

Effects of non-financial performance management and risk disclosures on not-for-profit financial vulnerability: Evidence from the Australian aged care not-for-profit sector

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Abstract

Research Questions: To what extent are NFPs in the Australian aged care sector engage in non-financial performance and risk disclosures in their annual reports? What is the effect of non-financial performance and risk disclosures on the extent of financial vulnerability (FV)?

Motivation: Research on measuring and understanding the determinants of FV or financial crisis within the not-for-profit (NFP) sector is both scant and limited. To address these gaps in the literature, the paper investigates the extent to which NFPs in the Australian aged care sector make voluntary disclosures related to non-financial performance management (NFPM) and risk information disclosures and examined the impact of NFPM and risk disclosures on the extent of FV in the Australian aged care NFP sector.

Idea: The NFPM and risk information disclosures expected to be negatively associated with FV or financial crisis.

Data: Data for the study is taken from publicly available database, the Australian Charities and Not-for-Profit Commission website, and quantitative content analysis was conducted to measure the extent of non-financial disclosures using data collected from the audited annual reports issued by 200 aged care NFPs for the years 2018 and 2019.

Tools: The dependent variable of this study is the extent of FV that has been measured using the proposed multi-dimensional FV framework. Descriptive statistics, such as, provides mean, median, standard deviation, maximum and minimum values to recognise nature and extent of NFPM and risk information disclosures. For the inferential statistics, the study analyses the research model using multiple regression analysis.

Findings: Panel regression results indicate inadequate disclosures of NFPM, and risk information are associated with the extent of FV of NFPs in the Australian aged care sector.

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The study identifies that only beneficial reporting, such as NFPM reporting and beneficial risk information, helps reduce the extent of FV in the NFP sector.

Contribution: the study provides novel insights into the relationship between voluntary non-financial information disclosures (i.e., disclosures of NFPM and risk information) and the extent of FV in the NFP sector. Moreover, it provides a key contribution from the NFP context by recognising a positive and significant association between voluntary risk information reporting and the extent of FV in the NFP sector.

Keywords: not-for-profit organisations, Australian aged care sector, financial vulnerability, non-financial performance measurement disclosures, risk management disclosures

JEL Codes: M41

1. Introduction

Not-for-profit organisations (NFPs) in the human services area are critical vehicles through which a nation can meet its social service obligations and deliver essential services to some of the most vulnerable people in society. However, NFPs are facing increasing threats to delivering these services amidst declining public and non-market resources (e.g., donations) and escalating social service needs (Gilchrist 2014; Hettiarachchi, 2023). The aged care service sector in Australia is heavily dependent on NFPs, and the ever-mounting service delivery and financial pressures on the sector became clearly evident in the recent Final Report from the Royal Commission into Aged Care Quality and Safety (RCACQS 2021). The Royal Commission not only revealed the poor quality of service delivery in the Australian aged care sector, but it also cited the financial vulnerability (FV) of service providers as being a major ongoing threat for the aged care sector. While FV has been defined in different ways (Andres-Alonso *et al.*, 2016), in general NFPs are seen to be financially vulnerable when their resources and capabilities constrain them from carrying out their ongoing operations due to poor financial health.

However, FV has scarcely been studied in the NFP sector when compared to the broad literature for the for-profit sector (Andres-Alonso *et al.*, 2015; Cortis & Lee, 2019; Garcia-Rodriguez *et al.*, 2021).

Furthermore, empirical evidence on drivers of FV among NFPs is vital for developing more innovative and effective strategies for both financial and human resource management. In addition, few NFP scholars have studied the drivers of FV in the NFP sector (Prentice, 2016b) and little research has been conducted for the Australian context (Cortis & Lee, 2019). More specifically, no studies have been conducted to identify factors affecting FV in the Australian aged care NFP sector. Studies from the Australian context is important because identification of

FV in the NFP sector is subsector and country specific (Hager, 2001; Prentice, 2016b; Andres-Alonso *et al.*, 2016). Prior studies have shown that information disclosure assists in attracting a higher level of donations and funding (Parsons, 2003; Saxton & Zhuang, 2013; Trussel & Parsons, 2007; van der Heijden, 2013). Recently, scholars have examined the application of performance measurement within the NFP sector (Boateng *et al.*, 2016; Campbell & Lambright 2016; Lee & Nowell 2015) but they have not examined the impact of NFPM disclosures on the extent of FV in the NFP sector. In addition, disclosures on RM information have been given less emphasis (Abdullah *et al.*, 2015; Abdullah *et al.*, 2017), and disclosure of risks in the NFP sector is less well developed than in for-profit organisations (Arshad *et al.*, 2016). To address the aforementioned gap in the literature, the study examines the impact of non-financial disclosures on the extent of FV, with special focus on performance and risk disclosures by NFPs in the Australian aged care sector. More specifically, our study attempts to contribute to the extant literature by addressing the following research questions:

- (1) To what extent are NFPs in the Australian aged care sector engage in non-financial performance and risk disclosures in their annual reports?
- (2) What is the effect of non-financial performance and risk disclosures on the extent of financial vulnerability?

The present study draws insights from two major theories, resource dependency theory (RDT) and signalling theory, to identify the impact of non-financial performance and risk disclosures on the extent of FV in the Australian aged care NFP sector. In this study, signalling theory is applied to understand how non-financial disclosures give positive signals to attract financial resources from funders to reduce the level of FV in the Australian aged care NFP sector. Prior studies have shown that information disclosure assists in attracting a higher level of donations and funding (Parsons, 2003; Saxton & Zhuang, 2013; Trussel & Parsons, 2008; van der Heijden, 2013). Therefore, RDT is used to understand how non-financial disclosures assist to attract resources from the external environment to reduce resource dependency.

The present study utilised quantitative content analysis of 200 audited annual reports issued for the two consecutive years 2018 and 2019 by aged care service NFPs registered with the Australian Charities and Not-for-Profit Commission (ACNC). Panel regression results indicate inadequate disclosures of NFPM, and risk information are associated with the extent of FV of NFPs in the Australian aged care sector. Through the use of signalling and RDT in combination the study identifies that not all types of non-financial information disclosures (i.e., some are beneficial and some harmful) enable NFPs to attract resources from the competitive environment. Instead, only beneficial reporting, such as NFPM reporting and beneficial risk information (where NFPs perceive risk as an opportunity), helps reduce the extent of FV in the NFP sector.

2. NFP financial vulnerability

The FV concept in the NFP sector has received less scholarly attention than in the for-profit sector (Andres-Alonso *et al.*, 2015; Prentice, 2016b; Cortis & Lee, 2019) and is only at the developing stage (Andres-Alonso *et al.*, 2015, 2016). More specifically, most prior scholars have attempted to find predictors of FV, and only a few scholars have defined the term FV in the NFP sector. As a result, “even the definition of financial vulnerability is not clear among the scholars of the non-profit (i.e., NFP) sector” (Andres-Alonso *et al.*, 2015: 372). Tuckman and Chang (1991), as pioneers in developing the concept of FV in the NFP sector, explained that an entity is financially vulnerable if ‘it is likely to cut back its (program) service offerings immediately when it experiences a financial shock’ (p. 445), such as an economic downturn or the loss of a major donor.

Along with for-profit scholars, NFP scholars continue using financial measures to predict FV in the NFP sector. Financial measures help to understand the key signs of FV, which is an indicator of vulnerability (Zhai *et al.*, 2017). Tuckman and Chang (1991) were considered pioneers who evaluated NFP FV using four financial measures, and they introduced the theory of FV based on the bankruptcy theory used by Beaver (1966) and Altman (1968) for the for-profit sector. After Tuckman and Chang (1991), several scholars such as Greenlee and Trussel (2000); Hager (2001); Trussel (2002); Keating *et al.* (2005) introduced several financial measures to predict FV in the NFP sector. Bowman’s (2011) model is “the first comprehensive alternative in twenty years to the Tuckman and Chang model” (Bowman 2011, p. 39). The model goes further to consider two perspectives of NFP vulnerability, long-term and short-term. Following on from Bowman (2011), NFP scholars such as Ryan and Irvine (2012), Omar *et al.* (2013), and Andres-Alonso *et al.* (2015) have proposed multi-dimensional models to measure FV from different perspectives of vulnerability. To this point NFP scholars have agreed that FV can be predicted from different aspects of vulnerability. Nevertheless, the literature is unclear on which financial measures best capture each dimension in a multi-dimensional framework (Prentice, 2016a).

There is no doubt that identification of a universal set of financial measures as indicators of FV in the NFP sector is highly difficult, and instead any measurements used need to be country and sector specific. This would partly explain the lack of any formal regulatory guidelines for identifying FV comprehensively and reliably in Australia, especially any related to the aged care sector. Therefore, to recognise the signs of FV and the extent of FV in the NFP sector it is vital to identify and adopt a wider and more sector specific set of FV measurement tools, namely a multi-dimensional FV framework, FV index and FV scores. Echoing Hager (2001), Prentice (2016b) notes that “future studies should

focus on subsectors and even within subsectors” (p. 905) due to the diversity of the NFP sector.

3. Theory, background literature and hypotheses development

3.1 Voluntary disclosures on non-financial performance measures and FV in the NFP sector

RDT has been found useful for disclosure-related studies as the disclosure practices of an organisation are highly influenced by its resource dependence (Arshad *et al.*, 2013; Zainon *et al.*, 2014). NFPs are highly dependent on resources from the external environment and so look to satisfy the informational needs of their stakeholders (Irvine, 2002). RDT further covers external funding as an important resource, and voluntary disclosures help to attract more funding to the organisation. Also, based on signalling theory, NFPs provide positive signals to resource providers through reporting to attract resource providers, as the most salient stakeholders (Connolly & Hyndman, 2013), often decide whether to maintain or discontinue their support of a NFP based on disclosures. Further, it is evident that NFPs issue positive signals to funders through NFPM disclosure to attract resources, especially financial resources, from the competitive environment and thus to reduce resource dependency (Hyndman, 1990; Connolly & Hyndman, 2013).

Furthermore, it could be argued that “voluntary disclosure of performance information, possibly emphasising past performance and future plans, may enhance its attractiveness to existing and potential donors” (Connolly & Hyndman, 2004: 143). Likewise, Zimmermann and Stevens (2006) in their study of NFPs in South Carolina, USA, showed that external investors’ requirements are the most frequently identified reason for measuring performance. Campbell and Lambright (2016) stated that due to resource dependency, the reporting requirements developed by the financing authorities of NFPs play a significant role in defining performance in these organisations. Moreover, their study concluded that “many funders collected performance information to meet their funders’ requirements” (p.158), and such information includes the information on “program evaluations, outcome measurement, satisfaction surveys, or other tools” (p. 151). These funders want to decide whether to continue or discontinue their support to a particular NFP based on its performance or achievement of organisation goals (Yang *et al.*, 2017).

Further, funders rely on disclosures made in financial statements, especially those relevant to performance evaluation, to decide on their new or ongoing support of NFPs (Connolly & Hyndman, 2013), which increases interest and calls for more relevant and easier-to-understand performance disclosures of NFP activities (Campbell & Lambright, 2016). This trend is also driven by the NFP’s need to

diversify and strengthen its revenue base by seconding the support of traditional funding sources such as government agencies and attracting the attention of philanthropic bodies, private donors, social impact investors, and corporate partnerships (Froelich, 1999; Helmig *et al.*, 2014). Consequently, NFPs engage in voluntary disclosures on PM by providing relevant and reliable non-financial performance measures to attract more resources and improve their financial strength (Crisan & Dan, 2018). Moreover, competition for funding has become even more challenging in the NFP sector. In this context, NFPs are under pressure to validate their performance and demonstrate their social impact in the broader society in order to secure more funding opportunities (Lee & Nowell, 2015).

At the time of the current study, no study has examined the relationship between the extent of NFPM disclosure and the extent of FV in the NFP sector. However, prior studies related to the corporate sector have directly linked NFPM disclosures and organisational financial performance. For instance, Kolstad (2013) found that NFPM disclosure improves organisational transparency, eventually improving organisational financial performance. In contrast, some studies claim that disclosures related to poor performance (i.e., low customer satisfaction rates) harm organisational performance (Ittner & Larcker, 1997). Hoque and James (2000) also found a positive relationship between organisational performance and the enhanced use of various NFPM disclosures. Moreover, Hoque and Adams (2011) suggested that investors use NFPM disclosures to evaluate an organisation's long-term performance. Furthermore, Ittner (2008) confirms a significant positive relationship between customer satisfaction and financial performance. Finally, Omran *et al.* (2019) studied the association between NFPM disclosure and Australian manufacturing firms' financial performance and found a significant positive association. After considering these factors, the present study develops the second hypothesis based on RDT and signalling theory as follows:

H1: The extent of voluntary NFPM disclosures is negatively associated with FV.

3.2 Voluntary disclosures on risk information and FV in the NFP sector

Some of the prior studies in the business environment found an association between risk information disclosure and financial performance. Further, previous research regarding the relationship between voluntary risk information disclosure and firm value show mixed results in the corporate sector (Bokpin, 2013). Abdullah *et al.* (2017) mentioned that "effective risk management may affect the sustainability of the business and eventually may jeopardize investors' wealth" (p. 2). At the same time, prior research empirically proved that voluntary disclosures on risk information positively influenced firm value (Anam *et al.*, 2011; Vafaei *et al.*, 2011; Abdullah *et al.*, 2015).

Previous literature (Beretta & Bozzolan, 2004; Solomon *et al.*, 2000) suggested that voluntary disclosure of risk information could assist funders and other resource providers by making the potential risks and prospects clearer if they needed to rationalise their decision-making. Furthermore, Linsley and Shrivies (2006) found that organisations prefer to disclose more upside risk-related disclosures than downside risk-related disclosures. According to RDT, risk information disclosures attract funders, reducing the resource dependency of an organisation. From a signalling theory perspective, organisations send positive signals through beneficial risk information disclosures (i.e., NFPs perceive risk as an opportunity) to get positive feedback (i.e., more funding) from funders or resource providers in a competitive environment. For instance, Amir and Lev (1996) found that investors seek more meaningful RM reporting for their funding allocation decisions. When an organisation clearly marks the difference between voluntary disclosures related to beneficial risk (i.e., risk perceived as an opportunity) and harmful risk (i.e., risk perceived as a threat), it is expected that resource providers should be able to come to much better decisions on that organisations' risk related issues (Abdullah *et al.*, 2015). In contrast, Hassan *et al.* (2009) pointed out that voluntary disclosure of RM had a significant, negative impact on firm value in the Egyptian capital market. Therefore, the results are inconclusive and must be investigated, especially for the NFP context. Even though some studies argue a negative effect of voluntary risk information disclosure on financial performance in the corporate sector, the researcher contends from RDT and signalling theory that funders deciding whether to provide more funds to NFPs in Australia would appreciate increased voluntary disclosures of risk information. Furthermore, it is anticipated that aged care NFPs which disclose in-depth risk information, or any disclosure related to the risk faced by NFPs (i.e., any 'opportunity and prospect' or 'harm and threat' that may have occurred or will affect the NFP) will be able to reduce funder uncertainty which in turn reduces the level of FV. Therefore, this second hypothesis is proposed:

H2: The extent of voluntary risk information disclosures is negatively associated with FV.

4. Research design

The present study utilised quantitative content analysis of audited annual reports to collect the data. content analysis assists in developing themes from the raw data, and these themes should have separate identities (Krippendorff, 2004). The success of content analysis depends on the data coding (Hsieh & Shannon, 2005). Data coding is the process of transforming raw data into "analysable representation" (Krippendorff, 2004: 84) or "organise (organising) large quantities of text into much fewer content categories" (Hsieh & Shannon, 2005: 1285). Categories are "patterns or themes that are directly expressed in the text or are derived from it through analysis" (Hsieh & Shannon, 2005: 1285). Under quantitative content

analysis text data is coded into clear categories then described using statistical tools (Hsieh & Shannon, 2005).

Sample

The study uses a sample of 200 aged care NFPs registered with the ACNC. At the time of data collection (April 2020), there were 58,381 charities registered and regulated by the ACNC. Out of that 58,381 only 2203 NFPs were registered as aged care NFPs in ACNC data set, and these represent the total population of the current study. The population consists of 1377 small, 340 medium and 486 large, aged care NFPs. One of the data sources for this study is audited annual reports. However, the ACNC regulations do not require small NFPs to issue audited annual reports so all the small, aged care NFPs were eliminated from the total population because the necessary data was not available.

Further, although it is compulsory for medium NFPs to issue either reviewed or audited financial statements, only 225 of them had publicly reported audited financial statements for the two consecutive years of interest, namely 2018 and 2019. Likewise, even though all large NFPs must submit audited financial statements to the ACNC, some of the large NFPs do not issue annual reports so only 339 large, aged care NFPs had issued annual reports in addition to their audited financial reports. So even though the ACNC database includes 2203 NFPs that engage solely in aged care activities, only 564 NFPs issued both audited financial and annual reports for those two years. A sample size of 100–200 is considered appropriate for regression analysis (Hair *et al.*, 2006) and Hoelter (1983) suggests a sample size of between 100 and 200 for quantitative research. Hence, 200 aged care NFPs (medium, large, very large, and extra-large in ACNC terminology) were randomly selected from the remaining population (i.e., 564) to form the sample for the present study.

Moreover, the above process of selecting NFPs for the sample minimised any potential for selection bias, representing as it does approximately ten per cent of the initial total population. Data was collected from the audited annual reports of individual NFPs for two years, 2018 and 2019, which were the latest available at the time of data collection.

Research model

The dependent variable of the study is the extent of FV in the Australian aged care NFP sector, and the model includes two independent variables and two control variables:

$$EXT_{FVt} = \beta_0 + \beta_1 EXT_{NFPMit} + \beta_2 EXT_{RMit} + \beta_3 SIZEit + \beta_4 AGEit + \varepsilon$$

Definition and measurement of variables

Dependent variable (EXT_FV)

The dependent variable of this study is the extent of FV that has been measured using the proposed multi-dimensional FV framework. As yet there is no common understanding of FV measurement in the NFP sector, with no common agreement on the dimensions of FV and what the financial measures in the NFP sector should be measuring (Prentice 2016a). Having identified the lack of a consistent framework to determine the extent of FV in the Australian aged care NFP sector, the present study proposed three FV measurement tools – the multi-dimensional FV framework, an FV index, and FV scores – to identify the extent of FV in the Australian aged care NFP sector.

First, a comprehensive literature review identified 69 financial measures related to the NFP sector. Once these 69 were put into a common or a standard language, 41 financial measures remained. For instance, some authors calculated the same financial measure in months or days. Then, seven financial measures from 41 were excluded from the list due to non-availability of data. Finally, 34 financial measures were recognised as usable after standardisation (i.e., put into a common language) and checking for data availability. From the 34 measures remaining 18 financial measures were then selected based on unique features of the Australian aged care NFP sector and weaknesses identified in the existing frameworks developed for the Australian context. 18 most appropriate sector specific financial measures and grouped them into six areas for measuring the level of FV derived from the dimensions of FV, namely FV related to expenses, revenue, profitability, and operating cash flow, working capital management, gearing, and total assets usage (See Appendix 1). Then, a FV index and FV score were developed to recognise the extent of FV in the Australian aged care NFP sector.

To obtain a deeper understanding of the extent of FV in the Australian aged care NFP sector through FV index, the present study has expanded Tuckman and Chang's (1991) binary coding (1 = Yes, 0 = No) into four categories as defined below:

- 1 = the organisation's vulnerability to this particular measure is very low
- 2 = the organisation's vulnerability to this particular measure is low
- 3 = the organisation's vulnerability to this particular measure is high
- 4 = the organisation's vulnerability to this particular measure is very high

The FV score is calculated based on the FV index to measure the extent of FV of NFPs in the sample. The FV score is the ratio of the value of each NFP (calculated based on the proposed FV index) to the total maximum possible value that an organisation could obtain if its extent of FV is very high to every proposed financial measure (i.e., 72) in the proposed FV framework. Finally, the score is converted to a percentage value. The score from this index is denoted as follows:

$$FV Score_k = \left(Total\ value\ assigned\ for\ \frac{NFP_k}{72} \right) \times 100$$

Where the maximum possible value that NFP_k could obtain if the organisation's FV was very high against every proposed financial measure is 72. Next, four levels of FV are recognised based on the value of the FV score: very low, low, high, and very high.

Independent variables

Extent of NFPM disclosures (EXT_NFPM)

The extent of NFPM disclosures is measured through two multi-dimensional integrated frameworks presented by Lee and Nowell (2015) and Boateng *et al.* (2016). Lee and Nowell (2015) identified seven core aspects of NFP performance measurement: inputs, organisational capacity, outputs, behavioural and environmental changes, client and customer satisfaction, public value accomplishment, and network/institutional legitimacy. Boateng *et al.* (2016) identified 20 performance indicators under five categories: financial perspectives, client/customer satisfaction, management effectiveness, stakeholder involvement, and benchmarking. The present study combines these two frameworks and identifies 22 performance indicators within an integrated PM framework. Any disclosure related to these performance indicators was identified through the quantitative content analysis. The disclosure score was calculated for each organisation to identify the extent of PM disclosures by that NFP.

Extent of risk information disclosures (EXT_RI)

This study adopts the coding procedure of Arshad *et al.* (2016), who proposed that risk information can be categorised into five types: financial risk, governance risk, operational risk, compliance risk, and reputational risk. The extent of risk information disclosures has been measured using a self-constructed disclosure index developed based on the prior literature (Arshad *et al.*, 2016). Linsley and Shrides (2006) also used a similar content analysis method to collect voluntary RM disclosure data. The study uses the number of sentences as the text encoding unit. Prior studies (Abraham & Cox, 2007; Amran *et al.*, 2009) also used the number of sentences as the coding unit in their research. Each time an organisation discloses any statement about risk or risk mitigation related to these categories, 1 is added to the appropriate category total. Thus, the total number of sentences in the annual report text relating to each category of risk information is calculated to measure the extent of risk information disclosures. For instance, a sentence is coded as a voluntary risk information disclosure if the sentence explains a key risk faced by the firm (Linsley & Shrides, 2006).

Example: "We've seen ongoing government funding constraints and increased compliance requirements under the new Aged Care Quality

and Safety Commission”-Stephanie Buckland, CEO, Amana Living Aged Care Annual Report 2019 (2 marks allocated to two types of risks, here financial risk and compliance risk).

Control variables

Organisation size (SIZE)

The first control variable used in this study is the size of the organisation. Kalleberg and Leicht (1991) concluded that small organisations face many difficulties in attracting the required funds and offering competitive services to customers. Further, they struggle to develop collaborations with other organisations (Wholey *et al.*, 1992). Salimath and Raymond (2011) mention that “government regulation might have more impact on smaller organisations than larger ones” (p. 877). Further, in the NFP context, Trussel and Greenlee (2004), Trussel and Parsons (2007), and Zietlow (2012) have found that large organisations have less financial risk and more financial sustainability.

For this study the size of an aged care NFP is set based on the ACNC categorisation, as explained in Chapter 2. Size of aged care NFPs (SIZE) is quantified as medium size = 1, large size = 2, very large = 3, and extra-large = 4.

Organisation age (AGE)

Several prior studies have considered an organisation’s age to be a control variable (Trussel & Greenlee, 2004; Trussel & Parsons, 2007; Ashley & Faulk, 2010; Zietlow, 2012). Salimath and Jones (2011) state that young organisations have higher failure rates.

Previous studies have recognized mixed results for the relationship between the age and the extent of FV of an organisation. However, most studies (Trussel & Greenlee, 2004; Trussel & Parsons, 2007; Zietlow, 2012; Bowman, 2011) found older organisations have a lower level of FV and greater financial sustainability. Organisation age (AGE) is measured as the natural log of the firm’s incorporation age, in accordance with prior studies (Reheul *et al.*, 2018; Garcia-Rodriguez *et al.*, 2021).

5. Data analysis and results

The study uses both descriptive and inferential statistical analyses. For the inferential statistics, the study analyses the research model using multiple regression analysis. The researcher collected data from 200 aged care NFPs for the two years, 2018 and 2019, giving 400 expected cases in total. Before the data analysis, missing data and outliers were assessed to get the data set ready for the final multivariate analysis (Hair *et al.*, 2019). Forty-two cases (aged care NFPs) were removed from each year of the sample due to missing data (i.e., 84 cases for two years), and thus 316 observations were analysed for the two years, 2018 and

2019. Finally, additional analysis and robustness check were undertaken as follows.

Descriptive data analysis

Table 1 presents descriptive statistics for the full sample. The table provides mean, median, standard deviation, maximum and minimum values for the main variables in the full sample. Table 1 indicates that extent of NFPM and risk information disclosures are relatively low and the extent of FV is relatively higher in the Australian aged care NFP sector.

Table 1. Descriptive statistics for full sample

Variables	N	Mean	Median	Standard Deviation	Minimum	Maximum
EXT_FV	316	0.692	0.710	0.131	0.330	0.950
EXT_NFPM	316	0.400	0.390	0.188	0.040	0.750
EXT_RI	316	3.361	3.000	1.935	0.000	8.000
SIZE	316	2.241	2.000	1.072	1.000	4.000
AGE	316	3.533	3.584	0.624	1.609	4.691

Panel regression results

In Table 2, the study reports the panel regression results for the different organisational and environmental variables hypothesised as causes of FV in the Australian aged care NFP sector.

Table 2. Panel regression results: The effects of NFPM and RM disclosures on FV (EXT_FV)

Variables	Coefficient	t value	Sig
Constant	0.915	12.410	0.000***
EXT_NFPM	-0.256	-5.840	0.000***
EXT_RI	0.010	2.460	0.014**
SIZE	0.043	4.820	0.000***
AGE	-0.010	-0.850	0.397
Year	Included		
F value	11.59		
ProbF	0.000		
Adjusted R ²	0.291		
Observations	316		

The above table reports the regression results. The variables are defined as follows: EXT_FV is measured through a multi-dimensional FV framework; EXT_NFPM is NFPM measured using an integrated framework developed based on Lee and

Nowell (2015) and Boateng *et al.* (2016); EXT_RM is measured using a literature based self-constructed RM disclosure index; SIZE is measured as per the ACNC guidelines; AGE is natural log of NFP's age in years.

***p < 0.01, **p < 0.05, *p < 0.1

The study finds that the extent of NFPM disclosures (*EXT_NFPM*) is negatively associated with the extent of FV in the Australian aged care NFP sector. Therefore hypothesis 2 is supported. However, risk information disclosures (*EXT_RI*) are observed to have a positive and significant association with the extent of FV, and this is not in line with hypothesis 3 which expected a negative association. This unexpected relationship is further discussed in the discussion section below. The study also suggests that the size of an NFP (*SIZE*) is positively and significantly associated with the extent of FV in the Australian aged care sector.

Additional analysis

Table 3. NFPM reporting

NFPM Indicator	% Of total NFPs
Quality of service review	70.51%
Frequency and hours of service provided	42.31%
Client satisfaction survey	8.33%
Number of participants served	66.03%
New customer acquisition	4.49%
Considering customer voice suggestion boxes	69.87%
Program goals meet objectives	26.92%
Timeliness of service provision	4.49%
Competitors overall performance	0.00%
Past organisational performance	55.26%
Employee satisfaction survey	14.10%
Employee education and training	66.67%
Labour turnover rates	0.00%
Staff perspective on operation	71.79%
Information system capabilities	60.26%
Improved condition or status	24.67%
Modified/maintenance of new behaviour	0.00%
Community involvement	72.44%
Funder relations and satisfactions	68.56%
Compliance with general rules	67.67%
Coherence of activities with the stated mission	25.89%

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NFPM Indicator	% Of total NFPs
Relationship with public regulators	69.87%

The majority of NFPs report on areas such as quality of service reviews, number of participants served, handling of customer suggestions from suggestion boxes, past organisational performance, employee education and training, staff perspectives on their operations, information system capabilities, community involvement, fund relations and satisfactions, compliance with general rules, and relationship with public regulators.

Table 4. Number of NFPM indicators

NFPM reporting on indicators	% Of total NFPs
0–4 indicators	37.82%
5–9 indicators	35.26%
10–14 indicators	19.23%
15–19 indicators	6.41%
20-22 indicators	1.28%

Approximately 73% of NFPs reported on less than ten indicators, and only a few NFPs engage in a considerable level of reporting on the NFPM indicators recognised from Lee and Nowell’s (2015) and Boateng *et al.*’s (2016) integrated framework.

Table 5. Risk Information Disclosures

Risk Category	% Of total Disclosures
Financial Risk Disclosures	44.92%
Operational Risk Disclosures	31.10%
Compliance Risk Disclosures	19.31%
Governance Risk Disclosures	2.85%
Reputational Risk Disclosures	1.82%

Financial risk information disclosure was the most common disclosure following by operational risk, compliance risk, governance risk, and reputational risk information disclosures.

Table 6. Robustness Test results

Variables	Coefficient	t value	Sig
Constant	0.695	23.813	0.000***
EXT_NFPM	–0.302	–7.524	0.000***
EXT_RI	0.005	1.109	0.026**
SIZE	0.050	6.263	0.000***

AGE	-0.010	-0.238	0.812
Year	Included		
F value	12.27		
ProbF	0.000		
Adjusted R ²	0.242		
Observations	316		

The overall evidence from robustness test supports that from the main analysis.

6. Discussion of findings

This study has examined the effects of non-financial performance and risk management disclosures on the extent of FV in the Australian aged care NFP sector. The study employed both RDT and signalling theory to establish the research hypotheses. The study results lead the researcher to conclude that the extent of FV in the Australian aged care NFP sector is influenced by non-financial information disclosures (i.e., disclosures of information about NFPM and risk), and the size of the NFP. A more detailed discussion of these research findings follows.

H1: The extent of voluntary NFPM disclosures is negatively associated with FV.

According to the findings, the negative and significant relationship between the extent of NFPM disclosures and the extent of FV in Australian aged care NFPs (the higher the NFPM disclosures, the lower the extent of FV, and vice versa) is consistent with RDT and signalling theory. Aged care NFPs are highly dependent on financial resources. They are more easily influenced by financial stakeholders such as donors and funding agencies (particularly government) based on emotive or reputational reasons. These financial stakeholders want to decide whether to continue or discontinue their support to a particular not-for-profit based on the organisation's performance or achievement of its goals. Further, they rely on the disclosures made in financial statements, especially those relevant to performance evaluation, to decide on their new or ongoing support of an NFP. As a result, there have been increased interest and calls for more relevant and easier-to-understand performance disclosures of NFP activities. The study findings align with those from the corporate literature that have found that NFPM disclosures improve organisational financial performance (Kolstad, 2013; Hoque & James, 2000; Agostini *et al.*, 2022). Hoque and Adams (2011) further suggest that investors use NFPM disclosures to evaluate an organisation's long-term performance. Recently Omran *et al.* (2019) found a significant and positive association between NFPM disclosure and financial performance among manufacturing firms in Australia.

H2: The extent of voluntary risk information disclosures is negatively associated with FV.

As per the findings, the positive and significant relationship observed between the extent of risk information disclosures and the extent of FV (the higher the risk information disclosures, the lower the extent of FV and vice versa) is consistent with signalling theory, but inconsistent with RDT and contrary to the negative relationship expected when the hypothesis was developed. As far as can be ascertained no studies have been conducted to date to identify the relationship between voluntary disclosures of risk information and the extent of FV in the NFP sector. However, previous research regarding the relationship between voluntary risk information disclosure and firm value in the corporate sector showed mixed results (Bokpin, 2013; Abdullah *et al.*, 2015). Additional analysis shows that the aged care NFPs engage more in harmful risk information disclosures (risk perceived as a threat) compared to beneficial risk information disclosures (risk perceived as an opportunity), and so give negative signals to funders which result in negative feedback (i.e., fewer funding opportunities). Further, financial risk information disclosure was the most common disclosure following by operational risk, compliance risk, governance risk, and reputational risk disclosures (refer to Table 5). The negative feedback results in a higher level of FV in the Australian aged care NFP sector. This finding is supported by literature from the corporate sector where, for instance, Abdullah *et al.* (2015) found a negative relationship between harmful risk information disclosure and financial performance in the for-profit sector. Also, Suttipun and Nicholson (2020) found a negative relationship between financial RM disclosure and financial performance among listed companies in Thailand.

The size of an aged care NFP has a statistically significant positive relationship with the extent of FV. This relationship indicates that as the size of an aged care NFP increases (as measured based on the NFP revenue as per the ACNC guidelines), the extent of FV also increases. This finding is inconsistent with prior NFP studies (such as Trussel & Greenlee, 2004; Trussel & Parsons, 2007; Zietlow, 2012), which found that large organisations have less financial risk than small ones. However, the present study's finding is consistent with the Royal Commission Final Report (RCACQS, 2021), which highlighted more issues due to financial unsustainability in residential care than in home care providers, and typically residential care providers are large NFPs, and home care providers are medium.

7. Conclusion and implications

The study provides novel insights into the relationship between voluntary non-financial information disclosures (i.e., disclosures of NFPM and risk information) and the extent of FV in the NFP sector. Moreover, it provides a key contribution from the NFP context by recognising a positive and significant association between voluntary risk information reporting and the extent of FV in the NFP sector. By using RDT, the study provides novel insights from the NFP context by identifying that not all types of NFP disclosures help attract financial resources from the external environment. Only beneficial risk information disclosures, where risk is perceived as an opportunity, assist in attracting resources from the environment, while harmful risk information disclosures, where risk is perceived as a threat, do not assist in attracting financial resources from the competitive funding environment. The study also extends the signalling theory literature in the NFP context by identifying that harmful risk information disclosures issue negative signals to funders and get negative feedback (i.e., fewer funding opportunities) and only beneficial disclosures related to NFPM, and beneficial risk information disclosures issue positive signals to resource providers to get positive feedback (i.e., more funding).

The study further extends the RDT literature on NFPs by identifying that NFP collaborations bring more resources to the organisation, thereby reducing resource dependency and the extent of FV in the NFP sector. Also, the study provides novel insights into the NFP sector by identifying that audit quality measured in audit firm size assists in attracting financial resources from financial stakeholders, again reducing resource dependency and the extent of FV in the NFP sector.

Out of the present study's findings, several practical implications can be formulated for aged care NFP top management. The observations of this study highlight inadequate external reporting from NFPs in the Australian aged care NFP sector. Senior managers of aged care NFPs could attract more resources from resource providers by improving reporting of disclosures related to NFPM and beneficial risks. Indeed, the additional analysis of this study (Table 3) identified the least significant measures of aged care NFPs; therefore, senior managers of aged care NFPs should consider more reporting on those areas (such as customer satisfaction, new customer acquisition, program goals meet objectives, timeliness of service provision, employee satisfaction, labour turnover, and improved condition or status). Even though NFPs registered with the ACNC must prepare financial statements, non-financial information related to performance measurement and risk management is not mandatory for NFPs in Australia. Nevertheless, the findings of this study have demonstrated the significance of non-financial information in attracting financial resources from the environment. Therefore, the results also have implications for policymakers of the need to

prepare a specific framework for NFPs to disclose non-financial PM and RM information in their annual reports.

Overall, the study contributes to the limited literature on organisational and environmental factors affecting FV in the NFP sector in general and in the Australian aged care NFP sector. Even though the study provides new insights into the causes of FV in the Australian aged care NFP sector, the results need to be interpreted in view of the following limitations, which also provide avenues for future research. First, the study focuses only on those medium and large aged care NFPs which issued audited financial and annual reports for two consecutive years (2018 and 2019) and ignores the small, aged care NFPs because the necessary data was not available. Second, the study was based on data from secondary sources, the annual reports and AISs of individual aged care, and uncovered some inconsistencies in reporting. These limitations provide avenues for future research. Future study might be expanded to identify the organisational and environmental factors affecting FV in all sizes of aged care NFPs. Also, interviews and other survey methods might be utilised in the future to get a more in-depth understanding of the causes of FV in the Australian aged care NFP sector.

Notes:

1. The NFP sector dominates the aged care industry with NFP providers continuing to represent the largest proportion of ownership in all types of aged care services with 69%, 53% and 56% share for home support, home care and residential care respectively as of 30 June 2019 (Department of Health and Aged Care 2020).
2. The ACNC is designated “Australia’s national charity regulator”. It was established in December 2012 as the national regulator for those NFPs, which are required to be registered as charities with the ACNC.
3. In Australia, Royal Commissions are established by the government as the highest form of independent body to inquire into matters of public importance.

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