



How Accountability of Australian Farmer Co-operative Members Hinges on the Farm Gate

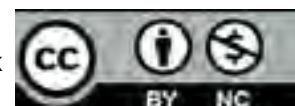
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Co-operatives are at the heart of much agricultural production, serving as crucial conduits in the food supply chain. Their impact on global food networks and contributions to economic and political stability are universally recognised and the United Nations advocates that they play a key role in global food security. This paper contributes a valuable understanding of how an Australian marketing co-operative's farmer members perceive their accountability for fresh produce. Semi-structured interviews are supported by an analysis of the co-operative's documents (1996-2019) and an examination of global regulatory food safety certification programmes. The findings show the "farm gate" operates both as a physical boundary and a metaphorical accountability boundary between farmer members, the co-operative, and supply chains. Inside the farm gate, co-operative members perceived accountability as applying to themselves or their family; the term 'latent accountability' describes this unacknowledged accountability. Additional accountability along the supply chain was identified as incremental accountability to explain how the farmers' accountability is linked to their produce along each step of the supply chain. As the world grapples with issues of food security, the perceptions of farmers and the contribution of co-operatives should be key considerations for planners and policy makers.

Introduction

The necessity for safe quality produce to be delivered into the fresh food supply chain benefits from understanding producer perceptions of accountability. This function has taken on a greater significance with crises such as the global pandemic exposing vulnerabilities in the global supply chain that have been profoundly disruptive to many countries (Free & Hecimovic, 2021). Considered under-researched by business and organisational scholars, the renewed interest in the co-operative form has been linked to their resilience during global crises (Abraham et al., 2022; Birchall, 2013; Birchall & Hammond Ketilson, 2009). As the threat of food insecurity grows, investigations into co-operatives highlight the balance required between consumer access to affordable food and the guarantee of fair compensation for farmers (Crawford, 1997; Kim & Lee, 2010).

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Co-operatives play a strategic role by aggregating members' produce and strengthening their bargaining power (Ortmann & King, 2007) in the distribution, marketing, or purchase phases (Patmore et al., 2021). In Australia and other countries, co-operatives are often poorly understood (Mamouni Limnios et al., 2018; Puusa & Saastamoinen, 2021) despite their contribution to food security, income stability for members, and the overall well-being of rural communities (Patmore & Balnave, 2018a). The marketing co-operative, also known as a distributing co-operative in Australia, is a more commercial form of co-operative capable of distributing profit to co-operative members. Although similar to other co-operatives by virtue of being member-owned, the Australian distributing co-operative has much in common with the proprietary limited company; a key difference being a focus on providing value to members rather than dividends to shareholders. Cotter (as cited in Parliament of Australia Senate Standing Committees on Economics, 2016) suggested co-operatives are an effective tool to address the challenges posed by the vast size of the Australian continent and the disparate and fragmented nature of Australia's agricultural industries.

Little is known, however, about how smaller farmers who supply Australian produce to global supply chains perceive their accountability for their produce, as research is more commonly directed to board and co-operative relationships (Ghauri et al., 2021; VanPeurse et al., 2016). As food security is another 'wicked problem', a term Bebbington and Unerman (2018) use to define a problem that is not easily resolvable, improved understanding of the role and thinking of the primary producer is warranted. Drawing on data from a qualitative, single case study, this paper contributes to such an understanding by exploring the research questions 'how do farmer members of a co-operative perceive their accountability?' and 'to whom are farmer members accountable?'

The study introduces an accountability lens, exploring the concepts of 'latent' and 'incremental' accountability in farm settings and co-operative supply chains, thereby exposing how accountability for food quality stretches from a grower to a distant final consumer. Latent refers to a quality or state, whereby something exists but is not developed or manifest; and may lie concealed or unnoticed. Very few studies address accountability in its latent form (see Dubnick & Frederickson, 2011; Romzek & Dubnick, 1987; Velotti, 2016 for some exceptions), although the terms hidden or dormant accountability may be used in similar ways. Thus, what is latent changes to become active, manifest, or obvious when circumstances change and either become supportive for development or force something into sudden existence (Velotti, 2016). Thus, latent accountability is tacit, and it does not manifest until a norm is transgressed (Velotti, 2016).

The paper is structured as follows. The literature on co-operatives provides background information and context, before a narrowed focus on Australian co-operatives is provided. Next, the literature on accountability is discussed, providing the nexus between co-operatives and accountability. The research design of a single case method is described, and findings are presented, then discussed. The conclusion reflects on the contributions, implications, and limitations of this study and presents recommendations for future research.

Background and Literature

Co-operation confers a survival advantage and has evolved as a competitive tool over the centuries (Greene, 2013). Records dating back to Medieval times show grass-roots organisations practised co-operation in North America, Japan, and Western Europe (Battilani & Schröter, 2012; Curl, 2012; Kurimoto & Dongre, 2020), such as the French *fruitières*, an early form of agricultural co-operative formed in the thirteenth century by cheesemakers in the Jura Mountains (Mélo, 2015). Co-operatives often evolved from social dislocations and developed due to need (Fairbairn, 1994), such as the Rochdale Society of Equitable Pioneers, formed during the Industrial Revolution and credited as the precursor to the modern co-operative movement. Co-operatives challenge conventional understandings by adopting myriad operational structures and definitions that do not neatly fit either for-profit or non-profit frameworks (Birchall, 2011; Levi & Davis, 2008).

The contemporary global definition of a co-operative is an: “autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise” (International Cooperative Alliance [ICA], 2018). This is the definition also used by the United Nations and International Labour Organization. Yet these constructs of member-owned, member-run and member-benefit confuse the operational role of marketing co-operatives, as the co-operative’s focus on members can create tension within commercial market competitiveness (Mamouni Limnios et al., 2018; Novkovic, et al., 2022).

Underpinning the co-operative movement are the co-operative principles and values that spread around the globe and were introduced to Australia as a legacy of British colonisation (Patmore et al., 2023). When Australia became a Federation in 1901, the Constitution enabling the Federation did not transfer legislative power over co-operative formation and regulation to the central government (Apps, 2016). Hence, legislation remains a State-based jurisdiction. The case study co-operative was subject to such State-based law for the duration of the sample period, with the operative legislation, the Co-operatives Act 1997 (Qld) embedding the ICA principles. Between 2012 and 2020, Australian State governments adopted uniform laws known as the Co-operatives National Law.

Co-operatives can be classified according to how the membership base is organised, with the terms primary, secondary, or tertiary used to describe the co-operative structure. This can reflect individual membership (primary), membership restricted to co-operatives (secondary), or an association of co-operatives (tertiary) (ICA, 2017). The goods and services provided by the co-operative offer an alternative or additional classification, with the four main types being agricultural, consumer, worker, and financial (Patmore & Balnave, 2018b). Recently Patmore et al. (2023) proposed the ‘business co-operative’ as a new type due to its unusual structure where members, who would normally be competitors as independent organisational entities, work in a co-operative manner.

Agricultural co-operatives, in which horticultural co-operatives are subsumed, contribute to employment generation, poverty alleviation, income stability for members, and the overall well-being of rural communities in many countries (Patmore et al., 2023; Wanyama, 2014). The significance of co-operatives in food supply chains is highlighted by how the ‘triple burden’ of food insecurity, that is malnourishment, undernourishment, and over nourishment negatively impacts the Earth’s population (Peng & Berry, 2018). Co-operatives, through their inclusive membership structure, provide an opportunity for marginalised communities to ‘join the table’ and represent member interests as distinct from purely commercial interests (Stiglitz, 2019).

The Australian context

Horticultural co-operatives interact at local, regional, state, national, and international levels as their produce moves from the farm to the consumer. In Australia, smaller primary producers often struggle to make a reasonable return, despite adopting efficiencies and world-best practices, due to the influences of climate and policy. The supply of fresh produce into the major Australian supermarkets is controlled via contracts that contain strict quality and quantity specifications. Due to the scale of their operation, supermarkets prefer larger producers capable of supplying high volumes of fresh produce that meet their quality specifications. In Australia, unprecedented and disproportional power in the retail grocery market indicates oligopsony conditions, with two retail giants commanding around 70% of the Australian retail grocery trade (Pulker et al., 2018). By their nature, these supermarket contracts exclude smaller scale primary producers, who are left to trade with wholesale markets that operate in each state or to work collaboratively with other farmers using a business structure such as a co-operative.

Fresh produce for human consumption involves a level of regulatory accountability by producers. Accountability flows onto farms through international food standards that work toward safe food for consumers everywhere (Bomba & Susol, 2020). The movement of fresh

food along international supply chains must comply with the Global Food Safety Initiative (GFSI). The recent increase in accountability via compliance auditing to food standards is linked with a shift to external third parties, often in a not-for-profit organisational structure (Koop & Hanretty, 2018; Mills & Koliba, 2015) that has accelerated since the 1990s (Jordana et al., 2011).

While farmer participation in Australian fresh food accreditation programmes is optional, accredited farmers must comply with the Food Standards Australia and New Zealand (FSANZ) Food Standards Codes that align with the GFSI, and the Harmonised Australian Retail Produce Scheme (HARPS) that streamlines food safety requirements across Australia's major retailers. On-farm, Australia's Freshcare accreditation programme ensures growers meet recognised assurance standards for fresh produce, while Hazard Analysis and Critical Control Point (HACCP) accreditation identifies and addresses on-farm packing hazards. Failure to meet accreditation requirements can lead to market access loss, highlighting the regulatory impact of accountability.

Accountability

Theorising accountability has shifted over time from accountability to whom and how, to include consequences and processes of accountability (Mashaw, 2006). This reflects changes in how society understands accountability and broader accountability frameworks. Accountability is a fluid and multi-faceted concept, with an elusive meaning and plural interpretations found in the researcher lexicon (Bovens, 2007a; Williamson et al., 2017). While the literature provides little consensus on a definition of accountability, the concepts of being answerable, transparent, reporting, and accepting responsibility and consequences, appear in most working definitions (Bovens, 2007b; Koppell, 2005). This concept is captured by Bovens' (2007a) suggestion that accountability conveys a sense of trustworthiness, however, individual interpretation of accountability makes the definition somewhat elusive. Farmers' perceptions of accountability to the consumer for their produce, with accountability defined as "the means through which individuals and organisations are held externally to account for their actions" (Ebrahim, 2003, p. 194), is the focus of this article.

Conceptual frameworks provide a structure through which to analyse accountability. Contextual questions frame accountability and these questions are considered essential ingredients of a value-added theoretical contribution (van de Ven, 1989). They are adapted into conceptual frameworks of accountability (Ebrahim, 2016; Mashaw, 2006) that allow comparison of accountability between similar or different organisational types, and across time periods. Six characteristics are present in any accountability relationship, namely "who, to whom, about what, through what processes, by what standards, and with what effect" (Mashaw, 2006, p. 118). This framework provides sufficient flexibility to accommodate accountability regimes across private markets, public governance and social networks. The use of accountability frameworks and mechanisms allows insight into accountability relationships, although tension and conflict arise due to the dual nature of co-operatives (Novkovic et al., 2022). As 'clients' in the co-operative can also be owners, this makes accountability relationships complex. Yet, the ability to hold the organisation to account remains evident (Kilby, 2006; Najam, 1996), although weak internal democracy can lead to a lack of managerial accountability to co-operative members (Somerville, 2007).

Inconsistent and varying definitions of accountability support the oft-cited phrase of Sinclair (1995) describing accountability's chameleon-like nature. This ability to change appearance in response to the environment or context also results in the ability to be hidden, invisible, and not noticed; and can refer to its elusive and ambiguous quality. Latency is often understood in the literature as an external variable that affects accountability, rather than as a quality of accountability itself. Latency is also linked to the idea that something can be hidden in plain sight, or so obvious that it is unnoticed but can become active, manifest, or obvious when circumstances change (Velotti, 2016).

This study contrasts and extends previous research that focused on the co-operative supply chains and executive relationships (VanPeursem et al., 2016) by examining a wider array of accountability relationships with producers. To the best of our knowledge, no previous study has researched accountability in such co-operative based relationships. This research investigates the accountability practices of this form of organisation, informed by empirical evidence.

Methods

The fruit marketing/distributing co-operative purposively selected for this research was formed in 1996 when 22 fruit farmers joined to optimise revenue from the sale of their produce. The co-operative represented avocado and citrus farmers in South East Queensland (SEQ), Australia, a region with a sub-tropical climate. Its mission was to market tropical fruit brands globally, satisfying and exceeding customers' expectations for premium fruit. In 2019, the co-operative's website disclosed activities including an eight-fold increase in membership since 1996, and expansion from regional to international sales in 2001. Commercial quantities of fruit represented in the co-operative were predominantly avocados and limes, with smaller quantities of lychee, custard apple, stone fruit, and dragon fruit.

The selection of the co-operative as an exemplar was justified based on its advertised growth in membership and markets. However, information in the public domain (beyond the company website) was sparse. Membership numbers were over 150 in 2015, having grown from 22 in 1996. At the time of data collection, annual membership cost AUD \$400 and included a joining fee (\$200) and 100 fully paid \$2.00 co-operative shares. A five per cent levy applied to all fruit sold covered the co-operative's marketing (operating) costs with additional levies applied per tray for sales promotion (15 cents), and insurance (5 cents).

Endorsement from the co-operative's board members and executive officer assisted recruitment of research participants from the co-operative membership. An invitation letter and survey link provided informed consent from interested co-operative members, as well as demographic and fresh food production data. A data matrix of farmer characteristics was built providing an overview of the farms, farmers, and farm locations in SEQ. In total, 13 responses were received. Twelve farmers from SEQ were interviewed however the thirteenth farmer became uncontactable after cyclones hit NEQ. The results reinforce the findings of VanPeursem et al. (2016), with members of rural co-operatives difficult to access due to their geographic distribution.

Data collection

Primary data collection occurred during nine field trips, with 3,219 kilometres travelled across SEQ in January and February 2019. University ethics approval was gained prior to commencing primary data collection, and a human ethics consent form was reviewed and signed by participants before each interview commenced. Semi-structured interviews were conducted on farmers' properties providing an informal setting where participants were relaxed and comfortable, allowing for genuine conversations and honest and open responses to questions (Irvine & Gaffikin, 2006). The 12 interviews with 20 participants were conducted in farm sheds, on verandas, or around kitchen tables: four with individual farmers, and eight with two farmers. This in-person, in-situ approach reaped rich insights into farmer perceptions of accountability. The researchers are grateful for the participants' time and interest in a project that provided valuable insights into a private and often difficult to access cohort.

Gender of farmer participants was evenly distributed with ten males and ten females interviewed, reflecting that fruit growing on small to medium-sized properties is a family business. Age of participants was skewed toward older farmers, with 70% over the age of 60 and 30% under. Years of experience growing fruit was not correlated to participant age. On four properties, two generations of farmers were involved in fruit production; two father-daughter combinations and two father-son combinations. The remaining properties involved one generation of farmers, commonly in a spousal relationship.

Farmers' property size was gauged by the number of trees currently producing fruit, not financial data thus avoiding enquiry into the financial and private affairs of farmers. Tree numbers allowed valid comparison across the sample. Farm labour capacity was cited as 800 trees per worker by several farmers. Five small (<2,000 trees) and seven medium-sized (> 2,000 trees) family farms were identified, with ten farmers interviewed in each farm size category. Again, gender was evenly distributed between farmers on small and medium-sized farms. Members were further categorised by their length of co-operative membership; either greater than or less than ten years.

The interviewed members revealed a range existed in farmer and property attributes such as farm size, fruit produced, fruit growing experience, and work experience both on and off the property. Co-operative members broadly aligned with Australian trends as most likely to be Australian born, and to have a small farm size, predominantly male (77%), 58 years old with 37 years of experience in farming, with 80% of their income derived from agricultural production (Australian Bureau of Statistics, 2020). Table 1 summarises the participant interview data.

Table 1: Key descriptive farm, farmer, and interview data

ID	Main type of fruit grown	Number of trees grown	Co-operative membership (yrs)	Interview length (mins)	No. people interviewed
1	Avocado	500	13	50	2
2	Avocado	800	19	79	2
3	Avocado	1,000	19	86	2
4	Avocado	1,500	8	49	2
5	Avocado	2,100	17	49	1
6	Avocado	2,200	7	54	1
7	Avocado	3,000	16	63	2
8	Avocado	3,200	10	71	2
9	Citrus	4,000	2	66	1
10	Citrus	4,000	4	73	1
11	Citrus	4,000	4	57	2
12	Other	300	2	62	2

Full access to the company archives was granted to the lead researcher with 165 documents curated and read before contacting growers (see Table 2). The knowledge gained from the documents proved valuable during interviews as it conferred legitimacy to the researcher, which was observed when growers were informed the board had made this data available. The collection of secondary data established and enhanced the trustworthiness of the findings by enabling participants' perspectives to be framed against the co-operative's financial and governance history.

Table 2: Secondary data collected from the co-operative archives

Secondary data collected and number of items (n)	Time period
AGM minutes (11)	2007-2014, 2015-2018
Chair reports (18)	2001-2018
Board minutes (121)	2005-2018
Financial statements (12)	2007-2018
Rules, grower detail information pack, grower membership application form, sundry reports, and newsletters	2001-2019
Fruit quality and product specifications, industry regulations sourced from the Internet	2010-2020

Data analysis

The overarching research question *How do grower members of a horticultural marketing co-operative perceive themselves as accountable?* was explored using embedded case study methodology, as each participant was a co-operative member and an entity in itself (individual, partnership, company). Primary interview data collected was thematically analysed using Mashaw's (2006) coding framework of to whom, for what, how, by what standards, and with what liability mechanisms or consequences. This paper reports on who (the farmers), to whom they are accountable (the consumer), and for what (fruit quality). All interviews were audio recorded, and field notes were taken during and immediately after each interview. Additional notes that captured thoughts or clarified the data were added during the transcription process. Interviews were transcribed using the automated speech-to-text algorithms adopted by artificial intelligence software program Trint, then carefully checked against the original audio recording.

The coding process was iterative and involved analysis and extraction of data into accountability codes. Using the research questions to frame the coding allowed nodes to be identified with a natural fit to the data. A final round of manual coding allowed reflection on the entire body of coding under three aggregated accountability headings: social, regulatory, and transactional. Social referred to the accountability for one's actions in the local environment such as to neighbours, the local community, the environment, and the public. Here the nodes "accountability to no one" and "to family" were unexpected and due to their importance were retained as separate categories. Transactional reflected accountability from farmer interactions across the supply chain, in processes including growing, packing, transporting, and selling fruit. Lastly, the regulatory node captured data related to food accreditation, government departments concerned with water provision, environment, land management, or workplace and worker safety.

Findings

Findings from grower interviews revealed several unexpected twists in grower attitudes to co-operatives and challenged pre-conceived ideas on growers' accountability, with several key findings emerging from the interviews (grower responses are shown as G followed by a three-digit number). First, a latent form of accountability for producers was evident, with the farmers not acknowledging their accountability in fresh food production. Second, an incremental accountability was identified along the supply chain that connected back to the farmer. Third, the farmers did not have a sense of ownership of the co-operative, viewing it no differently to other service providers, despite having a stake in the co-operative.

To explain the latent accountability, it is useful to review the interview protocol. Each interview began with an outline of the project, farmers were invited to ask the lead researcher questions, then 'icebreaker' questions followed exploring the farmer's knowledge of the co-operative, its history, mission, purpose, why the farmer joined the co-operative, and what role the farmer played in the co-operative. Next were the accountability questions, phrased in the context of "as a co-operative member, when you are making decisions related to supplying the co-operative, what stakeholders or organisations are involved" (who is accountable) and then "who might you owe an explanation to for your decision" (accountability to whom)? The questions were deliberately open-ended to encourage conversation around production, regulatory, community, or transactional decision-making. If the farmer sought clarification with the question, it was rephrased either as, "who would you be accountable to when making decisions?", "who might you owe an explanation to for a decision?", or "who do you owe a responsibility to with your decision?" This line of questioning elicited the response "No one" or "Family" in every one of the 12 interviews. Farmers all stated they were accountable only to themselves and their family.

These findings were unexpected as food production is a tightly regulated industry and the researchers expected farmers to perceive accountability to the regulators. After much reflection, the responses were interpreted by context, which will assist readers in other countries to

understand the farmers' responses. For example, the population of Australia is one third of the United Kingdom, and the land mass is 31 times larger. The United States has a larger landmass and a population 30 times that of Australia. As a comparison, the average number of people per km² in Australia is 3.5, in the USA 37.4 and the UK 280.9 (Ritchie & Mathieu, 2019). In Australia, regulatory authorities do not visit farmers to monitor fruit growing practices, they visit only when a food safety breach occurs. G111's evidence of the government's biosecurity staff visiting when his fruit showed traces of a non-registered chemical, later traced to the packing shed, is evidence of the relationship that exists with authorities. Farmers are left alone until a problem is detected, contributing to the farmer's belief that they have autonomous decision-making and are not accountable to anyone beyond themselves or their family. Although farmers were production compliant, for example using recommended chemicals and observing withholding periods, this was only linked to regulators by a reactive accountability. They viewed their decision-making as autonomous and were adamant that their accountability was to themselves or their family. The statement "Every farm, it's a kingdom. So, everybody's a king on their farm" (G101) gave context and insight into the farmer mindset and was confirmed by other farmers through responses such as "No, it's just us" (G109 and G110), "We make our own decisions" (G115), and "Only each other — there is no one else involved in what we do. We make those decisions ourselves" (G123).

However, probing questions around farmer accountability later in the interviews revealed detailed awareness of accountability to regulatory, transactional, or social/community stakeholders. Regulatory stakeholders included federal government departments, food safety authorities, industry bodies including levy bodies, local council, water board, other utilities, and Workplace Health and Safety (WHS). These regulatory stakeholders shared the ability to impose a level of control over farmers' activities, with farm size dictating the degree of interaction. Larger farms employing staff were more likely to have WHS obligations. G110 explained accountability to fruit pickers as "Well we have to explain the farm, you know, legalities and work cover and all that business and the machinery — so we give them an induction you might say". The increased accountability was wryly noted by G116 with his comment "Years ago we didn't have to worry about any of that. Now you have to have a record of when the toilets are cleaned, and the floors are swept."

The second stakeholder category, transactional stakeholders, included the co-operative, wholesale market agents, banks, packing houses, fruit pickers, staff, supermarkets, and transport companies. From the farmer point of view, it was obvious that all stakeholders in the supply chain provided a service, and transactional stakeholders were strongly represented in farmer responses, signalling the commercial nature of the marketing co-operative. The co-operative was identified as providing valuable services through pooling, marketing and sale of fruit, provision of market information, freight, and insurance services. Consequently, the farmer accountability relationship with the co-operative was focused on services: "we use the co-operative, and I use that word use, [use] them because that's what we do, and we pay them for that service that we use" (G109). Similar sentiments were expressed by other farmers with motivation for engagement with the co-operative being financial: "the back pocket is always number one" (G101).

In contrast, a different attitude appeared regarding accountabilities to social stakeholders. Farmers' comments had a normative focus and related to their accountability to neighbours, community, and the environment. This accountability was different from the fee-for-service focus evident in the transactional stakeholder category. Most comments focused on neighbours, with 18 comments from ten farmers ("It is important to have good neighbours," G113), as well as three comments about community ("... a community awareness that you look after your neighbour a bit," G114).

Social/community stakeholders were classified as either the co-operative community or the local community. Separating these two communities was the physical distance involved. The local community, defined as stakeholders or neighbours in the immediate vicinity of the farmer, were more likely to share regular interactions. Neighbours, as a subset of the

local community, featured strongly in 11 of 12 farmer interviews although comments were often entwined with environmental issues. Farmers assigned importance to being a good neighbour, although examples of not-so-good neighbours, such as corporate-owned farms, were provided. G114 and G115 explained how they took particular care using spray on their property so that no spray drifted onto a neighbouring organic property. This felt sense of responsibility also extended to the co-operative community. Most members of the co-operative met only at the annual general meeting or a co-operative training event unless they lived near other members. Occasionally farmers referred to other farmers during interviews, confirming that informal networks existed: “if there are farmers who are sending crap onto the market, that affects all of us, so I don’t want to be that farmer because farmers talk” (G121). These participants’ responses detailed above, addressing the first research question “to whom are farmers accountable?” reveal a universal failing to acknowledge accountability beyond their partner, spouse, and/or family. This is despite the clear awareness of multiple transactional, regulatory, and social stakeholders revealed later in the interviews.

Provenance of fruit and traceability are key components of the food accreditation system although systems are reactive rather than proactive. This was demonstrated in a recent Australian incident where a packing house employee contaminated strawberries with needles (Schaefer & Scheitrum, 2020). Systems were evident on-farm, and in the co-operative, to trace every box of fruit back to the packing house and the farm of origin. Furthermore, some packing houses had systems’ monitoring, which identified the worker responsible for packing or picking the fruit in each box, and breaches were treated seriously and swiftly.

Co-operative members were required to meet documented fruit safety and quality standards. It was evident some farmers had a deep sense of responsibility and connection to the quality of the produce they grew, extending beyond the documented standards to reflect a personal pride and commitment: “When I pack a tray of fruit if it says premium on the outside of the box then it is premium” (G111) or “When I was packing in the shed, I couldn’t tell you the amount of photos that we’ve got down there of boxes of fruit and how beautiful they look. And that’s the pride in your product” (G123). Responses showed farmers clearly understood their accountability to produce safe quality fruit and their duty of care to their employees and the environment. However, flexibility in how they interpreted their accountability to supply the co-operative suggested different attitudes existed. Loyal farmers who “send all their fruit” to the co-operative were annoyed by those farmers “supplying other marketers and essentially playing the field” (G122) or by the co-operative pooling inferior quality fruit that financially made “all farmers suffer” and “very little was done about making that particular farmer toe the line” (G122).

Evidence of power asymmetry in the marketplace revolved around payment for fruit, with the farmers often feeling powerless as the fruit moved along the supply chain. Most co-operative members recounted negative experiences; “fruit doesn’t go missing but payments can” (G116), with frustration evident at the limited action an individual farmer could take. The co-operative provided a member insurance programme funded by a small levy on every tray of fruit sold that covered any loss of fruit in the market. Co-operatives by their design can overcome this market failure and work in the best interest of the farmers, however, the case study co-operative revealed its chameleon-like nature when at times it worked for itself and not its farmer members. By way of example, fruit produced by G111 was held back for one week to satisfy a supermarket contract held by the co-operative, with the farmer receiving \$15 not \$65 a tray “So I dropped \$50 dollars [a tray] on a couple of tons of limes because he [the co-operative general manager] wanted to look after Coles [a supermarket chain] and not look after me”.

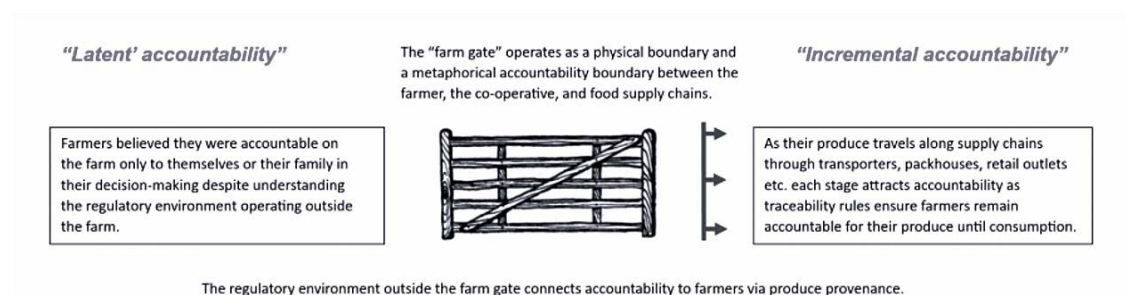
This power asymmetry occurred along the supply chain. Farmers gave examples of incorrect temperature during transport and storage, and poor stock control in the cool store, leading to fruit being discarded and the farmer not paid. Thus, farmers perceived that they were powerless to control the quality of their produce once it left their farm and had no means of holding the co-operative accountable for these failures. In the next section these key findings around accountability are reviewed and discussed in the context of the literature.

Discussion: Accountability and the Farm Gate

Farmer accountability

An interesting tension unfolded between fruit farmers who believed they were accountable only to self or family, and the regulatory environment. The unusual nexus between these two worlds was the farm gate. Inside the farm gate, latent accountability described farmer perceptions of not being accountable to anyone beyond their family. Beyond the farm gate, incremental accountability described the accountability that accompanies fruit along the food supply chain. Fruit quality became a proxy for accountability and triggered a responsibility for produce provenance — tracing produce backwards along the fresh food supply chain to the producer. Examples of our interpretation of latent and incremental accountability are shown in Figure 1.

Figure 1: Model of farmer accountability, showing latent accountability on-farm and incremental accountability along the fresh food supply chain



Farmer attitudes of 'our fruit' were largely correct until fruit went out of the farm gate and entered the food supply chain. At that point, the fruit became the property of the co-operative although accountability remained with the grower. A range of accountabilities was triggered and became manifest under the food safety management systems that underpin the operation of a horticultural marketing co-operative. There is a clear contradiction here with the farmer belief of not being accountable inside the farm gate.

Produce accountability

A lack of recognition or acceptance of accountability inside the farm gate was confirmed by probing interview questions with farmers around their obligations under food safety accreditation programmes. All farmers had a good understanding of fruit provenance and traceability requirements, and how farm practices could trigger fruit quality or food safety concerns, yet they were adamant that on their farm they were accountable to no one. Smaller farmers' decision-making on-farm was personal or family based as well as highly dependent on finances. The decision to fertilise, irrigate, spray, or carry out other agronomic practices was made by the farmer, sometimes with advice from consultants. A nuance existed, explained by the interviewee's statement "everybody's a king on their farm" (G101). Thus, the attitude of 'it's my farm and I make the decisions' is understandable.

Transactional, stakeholder, and regulatory accountability in the fresh produce supply chain were evidenced in the fresh food accreditation programme. Fruit quality, although a simple concept, repeatedly surfaced as a proxy for accountability along the food supply chain from farmers to the co-operative to individual consumers. Farmers were answerable for fruit quality, it underpinned co-operative operations, and manifested along the supply chain with the consumer ultimately selecting and purchasing fruit based on personal quality preferences. The changing nature of this accountability is reminiscent of the chameleon-like nature of accountability defined by Sinclair (1995). Farmers remained accountable for fruit along the food supply chain, well past their physical ownership and control. This incremental accountability accumulated at each

stage of the food supply chain and acted as a form of regulatory accountability. The incremental stages are depicted in Figure 2 below.

Figure 2: Depictions of accountability for produce in fresh food supply chains



Conclusion

The research question “To whom are farmers accountable?” was operationalised through interview question of “to whom might you owe an explanation to for a decision?” or rephrased as “to whom do you owe a responsibility?” This line of questioning elicited the response “No one” or “Family” in every interview. The unexpected answer can be explained by context. In Australia, farmers are largely left alone to grow their fruit having little interaction with regulators. The exception is when a food safety breach occurs, creating a reactive response from regulators. In this context, the farm gate became a metaphorical barrier between the farmer, their family, and the outside world. Inside the farm gate, on a day-to-day basis, they were answerable to no one, their decisions were largely unquestioned, accountability existed but was latent, only manifesting after fruit passed through the farm gate. The unexpected finding of farmers not perceiving themselves as being accountable, coined *latent accountability*, was linked with farmers’ perception of their farm as their kingdom where accountabilities existed but were not acknowledged.

Despite not acknowledging an on-farm accountability, the co-operative members understood that future sales and income were contingent on stakeholders far beyond the farm gate. As the fresh fruit produce moved into the food supply chain through the aggregation, sales, and distribution processes of the co-operative, farmers became collectively responsible for the quality and safety of their produce and shared reputational and compliance burdens imposed by distant regulators and consumers. The defensiveness of farmers regarding their on-farm autonomy is perhaps indicative of frustrations that the financial reward for their work is influenced by factors beyond their front gates and their control. Although the farmer relinquished physical ownership of the fruit when it entered the commercial food supply chain, an ‘accountability anxiety’ existed due to the very real possibility of a financial penalty developing for farmers due to negligence in the handling and storage of the produce further along the supply chain.

The insights gained by conducting in-person interviews with farmers in their own setting identified flaws in understanding the key co-operative principle of member economic participation. Failure to adhere to this principle suggested members relied on a personal judgement of the co-operative’s value proposition in their interactions. Despite their shared ownership of the company, members saw the co-operative as providing a service, no different to a freight company or packing house. This behaviour was puzzling, as co-operative principles require members economic participation. The behaviour of some members who put fruit into the

marketplace with an agent, thus actively competing against the co-operative, and ultimately their own interests, was unexpected. Their choice highlighted that a deeper sense of ownership was not evident in this co-operative, and that it was not operating as a true co-operative form. The fierce sense of ownership and autonomy that growers evidenced through latent accountability on-farm suggests that a collective accountability to their fellow co-operative members for fruit quality was not manifest.

The accountability relationships between co-operatives, members, the food supply chain, and consumers raises possibilities for future inquiry. As the United Nations advocates for co-operatives to play a key role in achieving the Sustainable Development Goals (United Nations Department of Economic and Social Affairs, 2016), understanding the contribution of farmers is important, as food safety and security measures are entwined with the Goals, making traceability of food provenance a 'hot topic'. Therefore, these findings that acknowledge co-operative farmer members' latent accountability and frustration with incremental accountability is a practical contribution to the global understanding of co-operatives.

Postscript

Within a year of the interviews being conducted, the co-operative was placed in Voluntary Administration (a form of voluntary insolvency). The result of this process was the determination that the organisation was unable to pay its debts from its current assets, and it ceased to operate. The weak internal democracy suggested by Somerville (2007) was evident and manifested in poor co-operative governance that contributed to the demise of the co-operative.

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