have opportunities to develop themself and meet their career goals. We provide the required information to them aware. We have a careers site showing all the roles available in the [. . .] Group. This is purely for attracting potential employees. (Bank D)

Banks seem to report HC information to inform potential employees and attract them to the banks. Furthermore, attracting employees appears to be connected to two other descriptive codes; acknowledge employees (DC11) and recognise and reward employees (DC15):

I mean, ultimately, we achieve our results because of our people, so if we are not acknowledging and celebrating (recognise and rewarding) the great work that our *people are doing, then that will impact our ability to attract and retain good people who are going to help us ultimately to achieve results*. (Bank B)

Thus, we group all four descriptive codes, DC9, DC10, DC11 and DC15, into one category named attracts potential employees.

- *Category 7:* Show banks' commitment to employees (C7)

  As Bank H's response indicates, providing learning and development is a way of showing commitment to employees. Therefore, we group the two descriptive codes, which show banks' interest in people development (DC13) and demonstrate the bank's commitment to employees (DC12), into a category that shows the banks' commitment towards employees:

  > *We do report employee information to external parties to show our commitment towards them. Especially how do we commit to providing learning and development*? (Bank H)

- *Category 8:* Show the bank's strengths over competitors (C8)
  The response from Bank E below appears to be linked to three codes: profile employees (DC14), profile the organisation (DC16) and show the banks' strengths over competitors (DC17). Thus, grouping the three codes, we develop a category named, showing banks' strengths over competitors:

  > *Through reporting workforce profiles, and organisational profiles, we show that we have people who make a difference. So, there is a competitive component to it. So, what we have relative to our competitors*. (Bank E)

4.2.2 Developing themes. In this stage, we identify interrelationships among the eight categories developed above based on interviewees' views and reduce them into three underlying themes: manage reputation, strengthen relationships with employees and achieve an advantage over competitors:

- *Theme 1:* Manage reputation (T1)

  The three categories, discharge accountability (C2), adhering to internationally accepted best practices (C3) and complying with the regulatory requirements (C4), are associated with engagement with stakeholders (C1). Firstly, banks report on HC as a way of discharging accountability towards diverse stakeholders, as indicated in this response from Bank H:

  > *We believe accountability is important; that's why we report about the governance structure to ensure that, from the boardroom to our people who help customers every day, we create benefits for the shareholders, customers, communities, and the environment*. (Bank H)

  Secondly, the response from Bank D indicates that globally accepted practices, such as the GRI, are being used when reporting to stakeholders:

  > *An annual peer and media review also helps us make sure our CR agenda is in line with best practices. We take all of these things into account, along with the Global Reporting Initiative (GRI) Sustainability Guidelines (G3) framework, when we communicate with our stakeholders*. (Bank D)

  Finally, the response from Bank F identifies that HC information fulfils the reporting requirements of another stakeholder group, regulatory authorities in New Zealand:

> *We also report to Statistics NZ and tax authorities. They are also kind of stakeholders. We participate in an employee survey. They are particularly interested in information such as how many employees we have, what the gender makeup looks like, what the salary ratio is, etc. I suppose, by law, we are responsible for providing this information.* (Bank F)

As indicated in the above responses, banks' discharging accountability, adhering to internationally accepted best practices and complying with the regulatory requirements are ways of engaging with stakeholder groups. However, as in the response of Bank E, the aim of engaging with stakeholders is reputation building:

> *We believe our reputation directly affects the sustainability of our business. That's why we have a genuine commitment to reputation-building initiatives, like doing more for our customers and addressing our broader role in society.* (Bank E)

Based on the above responses, we connect the two categories, engage with stakeholders (C1)and strengthen the banks' image/brand (C5), to create Theme 1-manage reputation.

- *Theme 2:* Strengthen the relationship with employees (T2)

  We develop Theme 2 by combining the two categories: attract potential employees (C6) and show banks' commitment towards employees (C7). Bank A's response highlights that what banks do for existing employees helps attract the best potential employees:

  > *We report employee information to show our commitment to existing employees. This helps to attract the best employees from outside. You know, when we are publicly visible externally, then you know that they are able to see that we are performing well or not; we are not performing as well.* (Bank A)

- *Theme 3:* Achieve an advantage over competitors (T3)

  We consider the category to show banks' strengths over competitors (C8) as a single theme because of the absence of links with other categories.

4.3 Level 3: Developing a framework

The above two stages of the analysis result in three themes: manage reputation, strengthen the relationships with employees and achieve an advantage over competitors. At level 3, we re-analyse these themes with the responses and then compare them with the theoretical perspective to integrate the data into one explanatory framework.

4.3.1 Re-analysis of themes with responses. The re-analysis of responses relating to the first theme, managing reputation, reveal that banks attempt to improve their image by reporting positive stories. An example is from Bank F:

> *There will be certain things that we want to push out or release to the media, which will be, you know, obviously positive stories about [. . .] (name of the bank) and once again, it is about building our brand in the marketplace.*

This comment denotes that Bank F wants to build its brand image; thus, they push out certain information, obviously positive stories, to the media. Telling' positive stories' may imply that banks avoid telling "negative stories" when reporting to stakeholders. Reiterating Bank F's comment, an interviewee of Bank G notes, "specifically, if they are external stakeholders, it is good to publish and to demonstrate good work that employees are doing internally". These comments imply that banks carefully consider what stories to report externally, which may not be well balanced.

In the second theme, to strengthen the relationships with employees, responses indicate that banks proactively report in their annual/sustainability reports and websites to maintain a good relationship with their employees. They appreciate the contribution of employees and demonstrate that they are committed to fulfilling employees' personal and professional aspirations. This is to build employees' trust, confidence and maintain a cordial relationship in the future. However, some interviewees indicate the risk of privacy breaches by reporting confidential HC information to outsiders. Interviewees from Banks C, E and H state:

> *Employee information is sensitive. I don't think we report all employee information to outsiders*. (Bank C)

> *We have to protect the confidentiality of the information. So, we think twice when it comes to reporting about employees*. (Bank E)

> *We do report only if we need to because we believe that employee information should be highly confidential. Especially some employee information should not be disclosed not only externally but also internally. Probably one can get motivated, and other people will get demotivated*. (Bank H)

As respondents remark in the quotation above, if employee information is readily available for others to see, anybody would be able to misuse the information, perhaps for personal reasons. Thus, HC information should be reported cautiously to avoid breaching privacy by disclosing sensitive and confidential information.

In relation to the third theme, we find that while HC reporting contributes to achieving a competitive advantage, on occasions reporting may harm the competitive position. In the following interview extracts, banks do not disclose all HC information to stakeholders to protect their competitiveness:

> *We have a records scheme where we recognise individuals coming up with innovative ideas. We don't disclose this information. If we disclose it, others might use it*. (Bank C)

> *The possibility of disclosing all employee information in annual reports is less. We don't want our competitors to know some information*. (Bank A)

> *There is some employee information we don't report in any document because we don't feel it is really necessary to show it to our competitors*. (Bank B)

> *When we prepare our annual reports, there is a circumstance where we ignore HC information. We don't want competitors copying our high-profile information*. (Bank E)

The findings indicate the competitive nature of the industry. Four Australian-owned banks with significant resources dominate the banking industry in New Zealand. This creates intense competition for domestic banks and smaller international players to attract employees away from larger competitors. Bank D's comment shows the intensity of the competition in the financial services industry, "I think there are four major banks in New Zealand. At the end of the day, our product is nearly similar. There is very little we can compete on in terms of product". Thus, it is not surprising for banks to be cautious when they report on HC that may not damage them.

In summary, banks' HC reporting is motivated by reputation, strengthening relationships with employees and competitive advantage; however, they do not report all the HC information externally to prevent negative consequences associated with such reporting.

4.3.2 Re-analysis of themes with stakeholder theory. From the stakeholder theory perspective, in voluntary reporting, organisations can either take an ethical stance to fulfil their responsibilities to stakeholders or a managerial stance by managing groups of stakeholders that can influence organisational outcomes.

The first theme, managing reputation, agrees with the managerial perspective of the stakeholder theory. Interviewees referred to "push[ing] out" positive stories to external stakeholders, which means banks' HC reporting is positively toned (Beretta *et al.*, 2019). Stakeholders often interpret voluntary reporting and rate it against the competitors, creating a positive mindset towards the organisation and strengthening its reputation over time (Javed *et al.*, 2020). Negative stories hurt organisations' place in society (Kent and Zunker, 2013); therefore, banks may use positive reporting to change/mislead the mind of stakeholders to boost their reputations (Ben-Amar and Belgacem, 2018).

The second theme, banks' reporting on HC to strengthen the relationship with employees, is consistent with the ethical perspective of the stakeholder theory. For example, employees are provided information as they have a right to receive information about how business activities affect them (Day and Woodward, 2004). Employees are publicly acknowledged for preserving their identity and enhancing their health and well-being (Brun and Dugas, 2008; Grawitch *et al.*, 2006). Also, the interviews reveal that not all HC information is communicated, as it may breach privacy issues (Brown and Forster, 2013). These actions of banks appear genuine to strengthen the relationship with employees because employees are the knowledge contributors to the value-creation process of businesses (Freudenreich *et al.*, 2020).

In contrast, acknowledging the employees and communicating their commitment to employee development is a non-monetary strategy (Montani *et al.*, 2020) that helps control and monitor employees (Dandeker, 1990). On the other hand, employees who view themselves as recognised by their organisations tend to have a stronger connection with their employers (Farooq *et al.*, 2017). Such connection increases employee morale, job satisfaction and commitment to the organisation, which leads to greater operational efficiency (Ho *et al.*, 2022). Thus, HC reporting can also be interpreted from a managerial stakeholder perspective.

The third theme, archive advantages over competitors, aligns with the managerial perspective. While accepting that reporting HC is a source of competitive advantage (Abhayawansa and Abeysekera, 2008), this study also finds that banks are cautious about revealing HC information as it may harm their competitive position. Competitors are dangerous and dominant (Phillips, 2003) and harm organisations (Phillips *et al.*, 2003). Especially with employee relations, competitors take advantage if organisations disclose such information (Kent and Zunker, 2013; Williams, 2001). Thus, organisations have to choose whether they report on HC in a way that competitors are being managed from a strategic perspective (Fassin, 2009).

5. Conclusion

This study aims to demonstrate how Carney's ladder of analytical abstraction is used in examining the motivations to report HC information. The analysis starts with reviewing data from interview transcripts to develop descriptive codes, categories and themes. The themes are then re-analysed alongside the bank responses and stakeholder theory to develop an integrated schema for motivation to report on HC (refer to Figure 2). We find that managing reputation, strengthening relationships with employees and achieving competitive advantage motivates banks' reporting.

However, drawing from the stakeholder perspective, we posit that New Zealand banks' HC reporting is driven by the motive of managing external stakeholders to gain a reputation (Gerwanski, 2020) and achieve competitive advantages (Salvi *et al.*, 2022). In addition, banks report to internal stakeholders with an ethical perspective to satisfy internal stakeholders, i.e. employees, or manage them (Bellringer *et al.*, 2011; Farneti and Guthrie, 2009). In this context, banks' HC reporting mainly focuses on maximising their interest rather than showing the commitment to meet the interests of external stakeholders. In other words, opportunistic reasons motivate banks to report on HC. Such reporting leads to an information asymmetry (Kren, 1997), thus making it more difficult for stakeholders to assess the accuracy of the information and make valid comparisons between banks. It leads stakeholders into a paradox when deciding whether the reporting is useful. Consistent with our findings, Bellringer *et al.* (2011) find that pragmatic or economic reasons mainly drive voluntary reporting of local councils in New Zealand. Abeysekera (2006) claims that external reporting can distract or influence stakeholders' perceptions by communicating how their actions meet the expectations of key stakeholders. However, the viability of such a strategy is problematic, as it could risk damaging the organization's reputation. Thus, a closer examination of the information's credibility and taking accountability for disclosed information is essential, especially given that the banking sector is significant to the economy and society (Lodhia and Mitchell, 2022).

The findings have several implications. Firstly, our findings provide organisations insight into improving the consistency and quality of reporting and ensuring that the information needs of broader stakeholder groups are met. Secondly, the study provides evidence that Carney's ladder of analytical abstraction is a relevant tool for examining voluntary reporting. Thus, this research helps novel researchers to conduct future qualitative research based on systematic frameworks such as Carney's ladder of analytical abstraction.

Our findings need to be interpreted with caution due to potential limitations. All the interviews were conducted by telephone; therefore, interviewees' behaviours (Rowley, 2012) and body language (Bryman, 2001) could not be assessed. Furthermore, based on their own external communication policy, the banks in our sample selected the interviewees to participate in our study. The participants included managers from human resources and operations; hence, their viewpoints may not accurately reflect the banks' HC reporting motivations.

Note

1. Intellectual capital consists of three components, HC, structural and relational (Edvinsson and Malone, 1997).

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