

Article

Determinants of Animal Welfare Disclosure Practices: Evidence from China

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Abstract: Public awareness of farm animal welfare has been growing. However, the animal welfare disclosure, as an important element of Corporate Social Responsibility (CSR) reporting, has not been sufficiently explored. This paper investigates animal welfare disclosure practices as well as the determinants of animal welfare disclosure practices of 2019 corporate reports using a sample of Chinese A-share listed food firms. Content analysis of corporate reports is employed for exploring animal welfare disclosure practices and an animal welfare disclosure index is adopted as the instrument for content analysis. The analysis reveals that animal welfare reporting is still in its embryonic stage in China. It is further found that firm size, board size, and board independence positively affects animal welfare disclosure practices, while CEO duality has a negative impact. As the first to examine the determinants of animal welfare disclosure practices, this paper would have some implications for academics, practitioners, and policymakers.

Keywords: animal welfare; disclosures; farm animals; food companies; CSR; China



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1. Introduction

According to the definition provided by Hughes [1], animal welfare refers to a state of physical and mental health where the animal is in harmony with its surroundings. Currently, there are five aspects in terms of animal welfare that are internationally accepted (the so-called “Five Freedoms”): freedom from hunger and thirst; freedom from discomfort; freedom from pain, injury and disease; freedom to express normal behaviour; and freedom from fear and distress. The Five Freedoms form the basis of animal welfare legislation in many countries and regions. For instance, the Five Freedoms are reflected in the Lisbon Treaty. Article 13 states that “... the Union and the Member States shall, since animals are sentient beings, pay full regard to the welfare requirements of animals ...”. However, there are currently no nationwide animal welfare laws in China and China has no official controls in the field of animal welfare. The current animal-related legal framework in China, such as Wild Animal Conservation Law of the People’s Republic of China (2018 Revision), only aims to protect rare and endangered species of wildlife and is perceived to be too human-focused. In other words, it considers only the economic interest, health and safety of mankind but not the welfare of animals [2,3].

In China, the embryo of the concept of animal welfare can be traced back to ancient times. Viewing animals as equals and treating them with compassion has been advocated historically by Chinese philosophy and Chinese traditional religions, including Chinese Buddhism, Taoism, and Confucianism [3]. Some ancient classical quotations with regards to animal welfare like “kindness to humans and other creatures” and “loving human and

every creature” have been prevalent for generations in China [4]. Nevertheless, due to China focusing too much on its economic development in the past decades, animal welfare has not been seen as important by the public. China has been frequently condemned for its neglect of animal welfare [5]. For instance, about 10,000 black bears were farmed for bile production in 2012 [6]. Bile production refers to extracting bile from the gallbladders of living bears for the purpose of producing traditional Chinese medicine. In fact, if China expects to play a more critical role in international affairs, being an economic power and moral power simultaneously is necessary rather than only being an economic power [7]. China is receiving global attention over its animal welfare issues [8], as its decisions could significantly impact the destiny of billions of animals [7].

Although China’s animal welfare is in its early stages [4], there is a sign of a positive change towards animal welfare in China. The Chinese government has attempted to take initiatives to facilitate better animal welfare [3]. There are some examples of this kind of legislation. In September 2009, a draft proposal of an animal protection law was released in China. Since July 2014, animal testing for all domestically-produced ordinary cosmetic goods has no longer been legally mandated. In April 2020, the animal testing requirements for all cosmetic goods have been dropped. Moreover, anyone caught making a rare wildlife transaction, no matter what purpose, such as producing food or medicine, faces up to ten years in prison [9]. Some organisations, such as the International Cooperation Committee of Animal Welfare (ICCAW) (a non-profit organisation affiliated with the China Association for the Promotion of International Agricultural Cooperation) and Compassion in World Farming (CIWF) China Office, were established in the past few years. These organisations are considered to be important in disseminating the ideology of animal welfare in China [10]. Furthermore, some international forums on animal welfare have been held in China. For instance, the third World Conference on Farm Animal Welfare was held in China on 19 September 2019 and ICCAW was one of the co-sponsors. The Chinese public has shown an increasing sympathy toward farm animals as well. Faunalytics (a non-profit organisation that conducts the research and analysis with regards to animal issues) observes that 51% of Chinese people support the introduction of a law mandating farmers to treat their livestock humanely [7].

Animal welfare should be seriously considered since “there are so many animals around the world suffering from being used for entertainment, food, medicine, fashion, scientific advancement, and as exotic pets. Every animal deserves to have a good life where it enjoys the benefits in nutrition, environment, health, behaviour, and mental state” [11]. Animal welfare is also vital in international trade, human health, and environmental protection [4]. In order to reflect the growing importance of animal welfare, all member countries of the World Organisation for Animal Health adopted the first worldwide Global Animal Welfare Strategy in 2017. The aim of the Global Animal Welfare Strategy is to promote “A world where the welfare of animals is respected, promoted and advanced, in ways that complement the pursuit of animal health, human wellbeing, socio-economic development and environmental sustainability” [12].

Despite the importance of animal welfare, it is still under-highlighted in the context of corporations. It is believed that corporate disclosures can improve animal welfare [13]. Disclosures on animal welfare are also important to investors as well as to other stakeholders such as regulators, customers and animal welfare NGOs [14]. For instance, as farm animal welfare impacts the finance aspect of a firm, investors seek greater transparency about how the farm animal welfare-related issues are managed within the firm and corresponding performances [14]. However, there is an extreme lack of disclosures on animal welfare among food firms [13]. Many food companies do not report any disclosures on farm animal welfare; even if they do, their disclosure levels are quite limited [15]. Leslie and Sunstein [13] argue that “steps should be taken to promote disclosure so as to fortify market processes and to promote democratic discussion of the treatment of animals” (p. 117). Animal welfare disclosures provided by firms should enable stakeholders to have an in-depth understanding of the importance of farm animal welfare to the firm as well as

the firm's animal welfare policies, practices, processes and performance [16]. Thus, in order to provide disclosures on animal welfare in a compelling way, the Business Benchmark on Farm Animal Welfare (BBFAW) offers a disclosure framework which enables all food firms to apply it to report their animal welfare disclosures [16]. The BBFAW is considered to play an important role in fuelling animal welfare disclosure practices by food firms [16].

Animal welfare disclosure practices, representing the levels of animal welfare disclosure in corporate reports, are seldom explored and the determinants of animal welfare disclosure practices have never been studied in prior literature. Therefore, this study aims to bridge this gap, by investigating animal welfare disclosure practices as well as the relationships existing between some impact factors and animal welfare disclosure practices of corporate reports by Chinese A-share listed firms that operate in the meat and dairy producing industries. Content analysis of corporate reports is employed for exploring animal welfare disclosure practices. An animal welfare disclosure index is adopted as an instrument for content analysis.

Previous studies on non-financial reporting focused mainly on Corporate Social Responsibility (CSR) disclosure, sustainability disclosure, intellectual capital disclosure, and integrated reporting disclosure, indicating a gap in the literature rooted in the lack of empirical study on animal welfare disclosure and its possible determinants. The originality of this paper is that, to the authors' best knowledge, it is the first to examine the determinants of animal welfare disclosure practices, especially in the context of China. The concept of animal welfare reporting seems to be forgotten by academia in business; thus this study makes a preliminary attempt to evoke the awareness of people on the importance of animal welfare reporting and to remind researchers to draw attention to a specific area: animal welfare reporting, instead of only being limited to sustainability/CSR reporting. Animal welfare reporting is in its infancy in China. Many firms have not conducted effective farm animal welfare management and have not comprehensively disclosed information on how they manage farm animal welfare to their stakeholders and to society. This paper helps to fuel the diffusion of animal welfare reporting in China and provides some implications for tackling severe problems existing in animal welfare in China, such as reminding policymakers and senior managers to attach importance to animal welfare.

The remainder of this paper is organised as follows. Section 2 describes the theoretical background of this paper. Section 3 reviews related literature with regards to animal welfare disclosures and its determinants as well as develops the research hypotheses. Section 4 explains the research method for this paper. Section 5 presents and discusses the research findings. Section 6 concludes the paper.

2. Theoretical Background

Four theories, animal welfare theory, stakeholder theory, legitimacy theory, and signalling theory are applied as the theoretical background of this paper to explain why Chinese firms release animal welfare disclosures.

Animal welfare theory was proposed by Singer. This theory allows animals to be killed for food or animal products provided the animals received a minimal amount of pain [17] and supports the use of legal regulations to improve animal welfare [18]. This theory aligns with the purpose of regulations in many countries in promoting the protection of animal welfare.

Legitimacy theory suggests that there is a "social contract" between a firm and the society where it operates. Firms have to comply with social values to achieve legitimacy [19]; otherwise, society would not allow the firms to continue their operations [20]. A firm can apply animal welfare disclosures as a legitimising tool to make itself be perceived as legitimate in society [19,21]. Therefore, releasing animal welfare disclosures can be used to gain, maintain, and restore a firm's legitimacy [22]. It needs to be noted that the concept of "legitimacy" is subjected to a particular context and a particular time. A "legitimate behaviour" in one society (e.g., one country) might not be considered acceptable in another country. Also, due to changing social values, a prior "legitimate behaviour" might be not

considered legitimate in the future. As the example taken by Deegan [23], “... within Australia approximately 30 years ago there were many retail stores that sold clothes that were made from the fur of animals. With changing community attitudes towards the wearing of animal skins, and in particular, the treatment of animals from which the furs and skins were sourced, the demand for fur coats with Australia declined” (p. 205).

According to a survey conducted by the BBFAW, customer interest and client interest are the most important impact factors that influence firms’ attitude towards farm animal welfare. Other important drivers include media interest, NGO pressure, and investor pressure [24]. In a similar vein, stakeholders exert pressures to firms to enhance their animal welfare disclosure practices. Pursuant to the ethical perspective of stakeholder theory, animal welfare disclosures by firms can be applied as a tool for discharging accountability to their stakeholders [25]. Furthermore, from the managerial model of stakeholder theory, animal welfare disclosures by firms would meet the information demands of diversified stakeholder groups; thus, its relationship with stakeholders would be improved as well [20].

From the perspective of signalling theory, companies with superior quality should signal their excellence to the market to distinguish themselves from other low-quality companies and gain the favour of their stakeholders [20]. Animal welfare disclosures can be applied as a tool by a firm to signal its high quality to its stakeholders [26,27].

3. Literature Review and Hypothesis Development

3.1. Literature Review

In spite of the importance of the topic of animal welfare disclosures, it is an under-explored topic in extant literature. Sullivan et al. [28] investigated the animal welfare disclosure practices by the world’s largest food companies in 2012 and 2013. They found that animal welfare disclosure practices by sample firms increased in 2013, compared with that in 2012. Nevertheless, only a minority of sample firms released comprehensive animal welfare policies, indicating that many firms do not see animal welfare as a material business issue and fail to report this kind of information to stakeholders and society. More recently, Reis and Molento [29], through content analysis, explored the animal welfare disclosure frequency of annual reports (from 2007 to 2016) of two large Brazilian meat-processing multinationals. They counted sentences referring to animal welfare activity to measure the animal welfare disclosure frequency. They reported that both the number of pages of the annual reports and the animal welfare disclosure frequency of annual reports increased over the years. However, animal welfare frequency and report length are not significantly associated.

Although no prior study examined the determinants of animal welfare disclosure practices, some researchers have conducted some preliminary analysis for the impact factors of biodiversity disclosure practices. For instance, Haque and Jones [30] investigated whether board gender diversity impacts the extent of biodiversity disclosures by European companies. They observed that boards with a higher proportion of female directors lead to a greater extent of biodiversity disclosures. Additionally, the Global Reporting Initiative (GRI) framework and the EU strategic plan on biodiversity (2011–2020) affect the extent of biodiversity disclosures positively as well. Similarly, Hassan et al. [31] examined the determinants of disclosure practices of biodiversity and species protection by the top 200 Fortune Global companies. They reported that if a firm is audited by Big 4, gets an environmental reward, operates in red/amber sector, operates in a developing country, has biodiversity partners, and publishes specific biodiversity words in companies’ reports, then they tend to show higher disclosure practices of biodiversity and species protection.

The literature analysis clearly shows there is a lack of studies on animal welfare disclosure practices, leaving room for in-depth research on animal welfare disclosure and its possible impact factors. Thus, this paper contributes to the existing literature considering the circumstance that the studies on animal welfare reporting are extremely scarce. This study enriches prior studies by investigating animal welfare reporting in China.

3.2. Hypothesis Development

This research examines a range of possible explanatory factors influencing the levels of animal welfare disclosure released by firms operating in the food industry through their corporate reports, extending the research of the most commonly examined variables in other non-financial reporting research into the animal welfare reporting. Therefore, this study is exploratory in nature. This study focuses on two groups of variables (i.e., firm characteristics and corporate governance) which have been proven significant in previous non-financial reporting studies. The firm characteristics group contains three variables, namely firm size, leverage and profitability. These three variables are fundamental features of firm characteristics [32]. We also examine three aspects of corporate governance (i.e., board size, board independence, and CEO duality) as possible impact factors of animal welfare disclosure practices. When exploring the relationship between governance mechanisms and non-financial disclosure practices, these three factors as fundamental features of corporate governance cannot be neglected [33].

3.2.1. Firm Size

Stakeholder theory suggests that large firms are subject to greater attention from stakeholders as a result of the number of the firm's stakeholders growing with the size of the firm. In order to satisfy a greater information demand of stakeholders, a large firm is likely to offer more transparent corporate reporting [34]. Moreover, large firms have incentives to offer more transparent corporate reporting to reduce the cost of capital because they often have a higher demand for financing [35]. The positive association between firm size and information disclosure practices has been confirmed by prior studies. For instance, Yuen et al. [36] and Xiao and Yuan [37] reported that larger Chinese listed firms tend to exhibit a greater extent of voluntary disclosures. Liu and Anbumozhi [38] found a positive relationship between the quality of environmental disclosures and firm size. Additionally, Li et al. [39] confirmed that the relationship between the quality of CSR disclosures and firm size is positive. The above arguments generate the first hypothesis for this study:

Hypothesis 1. *Compared with a firm with a smaller size, a firm with a larger size is more likely to present higher animal welfare disclosure practices.*

3.2.2. Financial Leverage

Creditors normally believe that a highly leveraged firm is riskier, thereby increasing the cost of debt of the firm [40]. Agency theory suggests that creditors need more transparent corporate reports by highly leveraged firms to reduce information asymmetry; therefore, highly leveraged firms enhance information disclosure practices to reduce the cost of debt [41]. Roberts [42] documented that financial leverage is positively correlated to CSR disclosure practices by 130 major American corporations. Clarkson et al. [43] also found supportive evidence that financial leverage is positively associated with the quality of environmental disclosures by American firms from the five most polluting industries. Hence, the above arguments lead to the second hypothesis:

Hypothesis 2. *Compared with a firm with lower financial leverage, a firm with higher financial leverage is more likely to present animal welfare disclosure practices.*

3.2.3. Profitability

According to signalling theory, a highly profitable firm is likely to exhibit a higher disclosure practice as a signal to the capital market so as to present its superior quality and enhance its investors' confidence [44]. Agency theory suggests that the management of a highly profitable firm tends to improve disclosure practice so as to preserve their position and improve their remuneration level [45]. Wang et al. [46] reported that there is a positive association between profitability and the extent of voluntary disclosure by Chinese firms.

Li et al. [39] documented that there is a positive association between profitability and the quality of CSR disclosures. However, proprietary cost theory suggests that the high returns of a profitable firm would attract new competitors; therefore, a profitable firm tends to reduce its corporate reports' transparency by degrading disclosure practice to prevent their potential rivals from entering the same business [35]. Taking into account these arguments, the following hypothesis is tested:

Hypothesis 3. *Profitability is associated with animal welfare disclosure practices.*

3.2.4. Board Size

The board of directors plays a critical role in supervising whether the firm is managed properly [47]. It is believed that compared with a large board, a small board carries a heavier workload and lacks a diversified range of expertise, skill and competencies. These drawbacks of a small board limit the ability of the board in monitoring and negatively influence the effect of the board in monitoring [48]. Jizi et al. [48] reported that board size positively impacts the extent of CSR disclosures of large US commercial banks. Ahmed Haji [49] found that the positive relationship between board size and the extent of CSR disclosures of Malaysian companies is empirically significant. It is expected that larger boards would be better able to promote management to effectively communicate their animal welfare activities and performances to their stakeholders. This leads to the following hypothesis:

Hypothesis 4. *Compared with a firm with a smaller sized board of directors, a firm with a larger sized board of directors is more likely to present higher animal welfare disclosure practices.*

3.2.5. Independent Direction

Independent directors refer to those who are directors as outsiders but do not hold posts other than directorships [47,49]. Agency theory suggests that boards with a high proportion of independent directors are likely to do better in monitoring and controlling management, thereby bringing a more transparent firm [48]. Independent directors represent the interests of different stakeholder groups; they exert pressures on firms to urge them to undertake CSR activities so as to take care of the interests of non-financial stakeholders [50]. Many studies have reported that independent directors can enhance the level of information disclosures to reduce information asymmetry between insiders and outsiders. Xiao and Yuan [37] found that there is a positive association between the proportion of independent directors and the extent of voluntary disclosures of Chinese firms. Similarly, Li et al. [51] found a positive association between independent directors and the extent of CSR disclosures of firms in China. In light of the above arguments, the following hypothesis is proposed:

Hypothesis 5. *Compared with a firm with a lower proportion of independent directors, a firm with a higher proportion of independent directors is more likely to present higher animal welfare disclosure practices.*

3.2.6. CEO Duality

CEO duality refers to when the CEO serves as CEO and board chairperson simultaneously [52]. Agency theory suggests CEO duality weakens board independence and decreases the board's ability in corporate governance [53], resulting in less transparent corporate reports [54]. The separation of the roles of the CEO and the chairman of the board of directors is beneficial to enhance the transparency of a company [36]. Xiao and Yuan [37] reported that CEO duality is significantly associated with a lower extent of voluntary disclosures of Chinese companies. Hence, the above arguments lead to the sixth hypothesis:

Hypothesis 6. *Compared with a firm whose CEO is also the chairman of the board of directors, a firm whose CEO is not also the chairman of the board of directors is more likely to present higher animal welfare disclosure practices.*

4. Methodology

The food industry is one of the industries that are most closely connected with farm animal welfare disclosures. The sample of this study is composed of 37 Chinese A-share listed firms that operate in the meat and dairy producing industries in 2019. Although the sample size is small, it includes all Chinese listed firms that are related to animal welfare. Given none of the sample companies published stand-alone animal welfare reports, data for animal welfare disclosure practices of corporate reports (Listed firms disclose animal welfare information to the public through corporate reports. These corporate reports include sustainability reports, CSR reports, and annual reports), including annual reports, sustainability reports or CSR reports by the sample companies were hand-collected by the authors of this study, while other data were obtained from the China Stock Market and Accounting Research (CSMAR) database.

In investigating the corporate disclosures on CSR, content analysis is a commonly applied analytical tool to analyse firms' corporate reports [55]. Content analysis is defined as "a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns" [56] (p. 1278). According to Guthrie et al. [57] (p. 289), capturing "disclosure categories from well ground relevant literature" is a basis for making sure of the reliability of the research [58]. Therefore, an animal welfare disclosure index was adopted as an instrument for content analysis, based on the benchmark provided by the 2019 BBFWA report (see Appendix A).

Initially, two authors of this study were trained for the data collection on the basis of the benchmark provided by the 2019 BBFWA report. Then they conducted a pilot test for corporate reports of 6 first-tier firms in 2019 BBFWA report. If there were any divergencies, a discussion would be made until a consensus is achieved. Then, another round of pilot test for corporate reports of ten Chinese benchmark companies in 2019 BBFWA report was carried out by two researchers. Results attained were then compared. It was found that the scores between the two researchers were totally the same, confirming the reliability of content analysis [59]. After the pilot test, one of the authors of this paper conducted the formal content analysis for all corporate reports of sample firms in this study to ensure the reliability in the process of content analysis [60].

Considering the checklist approach (obtaining disclosure scores by counting the presence or the absence of a disclosure item) might bring potential bias, the impression approach (obtaining disclosure scores based on the coder's overall impression of the report against criteria) was applied, although we admit that "the impression score is more subjective" [61] (p. 121). By referring to Skouloudis et al. [62], a 5 Likert-like scale (0–4) was adopted as the scoring system for assessing animal welfare disclosure practices. In other words, animal welfare disclosure practices (AW) are distinguished to 5 tiers from 0–4. Appendix B describes the scoring system. An ordered logit regression model is outlined in Equation (1) since the dependent variable (AW) is an ordered measure.

$$AW = \beta_0 + \beta_1 Size + \beta_2 Lev + \beta_3 Profit + \beta_4 Board + \beta_5 Ind + \beta_5 Duality + \epsilon \quad (1)$$

Independent variables are defined as follows: firm size (Size) is computed as the natural logarithm of total employees [63,64]; financial leverage (Leverage) is measured by the book value of total liabilities of a company at the end of each fiscal year divided by the book value of total assets of the company at the end of each fiscal year; profitability (ROA) is measured by the net profit (after interest and taxation) for each fiscal year divided by the book value of the total assets at the end of this fiscal year; CEO duality (Duality) is a dummy variable, equalling to 1 if the same person serves as a CEO as well as the chairman and 0 if otherwise; board size (Board) is measured by the natural logarithm of the

number of directors on the board; board independence (Ind) is measured as the percentage of non-executive directors within the board.

5. Results and Discussion

5.1. Descriptive Analysis

Table 1 presents summary statistics of the variables. It presents that the mean value of animal welfare disclosure practice is 0.78 with a standard deviation of 0.63, on a scale of 0–2 (No sample firms acquired the scores of 3 and 4). Table 1 shows further evidence by distinguishing the sample firms into 3 tiers. The number of highest tier (the score of 2) firm is 4 while the number of lowest tier (the score of 0) firm is 12. The firms whose scores are 1 account for the largest proportion among sample firms (56.76%). A firm which obtained the score of 0 does not release any information relating to animal welfare and a firm which gained the score of 1 has a general performance in reporting animal welfare disclosures. A firm which obtained the score of 2 has better performance in releasing animal welfare disclosures. The results indicate that animal welfare disclosure practices by sample firms are extremely low.

Table 1. Descriptive statistics.

	Obs	Mean	SD	Min	Max
AW	37	0.78	0.63	0	2
Size	37	8.32	1.34	5.15	11.16
Lev	37	0.45	0.19	0.13	0.87
ROA	37	0.09	0.13	−0.05	0.53
Board	37	2.08	0.20	1.61	2.48
Ind	37	0.38	0.08	0.3	0.8
Duality	37	0.19	0.40	0	1

AW Disclosure Practice		
Tier	Number	Proportion
0	12	32.43%
1	21	56.76%
2	4	10.81%

5.2. Univariate Analysis

Table 2 shows the results of correlation analysis. The pair-wise correlation between variables was examined using the Pearson correlation coefficient and Spearman correlations, respectively. It can be found that the correlation between one independent variable (Size) and the dependent variable (AW) is statistically significant, which provides initial evidence for the hypotheses of this study. Nevertheless, the other five independent variables have no significant coefficient with the dependent variable (AW). However, these univariate results do not capture other factors that influence AW. Therefore, a multivariate analysis was adopted to seek more accurate results [65]. In the meantime, there are no unexpected high correlations that suggest multicollinearity problems [66].

Table 2. Correlation Matrix.

	AW	Size	Lev	ROA	Board	Ind	Duality
AW	1	0.502 ***	−0.088	0.289 *	0.153	0.231	−0.066
Size	0.574 ***	1	−0.016	0.509 ***	−0.047	0.124	0.226
Lev	−0.101	−0.096	1	−0.648 ***	0.038	−0.033	0.006
ROA	0.210	0.332 **	−0.650 ***	1	0.030	0.140	0.175
Board	0.157	−0.069	−0.037	0.151	1	0.380 **	0.000
Ind	0.263	0.182	−0.034	0.116	0.452 ***	1	0.343 **
Duality	−0.054	0.256	0.020	0.006	−0.037	0.341 **	1

***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

5.3. Multivariate Analysis

An ordered logit regression model was applied due to AW being an ordered measure. The chi-square score from the Brant test suggests that the proportional odds assumption of ordered logit regression is not violated ($p > 0.10$). Collinearity diagnostics based on variance inflation factors give no indication of multicollinearity problems.

Table 3 shows the regression results for the relationship between AW and all research variables. The coefficient of firm size (Size) on AW is positive and statistically significant. Thus, Hypothesis 1 is supported. Financial leverage (Lev) shows no significant association with AW. Therefore, Hypothesis 2 cannot be supported. The proposed association of profitability (ROA) and AW discussed in Hypothesis 3 is not supported significantly. There is a significant positive correlation between board size (Board) and AW. Hence, Hypothesis 4 is supported. A statistically significant and positive correlation is found between Independent directors (Ind) and AW. The result provides support for Hypothesis 5. CEO duality (Duality) shows a significant negative association with AW, which implies significant evidence for Hypothesis 6.

Table 3. Regression Results.

	Predicted Sign	AW		VIF
		Estimated Coefficients	z-Statistics	
Size	+	1.592 ***	4.10	1.27
Lev	+	−2.502	−0.86	1.80
ROA	?	−3.303	−1.04	2.09
Board	+	6.068 ***	3.09	2.23
Ind	+	9.590 **	2.44	2.41
Duality	−	−2.157 **	−2.45	1.26
N		37		
Wald Chi-Square		21.43 ***		
Pseudo R ²		0.3161		

*** and ** denote significance at the 1% and 5% levels, respectively (two-tailed tests). Z-statistics are computed using robust standard errors.

In general, four explanatory variables, namely firm size, CEO duality, board size, and independent directors have a significant impact on animal welfare disclosure practices, whereas the remaining two explanatory variables do not have such an impact.

5.4. Robustness Analysis

In order to ensure the robustness of the main findings, an additional test was conducted by changing the proxies of profitability and firm size. Specifically, ROA is substituted by ROE (net profit (after interest and taxation) for each fiscal year divided by the book value of the total equity at the end of this fiscal year), and the natural logarithm of total assets at the end of the year substitutes the number of employees. The substitutional variables are re-labelled as “ROE” and “Asset” respectively. The regression model was then run again. As shown in Table 4, the empirical results have no substantial changes.

In addition, the Ordinary Least Squares (OLS) regression model has also been applied to test the results and both the OLS regression model and the ordered logit regression model produce almost identical results.

Table 4. Robustness analyses.

	AW	
	Estimated Coefficients	z-Statistics
Asset	1.205 ***	2.95
Lev	−2.069	−0.68
ROE	0.480	0.17
Board	4.459 **	2.20
Ind	8.591 ***	2.68
Duality	−1.733 **	−2.09
N	37	
Wald Chi-Square	17.20 ***	
Pseudo R ²	0.2319	

*** and ** denote significance at the 1% and 5% levels, respectively (two-tailed tests). Z-statistics are computed using robust standard errors.

5.5. Discussion

From the results of the content analysis, it can be observed that animal welfare disclosure practices by Chinese A-share listed firms that operate in the meat and dairy producing industries are far from good. Most sample firms only provide some cursory descriptions of animal welfare, which is similar to the finding of Sullivan and Amos [15]. For example, New Hope Liuhe Co., Ltd. claims that animal welfare is one of 19 factors that influence both the firm and environment, society and governance (ESG). However, it merely makes the identification but fails in elaborating how and why animal welfare influences both the firm and ESG and what initiative the firm undertakes to ensure a sound level of animal welfare in its firm. Only a few sample firms are considered to be better in reporting animal welfare disclosures. For instance, Hunan Dakang International Food & Agriculture Co., Ltd. (hereinafter referred to as Dakang Agriculture) states in its 2019 annual report that “The production process strictly follows the Islamic halal slaughter method . . . the company’s beef cattle slaughtering process is divided into 11 processes including pre-slaughter inspection, waiting to be slaughtered, stunned, assassinated and bleeding, skinning processing, synchronised health inspection, half-cutting, electrical stimulation, pre-cooling, cooling, and segmentation.” Dakang Agriculture also provides a flow chart of the slaughtering process. Another example is Inner Mongolia Yili Industrial Group Company Limited (hereinafter referred to as Yili Group). Yili Group clearly proposes the concept of animal welfare and its initiatives to enhance animal welfare. In its 2019 biodiversity report, Yili Group states that “we incorporate animal welfare into the daily work of dairy cow health, nursing and barn management, and create a quality life of ‘eat well, drink well and rest well’ for dairy cows”. In effect, only a general description of farm animal welfare-related information (e.g., management systems and processes) is not enough for satisfying the expectations of stakeholders.

In order to make a comparison between sectors, the authors further evaluate animal welfare disclosure practices of apparel producing firms as animal-material-based firms (apparel producing and food-producing) are closely related to animal welfare disclosures. It is found that none of the Chinese listed apparel firms reports any disclosures with regards to animal welfare. In line with the argument of Sullivan and Amos [15], we believe that animal welfare is a selective reporting issue in the context of China. In other words, animal welfare reporting is still in its infancy in China.

The results highlight the positive impact of firm size on animal welfare disclosure practices, which is consistent with Xiao and Yuan [37], Liu and Anbumozhi [38], and Li et al. [39]. Agency theory, stakeholder theory, and signalling theory provide supports for this finding. Agency theory suggests that a large firm is subject to greater information asymmetry and higher agency costs [35,67]. Thus, a large firm has an incentive to offer more transparent disclosures [34]. From the perspective of stakeholder theory, a large firm is subject to greater attention from stakeholders. Thus, large firms offer more transparent

disclosures to satisfy the expectations of diversified stakeholder groups on information and discharge accountability to them [34]. According to signalling theory, a large firm has a higher need for financing. In order to finance from capital markets, large firms tend to offer more transparent disclosures to convey its superior quality to investors [35].

Financial leverage is not an impact factor of animal welfare disclosure practices, which is similar to the findings of Chow and Wong-Boren [68] and Ahmed Haji [49]. Chow and Wong-Boren [68] concluded that the extent of voluntary disclosures by a sample of 52 Mexican firms is not related to leverage. Ahmed Haji [49] confirms that both the extent and quality of CSR disclosures are not significantly correlated to leverage in the Malaysian context. The finding may imply that creditors are not interested in CSR-related information and therefore do not request animal welfare disclosures. They tend to use covenants to protect their interests in debt investment [69].

The insignificant relation between profitability and animal welfare disclosure practices is in line with the findings of Liu and Anbumozhi [38] and Ahmed Haji [49]. Liu and Anbumozhi [38] observed that profitability has no impact on CSR disclosure practices in the context of China. Ahmed Haji [49] reported a similar finding in the context of Malaysia. However, the coefficient of profitability on animal welfare disclosure practices is negative, which can be explained by proprietary costs theory rather than signalling theory, which expects that the coefficient of profitability on animal welfare disclosure practices is positive. Moreover, another possible explanation for the insignificant association between animal welfare disclosure practices and profitability is that investors are already particularly satisfied with the financial performance of the firm; therefore, a profitable firm has no incentive to provide additional disclosures on animal welfare disclosure practices [70].

The results present a positive association between board size and animal welfare disclosure practices, which is consistent with the findings of Jizi et al. [48] and Ahmed Haji [49]. Directors with different types of expertise, skill and competencies are more common in larger boards, and thus a larger board of directors has greater ease in fulfilling its function in monitoring the management [71]. Therefore, a large board fosters transparency and accountability [72].

This study finds that the proportion of independent directors positively and significantly affects animal welfare disclosure practices, which supports the studies by Rosenstein and Wyatt [73] and Yuen et al. [36], and claims made in agency theory. Agency theory posits that boards with a high proportion of independent directors can be more effective in reducing agency problems through monitoring and controlling the management. Thus, boards with a high proportion of independent directors are expected to urge the management to present a higher degree of transparency via corporate reports [48]. Also, compared with directors who are independent of the firm, independent directors are more concerned about the firm's CSR. Boards with a high proportion of independent directors are, therefore, expected to improve animal welfare disclosure practices [47].

CEO duality negatively affects animal welfare disclosure practices, which agrees with the studies of Xiao and Yuan [37] and Gul and Leung [53]. Gul and Leung [53] found that CEO duality is associated with lower levels of voluntary disclosures by Hong Kong companies. The negative association between animal welfare disclosure practices and CEO duality provides support for the rationale of agency theory as well. CEO duality would provide greater power to the CEO and may impair the independence of the board, thereby weakening the role of the board in monitoring the management [74,75]. As a result, the CEO might neglect the interests of stakeholders who care about the firm's CSR as well as neglect disclosures of CSR activities [74].

Overall, the results indicate that board size, independence, and CEO duality, as characteristics of the board fuel a more transparent firm and a greater disclosure practice. However, other than firm size, two other firm characteristics, namely financial leverage and profitability, are not determinants of animal welfare disclosure practices.

6. Conclusions

Menz [76] defines CSR as “a corporate policy that includes social, ethical and ecological aspects” (p.118). Traditional corporate reports focus exclusively on the financial information and neglect CSR information, resulting in that some firms have suffered failures in recent years [77]. Therefore, the focus on CSR reporting has been increasing considerably. The animal welfare disclosure, as an important element of CSR reporting, has not been sufficiently investigated. This paper examines the effect of several firm and board characteristics on animal welfare disclosure practices, demonstrating how these characteristics promote information transparency. The analysis conducted on a sample of all Chinese A-share listed firms that operate in the meat and dairy producing industries in 2019 reveals that animal welfare reporting is still in its embryonic stage in China. Results also indicate that firm size, board size, and board independence positively affects animal welfare disclosure practices, while CEO duality has a negative impact.

Farm animals closely relate to human beings because these animals are used as food to eat and for clothes to wear by people. However, Chinese firms operating in food and apparel industries have not shown their transparency well in the aspect of animal welfare. In order to facilitate animal welfare disclosure practices by Chinese firms as well as to improve animal welfare management in China, the article makes several recommendations. Firstly, Chinese firms prepare animal welfare disclosure without any reference to extant guidelines, which may cause their low animal welfare disclosure practices. Therefore, there is a need to design a Chinese-specific animal welfare reporting guideline. Sullivan et al. [28] emphasised that an animal welfare reporting guideline should not only consider the physical wellbeing of farm animals but that their psychological wellbeing must be taken into consideration. This argument is in line with the theory of animal welfare proposed by Singer [17,78]. Singer’s theory of animal welfare is grounded in the utilitarian philosophical framework and highlights that farm animals can be used as food and clothes on the premise that they are given a good quality life. Secondly, establishing an organisation like the BBFAW in China would not only be useful in enhancing animal welfare disclosure practices, but also in evaluating the performance of companies on farm animal welfare management. Thirdly, as suggested by our findings, an effective governance mechanism (e.g., a large board, a higher proportion of independent directors on the board) would play a significant role in improving accountability and transparency to stakeholders and the public, thereby stimulating animal welfare disclosure practices. Thus, building an effective governance mechanism is a way to bring good animal welfare disclosure practices. Lastly, it is worth noting that animal welfare disclosure is voluntary in China. In other words, even if a company fails in discharging accountability with regards to farm animals, it can choose not to disclose information on animal welfare and it is not likely to be sanctioned by the government. In effect, the ultimate aim of stressing the enhancement of animal welfare disclosure practices is to improve farm animals’ quality of life and make sure that farm animals are not treated cruelly [28]. Thus, the Chinese government should enforce regulations mandating animal welfare disclosures in food and apparel industries.

From a conceptual point of view, the study promotes reflections on the potential implications of the different firm and board characteristics on animal welfare disclosure practices. This study contributes to the literature on animal welfare reporting in two ways. First, it demonstrates how Chinese A-share listed firms that operate in the meat and dairy producing industries report information on animal welfare. Second, this is the first study, to the best of the authors’ knowledge, exploring the determinants of animal welfare disclosure practices. Practitioners can also gain inspiration from the findings of this study. The board of directors can be redesigned to fuel moral behaviours, including improving CSR disclosures, especially animal welfare disclosures. This redesignated board of directors includes more directors especially more independent directors and the separation of the roles of CEO and chairman of the board. Standard setters and policymakers can provide further guidance (e.g., designing a jurisdiction-specific disclosure guideline for firms) for animal-material-based firms (apparel producing and food-producing) based on the findings

of this study in order to urge those firms to provide their stakeholders with appropriate animal welfare disclosures to demonstrate their quality to the market, to gain legitimacy, and to discharge accountability.

The corporate reports investigated in this study were prepared for the fiscal year of 2019 and published amid the crisis caused by the COVID-19 pandemic. The COVID-19 pandemic affects each firm globally and has had an impact on the health and welfare of almost all animals [79]. Integrated reporting (IR) is seen as a critical approach to help firms address risks as a result of the COVID-19 pandemic [80,81]. Firms can use IR to report how they cope with the crisis brought about by COVID-19 on farm animal welfare.

This study has some limitations due to a relatively small sample caused by its sectorial nature. In order to enhance the generalizability of the results, future studies could expand the investigation by using an international sample. Furthermore, future researchers may also consider conducting longitudinal studies. Finally, future research could analyse other types of determinants of animal welfare disclosure practices as well as the effects of animal welfare disclosure practices. For instance, the impact of other variables in the governance mechanism on animal welfare disclosure practices, such as gender diversity and independence of the audit committee could be discussed and analysed in future research.

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Appendix A

Table A1. Animal Welfare Disclosure Index.

Category	Items
1. Management Commitment	1.1 Explanation of why farm animal welfare is important to the business. 1.2 Statement of overarching farm animal welfare policy that sets out core principles and beliefs on farm animal welfare and that explains how these are addressed and implemented throughout the business. 1.3 Statement of specific policy positions on key welfare concerns such as close confinement, environmental enrichment, routine mutilations, antibiotic usage, pre-slaughter stunning, and long-distance live transportation.
2. Governance and Management	2.1 Allocation of responsibilities for day-to-day management and oversight of the company's farm animal welfare policy. 2.2 Adoption of farm animal welfare-related objectives, targets and performance indicators, including the allocation of resources and responsibilities for the delivery of these. 2.3 Establishment of appropriate control systems such as employee training on farm animal welfare, corrective action.
3. Leadership and Innovation	3.1 Involvement in research and development programmes to advance farm animal welfare. 3.2 Involvement in industry or other initiatives directed at improving farm animal welfare. 3.3 Promotion of higher farm animal welfare amongst customers or consumers
4. Performance Reporting and Impact	4.1 Reporting on farm animal welfare performance measures such as the proportion of animals free from confinement and from routine mutilations, the proportion of animals pre-slaughter stunned, and permitted live transport times. 4.2 Impact on key farm animal welfare issues, such as the actual proportion of animals free from close confinement, the proportion of animals free from routine mutilations, the proportion of animals pre-slaughter stunned and the proportion of animals transported within specified maximum journey times.

Appendix B

Table A2. Scoring System

Score	Criteria
0	The firm's corporate reports do not include any information relevant to the specific issues
1	The firm's corporate reports provide generic/brief descriptions of the specific issues
2	The firm's corporate reports provide valuable but not sufficient descriptions of the specific issues
3	The firm's corporate reports provide adequate and clear information on the specific issues
4	Coverage of the specific issues can be characterised as "full" in the firm's corporate reports

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