

(Ac)counting in Organisations: Managers and Non-Financial Information

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Abstract

Purpose

The purpose of this paper is to make sense of the tensions and contradictions between different perspectives (i.e., the functional and in-action) of the meaning and use of Non-Financial Performance Information (NFPI).

Design/methodology/approach

This paper draws on the previous literature to explore the issue of (Ac)counting based performance measurement systems and the understandings and practices in the concept NFPI.

Findings

The tensions and contradictions in NFPI can be understood in terms of the ‘collision’ between functional and in-action perspectives. The literature to date has been relatively silent on the importance of how managers use and contribute to NFPI. Many researchers have highlighted the importance of aligning NFPI to strategy and securing organisational objectives. However, there has been relatively little attention paid to how individual managers use, interpret, create and work with NFPI within organisational settings.

Practical implications

How NFPI (e.g., social, environmental, intellectual capital) is used by managers is an important issue. Understanding the issues can contribute to finding practical solutions.

Originality/value

The paper makes three distinct contributions to the emerging literature on NFPI. First, it provides unique definitions of NFPI from the functional and in-action perspectives. Second, the paper focuses attention on the importance of NFPI for internal management of organisations by examining prior literature. Third, it highlights the gap in prior literature, which has been examining the functional aspects of using NFPI and shows the need for

paying attention to the interests, beliefs, and activities of managers i.e., how managers actually use NFPI.

Keywords

(Ac)counting, Financial accounting, Management accounting, Non-financial performance information, Intellectual Capital, Social and Environmental accounting.

Paper Type

Literature review.

1. Introduction

“Even in today’s measurement obsessed world, there are still many things that count but that do not get measured – and many things that are measured but not recognized or treated properly” – Humphrey and Lukka (2011)

For several decades, accounting has been recognised to have a crucial role in organisational functioning. Accounting activities such as assessing costs and revenues, financial standard setting, reporting of organisational performance, financial planning and control has elevated the status of accounting to be a vital function of an organisation (Hopwood, 1983). According to Hines (1991) accounting reports create a boundary to the organisation, influencing what is and what is not of significance in discussing organisations, their financial performance and impact. Vaivio (1999) referred to accounting practices as routines which bring stability into action, normalise lines of responsibility, set boundaries and also fix expectations.

Also, accounting is a social and organisational practice that changes or is capable of being changed in response to demands expresses or implied by a changing context (Miller & O’Leary, 1987). Recently accounting has been seen to be a significant contributor to the current global financial crisis, providing secretly to offshore financial services and tax avoidance, a need for the delivery of efficient and smaller governments, a focus for performance for commercial activities (Humphrey and Lukka, 2011).

(Ac)counting in its organisational and social context is at the forefront of many public policy debates and activities. Many have embraced accounting to help ‘solve’ complex issues or hide behind. However, many are ignorant of the subjective and ambiguous nature of accounting based performance measurement systems within nation, states, organisations and for individuals.

Within an organisation, accounting developments are associated not only with management of financial resources, but also with the creation of particular patterns of organisational visibility, the articulation of management structure and the creation of power and influence (Burchell et al., 1980). Financial accounting shapes organisational processes and actions since it casts organisational performance into economic terms that could be used by internal and external parties (Hopwood, 1983).

Nevertheless, organisations' reliance upon (Ac)counting only financial measures have been found to be limiting (Nowak & Anderson, 1999), and there has been several criticisms against just financial measures (Emmanuel & Otley, 1995). First, financial accounting information is historical in nature, in that it captures information about the organisation's past actions, but nothing about its future alertness (Chakravarthy, 1986; Kaplan & Norton, 1996b; Merchant, 1985). Second, Nørreklit (2000) argues that financial accounting figures do not focus attention on those resources that would lead to financial results in the future. Third, traditional financial accounting is over-reliant on cost information and other financial data which are short-term in nature (Jusoh, Ibrahim, & Zainuddin, 2008). Fourth, traditional financial accounting fails to provide information in a timely, complete and effective manner (Teoh, 2006). Fifth, financial measures emphasise only one perspective of performance. It does not help managers assess how well they perform across a range of strategically significant areas such as quality, delivery performance, customer loyalty, new product development, employee development, and information systems (Langfield-Smith, Thorne, & Hilton, 2009). Finally, financial reports are of limited use in predicting shareholder value, especially for organisations characterised by intangible assets such as patents, innovation, and customer relationships (Cumby & Conrod, 2001).

The drawbacks of relying exclusively on (ac)counting for financial information has meant that organisations have not (ac)counted for non-financial resources. However, organisations' managers have found that non-financial (both quantitative and qualitative) information is required to help understand and make decisions (Langfield-Smith, et al., 2009, p.45). Therefore, organisations are using several Non-Financial Performance Information (NFPI) such as customer satisfaction, employee morale and satisfaction, deliveries on time, and defective products returned, energy efficiency, carbon output, to name a few. The reliance placed by managers on this information has encouraged management accounting to place a greater emphasis on NFPI such as customer loyalty, employee satisfaction and internal processes (Nowak & Anderson, 1999).

Using a functional perspective, Kaplan & Norton (1996) claim that NFPI could help managers to recognise changes in the business environment, determine and assess progress towards business objectives, and affirm achievement of performance goals. NFPI measures help to monitor critical activities in value creation process (Kaplan & Norton, 1992) which provide both historical and predictive indicators (Wright & Keegan, 1998). When an

organisation aligns its NFPI with its strategic priorities, NFPI leads to superior organisational performance in the long run (Abernethy & Lillis, 1995; Chenhall, 2005; Hoque, 2004; Melnyk et al., 2005).

By focusing on NFPI, this prior literature tends to agree on the idea that NFPI improves organisational performance. Therefore, scholars and practitioners have developed different frameworks that included non-financial information, several are discussed in the next sections. There are problems in implementation of these various frameworks (Bierbusse & Siesfeld, 1997; Gates, 2001; Meekings, 1995), which is a research topic in itself and not further discussed here since it does not fall within the scope of this study. Nevertheless, researchers who recommend these frameworks and practitioners who use these frameworks do so believing that their measurement efforts will have a positive impact on the organisation's overall financial performance (Bourne et al., 1999).

How NFPI measures result in positive financial performance is an issue that interests academics and has been widely researched (e.g. Abernethy & Lillis, 1995; Chenhall, 2005; Hoque, 2004; Iselin, Mia, & Sands, 2008; Ittner, 2008; Ittner & Larcker, 2000b; Nowak & Anderson, 1999; Reijonen & Komppula, 2007). However, a question for those managing organisations is what can be done with NFPI, so that what is collected would result in positive change in organisational performance. The literature has recognised the need for the use of NFPI, but it is necessary to understand if managers find any tensions and contradictions between different conceptions (i.e., functional and in-action perspectives) of NFPI. Therefore, the aim of this paper is to review prior literature to understand how managers make sense of the meaning and use of NFPI.

For the purpose of this paper, the functional perspective is described as a system of thought, based on the premise that the NFPI framework is built according to principles and serves an utilitarian purpose. Also, the frameworks are capable of serving the purpose for which they were designed. On the other hand, in-action perspective of NFPI can be interpreted as to how the frameworks are used in ordinary day to day activities of the managers (i.e., the results from practice or action of the managers).

The paper proceeds as follows. Section 2 provides a brief review of studies of NFPI and organisational performance. An overview of several performance measurement frameworks is provided in Section 3. Section 4 introduces relevant research then explores how managers

and organisations mobilise and use NFPI in action, whilst section 5 provides a summary and conclusion.

2. Brief Literature Review of NPFI

This section provides a brief review of NFPI and organisational performance. For instance, Ittner and Larcker (2000a) claim that NFPI are better indicators of future financial performance and that NFPI could provide the missing link between the organisation's activities and financial results by providing forward-looking information. Similarly, Banker et al. (2000, p.46) claim that NFPI are better predictors of long-term financial performance than current financial measures.

To illustrate various claims in the use of NFPI, we explore the intellectual capital (IC)¹ literature. Andriessen (2004, p. 232) identified seven primary reasons for management to focus on non-financial resources such as IC: focusing attention; improving the management of intangible resources; creating resource-based strategies; monitoring effects from action; translating business strategy into action; weighing possible course of action; and enhancing the management of the business as a whole. Academics, consulting firms and practitioners have also been emphasising the need for paying attention to NFPI since at least the 1980s (Gosselin, 2005). Also, Nagar & Rajan (2001) support supplementing financial measures with non-financial measures and Biddle et al. (1995) claim that non-financial measures contain more information than financial measures. Therefore, with a widespread claim that NFPI improves organisational performance, the following studies have been conducted to test these claims.

Several studies have reviewed the statistical properties of NFPI to understand if its measurement leads to financial performance. For instance, Ittner (2008) finds evidence that indicates that the strength of statistical relations between NFPI measurement and organisational performance declines as the sophistication of the analysis increases and greater

¹ The term **intellectual capital** (IC) conventionally refers to the difference in value between tangible assets (physical and financial) and market value (Lank, 1997; Sveiby, 1997). IC is normally classified into human capital, structural capital and relational capital. Human capital includes the knowledge, skills, competence, commitment, motivation, loyalty and creativeness of the employees (Olsson, 2001; Roos, 1998). Structural capital consist of items such as patents, concepts, models research and development, and computer and administrative systems, while relational capital consist of relationships with customers and suppliers, brand names, trademarks and reputation (Guthrie & Petty, 2000)

use of NFPI measures for internal purposes is positively associated with organisational performance. However, other studies seem to be skeptic about the relationship between improvements in non-financial intangible assets and financial gains or stock price (Ittner & Larcker, 2003, 2005). Ittner (2008) suggests that the link between NFPI measures and economic gains could not be found due to implementation problems arising from technical and organisational barriers.

Some studies found positive associations between self reported NFPI and perceived performance. For instance, Lingle and Schiemann (1996) report that organisations regularly use diverse NFPI together with the management agreement over strategic success factors, to achieve improved financial performance. Hall (2008) found that comprehensive financial and non-financial performance measures seem to influence managers' cognition and motivation, which, in turn, influenced managerial performance. Similarly, in their study on small entrepreneurs, Reijonen and Komppula (2007) found that non-financial measures of success were affected by the entrepreneur's motivations and goals, and influenced financial performance. Ittner and Larcker (2000b) claim that by supplementing financial accounting measures, with NFPI about strategic performance and implementation of strategic plans, companies can communicate objectives and provide incentives for managers that address long-term strategy. Few other studies found a positive association between NFPI and organisation's performance (e.g. Iselin et al., 2008; Joiner et al., 2009), while some studies provide contradictory results (e.g. Ittner & Larcker, 2005; Perera, Harrison, & Poole, 1997).

Also, Bourne et al (2005) conducted multiple case studies in a single organisation to investigate the use of NFPI and found that when senior managers use the performance measures personally, and regularly involve themselves in the decisions of the subordinates, they become interactive and result in high levels of performance. Perera et al. (1997) found that there was no link between organisational performance and customer-focused strategy though an association was found between customer-focused strategy and NFPI. However, Ittner & Larcker (2005) indicates that there could be a danger that improvements in NFPI may not translate into improved financial results due to reasons such as ineffective strategy, poor non-financial measures, inappropriate improvement targets, gaming of measures and targets all of which prevent improvements from reaching the bottom-line. In a nutshell, this prior literature suggests that there is an association between NFPI measures and improved organisational performance.

Though the above prior accounting literature reviewed has supported the use of NFPI, the literature has been ambiguous whether NFPI have incremental information content for predicting future financial performance (Wiersma, 2008). For instance, Chow et al (2006) point out some of the difficulties in measuring NFPI: difficulty to measure accurately, efficiently and in a timely fashion; and non-financial measures are normally ambiguous. Nevertheless, traditional financial measures that were appropriate for the industrial era are not suitable to address the challenges of developing the skills and competencies that organisations require in a knowledge-based economy (for e.g. Guthrie, 2001; Pablos, 2003; Tan, Plowman, & Hancock, 2007; Teece, 1998; van der Meer-Kooistra & Zijlstra, 2001). Therefore, several scholars recommended the use of both financial and non-financial information together and recommended that they should be viewed as complementary to each other (Chow & van der Stede, 2006; Uyar, 2009).

3. Various performance measurement frameworks

This section briefly provides a review of various performance measurement frameworks that could include both financial and NFPI.

The following brief review starts from the early 1990s, when frameworks that were implemented to overcome the limitations of financial accounting-based measures in the knowledge-based environments (Chow & van der Stede, 2006). We find that much of this research presents these NFPI frameworks as functional in nature. There was little research which explores: how these frameworks are used by managers to interpret, create and work with NFPI within organisational settings. Many of these frameworks aimed to synthesize the financial and non-financial aspects of an organisation. These frameworks did not show managers how to mobilise non-financial resources to achieve improved organisational performance, but helped only in keeping track of the organisation's progress similar to financial statements.

A widely used and cited framework (Marr & Schuima, 2003) is the **Balanced Scorecard** developed by Kaplan and Norton (1992). This has four different perspectives (i.e. financial, customer, internal processes and learning and growth). The BSC is an internal management tool that integrated financial and non-financial strategic measures in a cause-and-effect relationship. The measures of internal business processes lead to measures of the customer

perspective leading to financial measures (Nørreklit, 2003). The drawback of BSC was that it assumed causality, and had an expectation that non-financial measures will predict financial results, which was then expected to yield a feed-forward control system (Lord, Shanahan, & Gage, 2005). Nørreklit (2003) challenged this notion and argued that there is no cause-and-effect relationship between the suggested areas of measurement in the BSC.

The Skandia Group published an IC supplement to its Annual Report in 1995 (Sveiby, 1997). The stated aim was to increase understanding and support for IC within the company. The management tool was called '**The Skandia Navigator**', purpose was to "navigating" into the future and thus create renewal and development of the organisation (Roy, 1999). Value creation of the organisation was conceptualised along five focus areas (i.e. financial, customer, process, human and renewal and development focus). These supplements to the external financial accounting statements communicated not only numbers, but also stories and illustrations about the challenges facing the firm. Skandia navigator did not 'measure' the size of IC, but was a credible, cohesive value story of IC and help generate value for the future (Mouritsen et al., 2001). However, there is no indication as to which IC measures are required to increase, decrease or remain the same, and no link to business strategy was found (Dumay, 2008). This makes it difficult to understand the items of IC that should be monitored (Bontis, 2001). The Skandia Navigator was built on the assumption of cause-effect relationship between IC.

The Danish Ministry of Science, Technology and Innovation (DMSTI) developed a framework for **IC statement** with the co-operation of researchers, companies, industry organisations, consultants and civil servants in the year 2000. The purpose IC statements was to identify the knowledge management strategy of an organisation and to communicate it to both internal and external stakeholders about how a company generated value (Mouritsen et al., 2003). The framework had four elements (i.e. knowledge narrative, management challenges, initiatives and indicators) that together provide an overall view of the firm's knowledge management process. However, several researchers state that the IC statement framework takes a static view of organisational identity of 'who we are', but does not talk about how the organisational identity needs to change in order to survive in the long run (Dumay, 2008; Kjaergaard, 2003).

The **Intangible Asset Monitor (IAM)** identify the growing differences between a firm's market and book values. Sveiby (2002) claimed that monetary measures should be discarded as a measure of human effort. Also, conventional financial accounting system should be complimented by a system of non-financial knowledge flows that used different metrics (Bontis et al., 1999). This was a one page report that could be complimented with narratives. Three categories of intangible assets (i.e. external structure, internal structure and competence of people) are used for three measurement categories (i.e. indicators, growth and renewal, efficiency and stability). The IAM framework is similar to the BSC and argues that by investing in the intangible assets, value creation or financial outcome will follow (Sveiby, 2002). Similar to the BSC, the drawback of the IAM is that it also assumes that value creation flows from investment in IC in a direct cause and effect relationship.

The basis of **Meritum Schema (MS)** was to report on the activities of the firm to develop, maintain and manage its IC (Meritum Project, 2002). It focuses on the connectivity between the elements of IC (i.e. human, structural and relational capital), and is made up of three parts (i.e., vision of the firm, a summary of intangible resources and activities, and indicators).

The drawback of MS is that developing IC is seen as a straight-line process that has not been tested in practice. The process is to identify strategically valuable intangibles, measure these intangibles and then take actions (Bukh & Johanson, 2003). However, Johanson et al. (2001) argue that development of IC measurement and reporting systems is an incremental learning experience with a trial and error component.

Strategic Business Models (SBM) is a framework developed by researchers such as Kaplan and Norton (2000, 2003) to understand how organisational resources translate to value by visually mapping the causal relationship. It is based on the BSC and contains outcome measures and performance drivers that link intangible assets to shareholder value creation through four interrelated perspectives similar to BSC. Nevertheless, several critics claimed that the relationships in the SBM are similar to the BSC in that they are logical rather than causal (Nørreklit, 2000, 2003). Also, Marr et al (2004) criticise that there is ambiguity in the relationship between resources and organisational performance, which makes it difficult to identify how individual resource contribute to success without taking into account the interdependencies with other assets.

In Australia, the Society for Knowledge Economics (SKE) developed a framework called **Extended Performance Account (EPA)** as a guide to better manage, measure, and report about knowledge intensive organisational resources (SKE, 2005). The idea of developing this report was to ‘make visible’ the often overlooked, taken for granted knowledge intensive resources, thus creating new opportunities for management intervention and provide financial valuation (SKE, 2005). The EPA was to compliment the existing three financial accounting statements and therefore was the ‘fourth’ account that was forward looking, simple in structure and strategic in nature. The claim that EPA would provide useful information was backed up by several studies in different countries. The major drawback of the EPA was it was only a snapshot of the ‘value creating resources’ that was intended for external reporting.

In summary, several studies agree on the need for a non-financial performance measurement framework (e.g., Johnston, Brignall, & Fitzgerald, 2002; Kaplan & Norton, 1992, 1996a; Lingle & Schiemann, 1996). This is because from the functional perspective these are considered to perform the role of providing a ‘balanced picture’ of the organisation’s key performance dimensions. All the frameworks presented above reflect a functional perspective presuming there is a cause-and-effect relationship between the various non-financial resources.

4. How do organisations mobilise NFPI?

This section introduces the literature that explores how managers and organisations use and mobilise NFPI from an in-action perspective which focuses on what (Ac)counting and managers actually do in practice.

4.1 NFPI from an in-action perspective

The adage ‘what gets measured gets managed’ seems to argue strongly for more and different forms of measurements – both financial and non-financial (Catusus et al., 2007). In a similar vein, Otley’s (2003, p. 319) remarked ‘what gets measured generally gets done. And what is not measured may suffer in comparison’. This point towards measurement as an important aspect of management action. However, it is argued that more measurement, does not necessarily lead to better management (Catusus et al., 2007). Measurement could well be considered as the first step towards management, and growth and value creation do not come

automatically with measurement, but instead a set of practices have to be ‘mobilised’ within organisations (Mouritsen, 1998).

Metaphorically stated, NFPI measures serve as ‘beacons’ for managers. However, just as the ‘beacon’ is not enough to reach the destination, measuring NFPI alone is not sufficient for improved organisational performance. Thus, while measurement supports those issues that are already considered important in the organisation, it is not enough to fuel the organisation into acting (Catusus et al., 2007). That is, information obtained from measurements has to be mobilised in order to be managed.

Also, Catusus et al., (2007, p. 509) define ‘mobilising’ as the process of moving an organisation from a state of passiveness to a state of activeness: to mobilise is to marshal resources (of all kinds) to promote acting. Mobilising is the act of summoning attention, resources and strategies for acting (i.e., directing attention to what is being done). In order to manage performance it is necessary to look beyond measurement of performance, and be able to understand the relationships between measurement on the one side and operational activities, strategies and context on the other (Otley, 1994, 1999).

To explore relevant research from an in-action perspective, we propose the following four questions about management action and NFPI.

1. How does management mobilise NFPI collected in order to transform them into management activities?
2. How well can NFPI collected be used, where can they be used and could the managers face any barriers while trying to use NFPI?
3. Are there any complexities that management face when the NFPI are being mobilised?
4. Are there situations when non-financial information could unfold into organisational practice?

These questions are relevant to organisational managers as they constantly mobilise NFPI and therefore prior literature is examined to provide insights into these questions. The four subsections below attempt to answer each of the above four questions.

4.2 NFPI and strategy

Several studies have examined the implication of the use of different NFPI frameworks on a firm's strategy. For instance, Noah & Wayne (1999) probed the implications of the use of NFPI and BSC approaches to budgeting and financial planning. They argued that management could use NFPI, via scorecards, as an integrated measurement tool with lagging indicators to describe financial performance and leading indicators to forecast future performance. Thus, Noah & Wayne (1999) contended that strategy could be clarified based on which business units could develop budgets to achieve their strategic initiatives.

Kaplan and Norton (2004) suggest the use of strategy maps to measure NFPI and claimed the value of intangible assets is about how they are related to organisation's strategy. They asserted that if the company had a 'sound strategy', and if the intangible assets are aligned with that strategy, then the assets will create value for the organisation. Kaplan & Norton (2004) also claimed that organisations could use strategy maps to provide employees with an understanding of how their jobs are linked to the overall objective of the organisation, enabling them to work in a coordinated, collaborative fashion towards the company's desired goals (Kaplan & Norton, 2000, p.168). However, this study prescribes the use of strategy maps for implementation of strategy within an organisation from a functional perspective; it does not use empirical data or explain how the measurement highlighted by these strategy maps can be used in practice.

Whilst, Chenhall (2005) highlighted how the information provided in strategic performance measurement systems (SPMS) effect desired organisational outcomes by providing information on the value chain linkages between operations and strategic outcomes. The study used empirical data collected using a survey questionnaire of senior managers. The findings were that SPMS including non-financial measures improved the strategic competitiveness of organisations if they focus on how goals, strategies and operations are connected. Again, this study fits in the functional perspective tradition, which proffers that performance measures provide cause-effect linkages between operations and organisation's strategy.

Several other empirical studies have also attempted to show the cause-effect relationship between strategy and performance measures and examined the use of different performance measurement frameworks. For instance, Roberts (1994) envisaged the integration of strategy

with performance measures and argued that management control frameworks could integrate various planning, control and reward systems containing more NFPI measures must be adopted. On a similar note, Decoene and Bruggeman (2006) claim that alignment between NFPI measures and strategy requires active involvement of employees and executives by compensation plans linked to NFPI measures. Using information from US electronic companies, Sim & Koh (2001) showed that manufacturing companies that strategically link their corporate goals to their performance measurement system, performed better than those that did not.

Also, according to Hass et al. (2005) performance measures tied to strategic plans aid organisations in developing the strategic plan, analysing and achieving departmental and corporate objectives, monitoring operations, charting progress towards goals, and evaluating employees and suppliers. McAdam & Bailie (2002) argued that closer links between performance measures and business strategy is essential. Neely et al., (1994) claimed that the key factors of alignment is to have consistency in both decision making and action.

There have been an increasing number of organisations measuring NFPI such as customer loyalty and employee satisfaction, and there has been evidence that a link between strategy and NFPI measures is necessary. However, Ittner and Larcker (2003) claim that in general organisations have failed to relate NFPI to their strategic goals. Organisations that fail to identify, analyse and act on the NFPI and connect them to strategies could end up in misallocating their resources and rewarding ineffective performance.

The above prior studies have asserted a link between strategy and NFPI measures and conclude that this link is essential for improved organisational performance. However, these studies have not examined from an in-action perspective of using NFPI measures and show how NFPI is being mobilised by managers and what effect it has on strategy (e.g. how NFPI is used to implement organisational strategy or how is NFPI involved in mediating strategy).

4.3 Use of NFPI in organisations

This sub-section discusses prior literature that has examined the use of NFPI in organisations. It specifically examines the barriers management face in using NFPI measures and highlights findings where NFPI measures have been used.

Prior literature suggests that there are barriers in using NFPI. Management can use NFPI to evaluate, control, budget, motivate, promote, celebrate, learn and improve (Behn, 2003). It was believed that measures on non-financial resources are crucial; few organisations appear to be (Ac)counting for non-financial resources, and even if they did, many did not use NFPI (Stivers et al., 1998). Managers do not use the information because either the information may be irrelevant or the managers do not understand their relevance and use (Manoochehri, 1999). Users of the information must be educated on the importance of NFPI. The manner in which NFPI data is acquired, analysed, interpreted, communicated and acted upon have an impact on performance of the organisation (Bourne, et al., 2005).

There have been several studies that have examined the process of design and implementation of NFPI and its effectiveness (Bititci, 1995; Kaplan & Norton, 1996b), but empirical studies that examined the use of these measurement systems are uncommon (Bourne, et al., 2005). The process of collecting NFPI would be wasted if performance data produced does not inform management action (Neely & Bourne, 2000). Even as organisations increase their time on obtaining various NFPI, they struggled to transform their performance measures into actions (Johnston, et al., 2002), which Pfeffer and Sutton (1999) call as the 'knowing-doing gap', Cohen (1998) refer to as 'performance paradox' and Stivers et al. (1998) call as 'measurement-use gap'. It should be understood that neither the act of measuring nor the resulting data accomplishes anything in itself; only when someone uses this information to inform action in some way do they accomplish something (Behn, 2003). Collecting NFPI is not an end in itself, but is the beginning of the process of management action.

However, Stivers et al. (1998) highlight NFPI in the category of employee involvement (such as employee satisfaction, employee turnover, morale and corporate culture) are used only by 40% of the organisations and only about 25% of them use information on customer service, innovation and goal achievement.

Several reasons for the non-use of NFPI for managers' action will now be discussed. First, Stivers et al. (1998) point out that NFPI are 'softer' and management finds it difficult to understand and convert these into actions. Second, there are difficulties in assessing metrics that capture desired actions and outcomes (Cavalluzzo & Ittner, 2004). Third, NFPI is not uniform with multiple categories perceived as not equally useful (León, Gil, & Aldecoa,

2008). Fourth, there are problems in weighing NFPI accurately and appropriately together with financial measures (Luft, 2009). Finally, users are unsure about appropriate weights to assign to NFPI (Malina & Selto, 2004).

Though there is a limited use of NFPI, prior literature indicates areas where NFPI has been used. The actual *use* of performance measures is vital. Meekings (1995) claim that the organisation must use measures properly, not only to deliver performance improvement, but also to bring a cultural change within the organisation. Aguilar (2003) indicates that performance measures must be an integral part of the organisation's culture and reward system, while Kaplan and Norton (2000b) suggest that NFPI could be an instrument of cultural and strategic change.

Ittner et al. (2003) suggest that organisations could implement compensation plans that use non-financial metrics to assess a manager's performance. In a previous study, Ittner et al. (1997) examined the use of NFPI in compensation plans (e.g. CEO's bonus) and found evidence that firms following innovation oriented strategy use more non-financial measures in executive compensation. Similarly, Sliwka (2001) indicated that NFPI is used in executive compensation when the importance of the strategic activity is sufficiently large.

However, there have been studies with contradicting results about the use of NFPI in determining remuneration and rewards. While Roberts (1994) claim that it is important that performance measures of managers stress those things that are crucial to the organisation, Ittner et al. (2003) found that organisations use financial measures as the primary determinant of bonuses. On the contrary, Wines (1996) claimed that organisations are developing executive performance measures not based on financial gains, but on long-range strategy goals (such as new products, retaining customers, investing in technology, improving organisation's public image) and applying these measures in annual bonuses.

Several studies suggest that if a NFPI framework such as BSC is communicated, it could motivate and influence lower-level managers to drive their actions towards company strategy resulting in improved financial performance. On the other hand, flaws in the design and shortcomings in communication could adversely affect the relationship between top and middle managers (Malina & Selto, 2001). Also, Atkinson (1998) claims that it is necessary to communicate organisation objectives to decision makers and align their activities with those objectives. This could be accomplished by using NFPI measures to focus attention on

variables that are critical to the organisation's success and to reward individuals for those performances (Atkinson, 1998).

In summary, the above prior literature in this sub-section suggests that, in spite of realising the importance of NFPI, managers have been using NFPI sparingly. The next section highlights several complexities faced by managers in using NFPI from relevant prior literature.

4.4 Complexities of using NFPI

This sub-section investigates what makes performance measures, in particular NFPI difficult for managers to use. For the purpose of this sub-section, IC is used to illustrate the complexities involved in the working and usage of NFPI.

IC frameworks tend to display NFPI in a simple to use format. Also, these frameworks use a variety of performance measures. However, Vakkuri & Meklin (2006) argue that the dynamic interaction between performance measurement systems and their use is neglected. They claim that there is ambiguity in the use of performance measures, since it (performance measures) has limitations, conflicting interests, uncertainties, paradoxes, and ambivalences.

In an IC framework, the three elements (i.e., human, structural and relational capital) play a central, yet ambiguous, role in forming the characters of IC. Prior research suggests that this division of elements of IC has a formative role in developing ideas about the consequences of IC. However, the character of this formative role is still embryonic, since either it (IC literature) focuses on types of managerial use of IC information (e.g. B. Catusus & Grojer, 2006), on the ambiguous relationships between IC and organisational outcomes, such as innovation (Cuganesan, 2005), or on the relationships between IC information and knowledge management strategies (Mouritsen et al., 2002). However, little research has focused on how actors (e.g. managers and employees) make sense of the three elements and their relationships (Mouritsen, 2006).

Previous literature has suggested that elements of IC tend to correlate positively with each other. For instance, the performance of human capital influences the performance of structural capital and relational capital, and eventually the interactions between these elements correlate positively with financial performance (e.g: Bontis, 1998; 2004; Chen et al., 2005; Namasivayam & Denizci, 2006; Wang & Chang, 2005). These studies suggest that

relations are positive and it could be assumed that maximisation of all elements would be financially preferable. However, the problem with such findings is that they generalise and rationalise the performance of IC and make its relation to practice less pertinent. The causality from the functionalist perspective is easy, because it omits the frictions that managers experience when having to deal with IC.

Several studies have found that elements of IC might be compromised between each other. For instance, organisations tend to focus on one type of IC, since multiple forms of IC could be unproductive (e.g. Youndt et al., 2004). At times investment in only one element could lead to increased organisational performance, but excess investment in an element could have a negative effect on performance (e.g. Huang & Liu, 2005). Other times firms focus on only those elements that are relevant for their value creation process (e.g. Vergauwen et al., 2007). However, in spite of compromising investment on different IC elements, these studies state that to create a superior performance, it is essential to co-ordinate the three components of IC of a firm.

Several case based studies found that there could be multiple translations between the elements of IC. Cuganesan (2005) investigated an Australian financial services firm and found that inter-relationships between different IC elements and value creation to be pluralistic and temporally contingent. Also, Cuganesan (2005) highlighted that IC had multiple relations of cause-and-effect in a one-to-one or one-to-many manner, which meant that there is a necessity for explanation of how IC resources 'entangle' and act productively (Mouritsen, 2004). Similarly, Beuno et al., (2006) showed that IC is complex similar to 'creative neuron'. It is a complex adaptive association of intangible elements whose interactions give rise to value creating processes in organisations.

However, Dumay (2009, p.190) identified IC as a complex phenomenon and argued that trying to 'fit' existing IC frameworks to gather information on IC does not have relevance in understanding the 'value-creation process'. Also, Jhunjhunwala (2009, p.211) argued that popular IC frameworks tend to only measure individual elements. Murthy and Mouritsen (2011, forthcoming) traced the relationship between different IC elements and established that the elements have a complex interrelationship among each other and also depend on financial capital

These studies of IC (an example of NFPI) highlight the complex nature and entanglement of different elements and focus attention on the problems that managers may face problems while trying to use the elements of IC (i.e. HC, RC and SC). Therefore this makes it difficult for them (managers) to find a relationship between NFPI and financial performance. However, these studies still do not provide intelligibility on how such complex IC elements are used by managers.

4.5 NFPI and organisational practice

As demonstrated in the previous sub-section, NFPI systems are complex and managers find it difficult to understand these complexities. This sub-section examines relevant prior literature to provide an understanding of the ways in which organisations use NFPI to shape organisational practice. Organisations need to mobilise a set of mechanisms to convert NFPI to achieve performance (Mouritsen, 1998). Though unable to provide clarity, NFPI could be used to intervene and allows action to be performed (Mouritsen, 2004). When being used, NFPI can change management practices and Vaivio (1999) examines how the use of the NFPI effects organisational change and reshapes organisational reality.

Prior literature has pointed out that NFPI has been important for management accounting change. For instance, Hopwood (1987) highlighted with case examples the ways in which non-calculative accounting changes became a powerful means for organisational intervention and played an active role in shaping organisational developments. Bhimani (1993) stated that internal accounting mechanisms including non-financial statistical information could affect and alter organisational possibilities even though shaped by incidents that are unanticipated and unplanned. Management accounting changes involving non-financial factors (i.e., categorised as motivators, facilitators and catalysts) combine and interact to provide the 'real world' circumstances resulting in practical developments within the firm (Innes & Mitchell, 1990).

Vaivio (1999) found that by systematising NFPI into regular reports, management was able to integrate the NFPI into the company's management process and turned them into organisationally constitutive artefacts. NFPI measures can be viewed as reflective, diagnostic instruments that had active and constitutive role to play in the management process. In another study, Ezzamel et al. (2004) highlighted how the inscriptions of new management

accounting measures (including non-financial measures) were used to create spaces of representation by developing an empowered workforce and harmonious industrial relations.

In spite of its importance, studies have also shown that the use of NFPI for organisational change does not come easy. For example, Scapens & Roberts (1993) showed how the introduction of new management accounting change in different divisions of an organisation (that required both financial and non-financial information) resulted in resistance within the organisation. Similarly, Ezzamel et al. (2004) demonstrated how following shifts in market conditions and ownership, several attempts by senior management to introduce change initiatives (including accounting techniques) were interpreted by employees as intensifying labour by reducing head count and thus resisted the change initiatives. The above are but a few illustrations from the extant management accounting literature that demonstrate how NFPI can be used to bring organisational change.

To highlight this point several examples from the IC literature are used. The following recent studies focus on a single organisation and illustrate how IC was used to change organisational reality. These studies highlight the ways in which different NFPI eventually unfold into organisational practice.

For instance, Cuganesan et al. (2007) conducted a case study and highlighted how ambiguity in IC discourse allowed senior executives and managers (i.e., discourse producers) greater flexibility in connecting to the interest of discourse consumers (e.g. practice managers, funding agencies, community) and succeed in shaping material practice. The study highlighted how the construction of IC could make IC more attractive to discourse consumers. Eventually IC discourse was taken up by the discourse consumers when previously it was discarded. However, while this study showed how IC was found useful to shape practices of managers and external agents, it did not show how IC discourse was used to influence the employees and shape their actions.

In another study, Cuganesan & Dumay (2009) highlighted the ability of visualisation techniques to render visible the complexity of IC and make relationships between IC elements and value creation accessible to managers seeking to act on IC. By collecting narratives from employees and getting them to self-index the narratives on narrative software, they were able to connect various IC elements to one another and showed that this could be used for resource mobilisation and managerial interventions. This study is useful to

understand the first step involved in translating NFPI into organisational practice, since it shows how employees make sense of IC, which could be inscribed in electronic form that can be stored and mobilised later by management. However, the study does not extend further to show how the information thus collected could be used for management intervention or to change organisational practice.

Dumay (2008) examined the use of narrative in IC disclosure and the subsequent impact on the social structure of an organisation. This case study of the management of NSW Lands used external IC reports to create an awareness of IC and the reporting of IC elements created new meanings challenging old ways of doing things. The Dumay (2008) study highlighted how the organisation used narratives that became routinized in the activities of management. Also, the narratives were not only used to provide an understanding of the IC measures and the reasoning behind the use of IC, but to provide a mechanism that engendered further management action and subsequent organisational change.

In an earlier case study conducted by Dumay & Guthrie (2007), they highlighted how an environmental disturbance (i.e. ageing workforce) acted as a catalyst for the take-up of IC by organisational members. This resulted in transforming management and accounting practices from a financial focus to incorporate a long-term non-financial focus based on accounting for IC, especially human capital. The discourse based on IC enabled a more equitable and targeted allocation of financial resources and accounting for IC informed management action. Thus this study highlighted how IC penetrated the organisation and became embedded in the organisational discourse and practice. However, similar to the Dumay (2008) study this paper also ignores the views of the employees and shows bias towards managers who were instrumental in mobilising IC discourse within the organisation.

However, Justesen & Mouritsen (2009) analysed relations among different kinds of visualisation (NFPI) in annual reports and traced their interaction with activities within the firm such as marketing, sales, designing, planning and operations. They found that visual aids act as mediators that cross boundaries between accounting, selling and production activities. When combined with accounting calculations, the study highlights how visualisations produced new space and gained strength thus producing an organisational practice. Here, NFPI was found to be used by the organisation to manage and persuade its audience, to

establish referents within the firm and to influence decision making in the departments of the firm.

Another example of NFPI is the social and environmental accounting (SEA) literature. Adams & Larrinaga-Gonzalez (2007) claimed that the SEA literature has paid scant attention to the impact of practice of SEA on organisations and their participants and they called for future research engaging with organisations. Prior to their study, a few researchers examined internal SEA processes and the impact it had on organisational change (e.g. Larrinaga-Gonzalez et al., 2001; Adams, 1999; O'Dwyer, 2002, 2003, 2005; Unerman & Bennett, 2004). It was found that SEA was used to negotiate and control the environmental agenda within the organisation; to promote a broad society-centered conception; and to engage in stakeholder dialogue. In spite of calls from these researchers, only a few studies have examined the impact of SEA to change in organisational practice.

For instance, Adams & McNicholas (2007) conducted an action research in a government-owned water authority, to examine the hurdles faced by the organisation in developing an internal sustainability report and the processes towards organisational change. It was the presence of researchers and their engagement that had resulted in the integration of sustainability issues into organisational planning and decision-making and facilitated the embedding of sustainability values. Otherwise, the study found a number of impediments which previously resulted in resistance from managers and employees. Similarly, based on his involvement in the development of social book-keeping in an organisation, Dey (2007) highlighted that social accounting intervention was significant in bringing about organisational change, but the change was in an unexpected and undesirable way. Nevertheless, SEA intervention appears to be influential when aligned with substantive changes in the organisation itself.

Ball (2007) demonstrated how social movement pressures combined with an opportunity to invest in technology for ecological modernisation of waste management were catalytic in re-framing the organisation's earlier resistance. In a study on social accounting, Johansen (2008) found that when the bank in Denmark introduced a 'self-management' program to develop autonomous employee and empower them, instead it silenced employees' voice which affected work, education and family.

In spite of repeated calls for research on the impact of social accounting on management and organisational practice, this area has still been under researched. This paper supports Ball & Craig's (2010) claim that researchers should pay greater attention to the interests, beliefs, and activities of managers in the organisations under scrutiny. Researchers should recognise the pursuit of distinctive interests of managers and attention should be directed to determining which power and interests are shaping the change.

5. Summary and conclusion

To summarise, the previous literature tended to examine NFPI from a functional perspective and ignored an in-action perspective of NFPI. Our review of literature highlighted the following points. First, the literature indicates that there is a correlation between NFPI and organisational performance. However, these are statistical correlations that do not examine what it means for managers to use the measures in practice. Second, prior studies assert that there is a direct link between NFPI and organisational performance and that measuring NFPI would lead to financial performance. Nevertheless, several studies highlighted that the link is complex and does not provide clarity to what managers understand in the relationship between NFPI and financial performance.

Third, it was found that in spite of realising the importance of NFPI, managers have been using NFPI sparingly, since they had deficient knowledge of NFPI. Also, the managers were not able to realise how their actions impacted performance measures. Notwithstanding this, several studies suggest that NFPI have been used to reward and remunerate employees, as a communication device, for executive compensation and to motivate employees.

Fourth, several studies of IC (an example of NFPI) highlight the complex nature and entanglement of different elements and focus attention on the problems that managers may face. Nonetheless, these studies do not provide clarity on how such complex IC elements are used by managers in practice. Fifth, prior literature indicated that NFPI was used to bring organisational change in spite of resistance from employees. But prior research has ignored the interests, beliefs, and activities of managers, which is necessary to determine the powers and interests that shape organisational change.

Our study makes several contributions to the literature. First, it presents an overview of the NFPI research and focuses on the possibilities for future research. Second, it finds that many of the prior studies were from a functionalist perspective and argues for a more in-action practical perspective. Third, the prior literature largely indicates that there is an association between NFPI and improved organisational financial performance. The paper finds that the success of this association depends on the way NFPI is used and managed within the organisation. Fourth, the literature indicates several roles performed by NFPI in running an organisation, which includes translating strategy into desired behaviours and results, communicating expectations, monitoring progress, providing feedback, and motivating employees through performance-based rewards and incentives.

This research finds evidence that much of the accounting literature on NFPI adopts and reflects a functional perspective. That is accounting based performance measurement systems are a notable structural feature of management accounting control systems. At a practical level these systems consist of accounting calculations and performance indicators which are designed to capture key aspects of organisational performance. These systems are implemented in the belief that it will connect individual activity with organisational objectives. In this sense these accounting based performance measurement systems are a primary organisational activity to link individual work activity to organisational performance objectives. Hence, within this perspective it is assumed that accounting information will inform individual action, decision making and contribute to improved organisational performance.

Just like any other studies, this study also comes with few limitations. First, this is a conceptual study that examines prior literature on non-financial information. Second, the study is in particular restricted to illustrations from the intellectual capital and social and environmental accounting literature. Third, it should be acknowledged we do not provide our own empirical evidence to back-up the findings of this study.

Studies that examine the manner in which NFPI could be mobilised and translated into organisational performance are rare. Therefore, in future the focus of NFPI research could be from an in-action perspective in order to understand how managers use and mobilise NFPI in day-to-day practice.

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