AUSTRALIAN CONSUMERS’ AWARENESS OF ANIMAL PRODUCTION

The relationship between awareness, concern for animal welfare and the purchasing of animal-based foods

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ABSTRACT

Changes in animal production over the last several decades, whilst enabling a reliable supply of animal-based protein, have caused concern among consumers and stakeholders within the food industry regarding the impacts of farming on animal welfare, the environment, and human health. Many people consider animal welfare a public good, yet the role of government intervention to protect it is limited and therefore market forces are currently acting as the major driver of improvements to welfare standards. It is important to understand consumer attitudes towards animal welfare and whether concerns and preferences are directly translated into purchasing behaviours and demand for higher welfare products. Consumers receive information about animal welfare from a wide range of sources yet the capacity for information to change attitudes, beliefs, and purchasing behaviours remains undetermined.

This dissertation presents an examination into consumer awareness of, and attitudes towards, farm animal welfare in Australia. Through questionnaires, a quasi-experimental study, and stakeholder interviews, I collected quantitative and qualitative data to inform an analysis of consumer and stakeholder perspectives of the farm animal welfare issues resulting from intensive production.

A questionnaire completed by 894 people (chapter three) was utilised to determine the current level of awareness that consumers have of farming in Australia among other variables of interest such as concern for animal welfare, product preferences, attitudes, and social climate. Responses were collected using online and mail sampling. The quasi-experimental component of this dissertation (chapter four) analysed the change in key variables pertaining to consumer decision-making over time across a sample of 106
participants. The participants were provided information on the labelling standards, animal welfare, and environmental and health impacts of modern farming systems. Subsequently, they provided feedback on the effect of this information both directly and indirectly. In the final phase of data collection (chapter five), nine stakeholder representatives from the farming industry, retailers, and advocacy groups were interviewed and their perspectives on farming were interpreted using content analysis.

The findings from the research presented in this dissertation show that consumers generally lack awareness of livestock production and its implications for the welfare of animals. Consumers are familiar with some welfare issues and indicate concern for the ethical dimensions of modern food production but experience confusion over suitable alternatives to intensively farmed foods and the meanings behind product labels. The stakeholder interviews furthered this conclusion by affirming that an improvement in farm animal welfare requires effective communication between producers, retailers and consumers whilst ensuring animal welfare legislation is comprehensive, enforceable and made clear to consumers.
STATEMENT OF ORIGINALITY

This work has not been previously submitted for a degree or diploma in any university.
To the best of my knowledge and belief, this dissertation contains no material previously published or written by another person except where due reference is made in the dissertation itself.

Sally Healy

14th August 2018
ABSTRACT .................................................................................................................................................. i
STATEMENT OF ORIGINALITY .................................................................................................................. iii
CONTENTS PAGE ........................................................................................................................................ iv
LIST OF TABLES .......................................................................................................................................... ix
LIST OF FIGURES ....................................................................................................................................... x
ACKNOWLEDGEMENTS ............................................................................................................................ xii
LIST OF PUBLICATIONS ........................................................................................................................... xiii
Published book chapters ................................................................................................................................. xiii

CHAPTER ONE OVERVIEW OF THE STUDY ......................................................................................... 1
  1.0 Introduction ........................................................................................................................................ 1
  1.1 Motivation of the research .................................................................................................................... 5
  1.2 Research objectives ............................................................................................................................ 6
  1.3 Philosophical and theoretical orientation ............................................................................................ 8
    1.3.1 Critical realism ............................................................................................................................... 8
    1.3.2 Citizens and consumers ................................................................................................................. 9
  1.4 Potential contributions of the dissertation .......................................................................................... 10
  1.5 Structure of dissertation .................................................................................................................... 11

CHAPTER TWO LITERATURE REVIEW ............................................................................................... 13
  2.1 Introduction ......................................................................................................................................... 13
  2.2 Animal farming past and present ...................................................................................................... 14
  2.3 Impacts of intensive farming ............................................................................................................. 18
    2.3.1 Environment ............................................................................................................................... 18

Published book chapters:.................................................................................................................................
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3.2 Human health</td>
<td>21</td>
</tr>
<tr>
<td>2.3.3 Animal welfare</td>
<td>23</td>
</tr>
<tr>
<td>2.4 Restoring animal welfare to animal production</td>
<td>31</td>
</tr>
<tr>
<td>2.5 Consumer perceptions of intensive animal production</td>
<td>34</td>
</tr>
<tr>
<td>2.5.1 Concerns about animal welfare</td>
<td>36</td>
</tr>
<tr>
<td>2.5.2 Consumer awareness of farm animal welfare</td>
<td>38</td>
</tr>
<tr>
<td>2.5.3 Sources and opportunities for the provision of animal welfare information</td>
<td>43</td>
</tr>
<tr>
<td>2.5.4 Product labelling and transparency</td>
<td>44</td>
</tr>
<tr>
<td>2.6 Stakeholder perceptions of animal welfare</td>
<td>45</td>
</tr>
<tr>
<td>2.7 Consumer behaviour and barriers to ethical consumption choices</td>
<td>47</td>
</tr>
<tr>
<td>2.8 Theoretical perspectives</td>
<td>51</td>
</tr>
<tr>
<td>2.8.1 Jager’s meta-model of human behaviour</td>
<td>53</td>
</tr>
<tr>
<td>2.8.2 The information deficit model of behaviour change</td>
<td>57</td>
</tr>
<tr>
<td>2.8.3 The general theory of marketing ethics</td>
<td>58</td>
</tr>
<tr>
<td>2.8.4 The theories of reasoned action and planned behaviour</td>
<td>60</td>
</tr>
<tr>
<td>2.9 Conclusion</td>
<td>65</td>
</tr>
</tbody>
</table>

CHAPTER THREE CONSUMER ATTITUDES AND AWARENESS OF ANIMAL FARMING

3.1 Introduction                                                        | 69   |
| 3.2 Chapter aims                                                       | 72   |
| 3.3 Methods                                                            | 74   |
| 3.3.1 Methodological background                                        | 74   |
| 3.3.2 Survey instrument design                                         | 75   |
| 3.3.3 Sampling design                                                  | 80   |
| 3.4 Results                                                            | 81   |
| 3.4.1 General results                                                 | 81   |
| 3.4.2 Behaviour (diet)                                                 | 85   |
APPENDIX A. SURVEY 3........................................................................................................219
APPENDIX B. SURVEYS 1 and 5..........................................................................................240
APPENDIX C. WEBSITE REVIEW SURVEY........................................................................260
APPENDIX D. INTERVIEW INFORMATION SHEET..............................................................265
APPENDIX E. INTERVIEW INFORMATION SHEET..............................................................268
BIBLIOGRAPHY................................................................................................................270
LIST OF TABLES

TABLE 3.1 SURVEY INSTRUMENT VALIDITY AND RELIABILITY ................................................................. 77
TABLE 3.2 SURVEY INSTRUMENT VARIABLES AND DESCRIPTIONS .................................................... 79
TABLE 3.3 SOCIO-DEMOGRAPHIC CHARACTERISTICS OF ONLINE AND MAIL QUESTIONNAIRE RESPONDENTS ......................................................... 81
TABLE 3.4 AWARENESS STATEMENTS AND PERCENTAGE OF AGREEMENT ................................................. 89
TABLE 3.5 MEAN ATTITUDES AS RELATED TO LEVELS OF CONCERN ................................................. 102
TABLE 3.6 MEAN AWARENESS SCORES AS RELATED TO DIET ................................................................. 104

TABLE 4.1 TARGET SAMPLES FOR RECRUITMENT ................................................................................... 122
TABLE 4.2 SURVEY INSTRUMENT VALIDITY AND RELIABILITY ............................................................... 128
TABLE 4.3 RESPONDENTS' OPINIONS OF WEBSITE CONTENT ............................................................. 140
TABLE 4.4 PREFERRED SOURCES OF INFORMATION .................................................................................. 145

TABLE 5. 1 DESCRIPTION OF INTERVIEW PARTICIPANTS ............................................................................ 172
TABLE 5.2 THEMES GENERATED FROM THE QUALITATIVE DATA .......................................................... 176
LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Jager’s Meta Model of Consumer Behaviour (Jager, 2000, p. 58)</td>
<td>53</td>
</tr>
<tr>
<td>2.2</td>
<td>The Information Deficit Model</td>
<td>58</td>
</tr>
<tr>
<td>2.3</td>
<td>Hunt &amp; Vitell’s General Theory of Marketing Ethics (Hunt &amp; Vitell, 2006)</td>
<td>59</td>
</tr>
<tr>
<td>2.4</td>
<td>Theory of Planned Behaviour (Ajzen, 1991)</td>
<td>61</td>
</tr>
<tr>
<td>3.1</td>
<td>Geographic Distribution of Online Questionnaire Respondents (N = 837)</td>
<td>84</td>
</tr>
<tr>
<td>3.2</td>
<td>Geographic Distribution of Mail Questionnaire Respondents (N = 57)</td>
<td>84</td>
</tr>
<tr>
<td>3.3</td>
<td>Respondents’ Reasons for Being Vegetarian or Vegan (N = 136)</td>
<td>86</td>
</tr>
<tr>
<td>3.4</td>
<td>Respondents’ Frequency of Consuming Meat (Including Poultry and Seafood)</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>(Including milk, cheese, yoghurt)</td>
<td></td>
</tr>
<tr>
<td>3.5</td>
<td>Self-rated Awareness of Farming from Both Mail and Online Questionnaires</td>
<td>88</td>
</tr>
<tr>
<td>3.6</td>
<td>Level of Understanding of Labels on Animal-based Foods</td>
<td>88</td>
</tr>
<tr>
<td>3.7</td>
<td>Attitude Item Responses from Online Questionnaire</td>
<td>93</td>
</tr>
<tr>
<td>3.8</td>
<td>Attitude Item Responses from Mail Questionnaire</td>
<td>94</td>
</tr>
<tr>
<td>3.9</td>
<td>Attributes and Rankings for Eggs — Online Questionnaire</td>
<td>95</td>
</tr>
<tr>
<td>3.10</td>
<td>Attributes and Rankings for Eggs — Mail Questionnaire</td>
<td>95</td>
</tr>
<tr>
<td>3.11</td>
<td>Attributes and Rankings for Pork — Online Questionnaire</td>
<td>96</td>
</tr>
<tr>
<td>3.12</td>
<td>Attributes and Rankings for Pork — Mail Questionnaire</td>
<td>96</td>
</tr>
<tr>
<td>3.13</td>
<td>Attributes and Rankings for Chicken — Online Questionnaire</td>
<td>97</td>
</tr>
<tr>
<td>3.14</td>
<td>Attributes and Rankings for Chicken — Mail Questionnaire</td>
<td>97</td>
</tr>
<tr>
<td>3.15</td>
<td>Respondents’ Importance of Purchasing High Welfare Products</td>
<td>98</td>
</tr>
<tr>
<td>3.16</td>
<td>Respondents’ Perceived Importance on Having Access to Farming Information</td>
<td>99</td>
</tr>
<tr>
<td>3.17</td>
<td>Respondents’ Ease in Identifying Higher Welfare Products</td>
<td>99</td>
</tr>
<tr>
<td>3.18</td>
<td>Respondents’ Social Pressure to Purchase High Welfare Products</td>
<td>100</td>
</tr>
<tr>
<td>3.19</td>
<td>Respondents’ Perceived Behavioural Control</td>
<td>100</td>
</tr>
<tr>
<td>3.20</td>
<td>Respondents’ Perception of Social Norms</td>
<td>101</td>
</tr>
</tbody>
</table>
FIGURE 4.1 RESPONDENTS’ SELF-RATED LEVEL OF AWARENESS OF ANIMAL PRODUCTION FOR QUESTIONNAIRES ONE AND FIVE
.................................................................................................................................................. 133

FIGURE 4.2 RESPONDENTS’ LEVEL OF SATISFACTION WITH THE AVAILABILITY OF INFORMATION ON ANIMAL WELFARE IN
AUSTRALIA......................................................................................................................................... 133

FIGURE 4.3 LEVELS OF UNDERSTANDING OF EGG, PORK AND CHICKEN PRODUCTS AS REPORTED IN QUESTIONNAIRES ONE AND
FIVE.................................................................................................................................................. 134

FIGURE 4.4 CONCERN FOR ANIMAL WELFARE — WEBSITE 1 QUESTIONNAIRE RESULTS ......................................................... 135

FIGURE 4.5 CONCERN FOR ANIMAL WELFARE — WEBSITE 2 QUESTIONNAIRE RESULTS ......................................................... 136

FIGURE 4.6 CONCERN FOR ENVIRONMENTAL IMPACTS — WEBSITE 1 QUESTIONNAIRE RESULTS .................................................. 136

FIGURE 4.7 CONCERN FOR ENVIRONMENTAL IMPACTS — WEBSITE 2 QUESTIONNAIRE RESULTS .................................................. 137

FIGURE 4.8 CONCERN FOR HEALTH IMPACTS — WEBSITE 1 QUESTIONNAIRE RESULTS ............................................................ 137

FIGURE 4.9 CONCERN FOR HEALTH IMPACTS — WEBSITE 2 QUESTIONNAIRE RESULTS ............................................................ 138

FIGURE 4.10 REASONS FOR PURCHASES — QUESTIONNAIRE 1 ................................................................................................. 139

FIGURE 4.11 REASONS FOR PURCHASES — QUESTIONNAIRE 2 ................................................................................................. 140

FIGURE 5.1 STAKEHOLDERS ASSOCIATED WITH FARM ANIMAL WELFARE ............................................................................ 167
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LIST OF PUBLICATIONS

Published book chapters


CHAPTER ONE
OVERVIEW OF THE STUDY

Animal agriculture is as old as civilization, and our ancient contract with animals, for all its flaws, has been a model of natural justice and fairness. We have, in most cases, coexisted with our domestic animals better than we have with one another. Their presence has been a manifest and positive one, reflected and extolled in our arts, crafts, literature, mythology, song, and story. Our children still sing of Old MacDonald’s farm. No one sings of Old MacDonald’s factory. We must do what needs to be done to preserve that ancient contract, else we diminish not only the animals but ourselves as well.


1.0 Introduction

Animal farming has changed drastically over the last several decades. The number of animals farmed for human consumption has increased by an unprecedented magnitude to accommodate the world’s growing population and its demand for animal products. Alongside the increase in productive output, developed countries have fewer farms, but larger and more intensive farms. The proportion of people employed within the agricultural sector has experienced a synonymous decline. Animal farming is now based on a model more reminiscent of factories than the traditional family run farm many consumers still envisage. Intensive animal production, which is also referred to as factory farming, intensive livestock production, or Concentrated Animal Feeding Operations (CAFOs), is widespread due to its efficiency and profitability. Despite its capacity to
provide vast nutritional output, intensive animal production is associated with several issues of concern to the public; particularly relating to animal welfare, the environment, and human health (FAO, 2017). Heavily resource-intensive, farmed animals are selectively bred, reared in conditions where they are confined and within proximity to others which frustrates instinctive behaviours. There is strong evidence suggesting that the animal welfare impacts of intensive farming are increasingly recognised by individuals as a legitimate ethical issue to consider when purchasing and consuming animal-based foods (Bennett et al., 2018; Cembalo et al., 2016).

Alongside the growing trend of ‘ethical consumption’, there has been a surge within the food sector to cater to concerned consumers with products produced under higher welfare regulations. Concerns about farm animal welfare have shifted from being a niche sustainability issue to one that is firmly embedded within society’s demands for food standards. Several surveys have found animal welfare is a more important sustainability issue than human health and safety concerns (Defra, 2011a; IGD, 2011). Due to increased media, academic, and advocacy attention directed towards the ethics of the food we eat, it would be unusual to find a consumer who has not heard about the plight of poultry, pigs and cattle raised for their meat and by-products. Many consumers feel obliged to question the ethics of products they select at the supermarket, and seriously consider whether ‘high welfare’ is a product attribute worth investing in. Consumers need to understand farming, animal welfare, and product options to make informed purchasing decisions in line with their values (Vanhonacker & Verbeke, 2014). Current literature suggests consumers are concerned about animal welfare, yet the market share of higher welfare products is relatively small (Lever & Evans, 2017). Further research is therefore required to understand consumer knowledge about animal welfare concepts.
Purchasing choices of animal-based foods do not occur in isolation. Consumers are influenced by mitigating factors included in relevant behaviour change theoretical frameworks such as social norms and perceived behavioural control (Vermeir & Verbeke, 2008). Many stakeholder groups are affected by consumer attitudes to animal welfare and in turn they have the capacity to improve animal welfare if deemed necessary, although the motivations for causing such improvements differ depending on their role and influence (Bergstra et al., 2017). Stakeholders, including consumers, legislators, producers, and retailers, each have perspectives on farm animal welfare and possess the capacity to create improvements to the food system. Social, political, and economic forces interact to influence the food system; and unequal distributions of power can lead to misaligned targets in reducing the negative impacts of intensive farming. The various stakeholders within the agro-food supply chain have competing, and sometimes conflicting, beliefs, values and motivations. A conflict of interest can arise in which the political, economic and public interest pertaining to animal welfare are not reconcilable (Parker et al., 2017). This study is unique because it incorporates the perspectives (including awareness, attitudes, social dynamics and preferences) of consumers as end users, alongside the perspectives of supply chain stakeholders.

It is important to understand how consumers conceptualise animal welfare and whether they believe animal welfare is a desirable or necessary product attribute. A growing body of organisations and individuals agree with the assertion that: when consumers remain unaware of animal welfare, they do not demand higher welfare standards and existing systems which result in inferior welfare outcomes prevail (Prunty & Apple, 2013). Furthermore, an understanding of consumer attitudes is vital for those who farm and produce our food so that they can ensure farmed animals are treated in a socially licensed way.
The purpose of the three studies included in this dissertation includes the results of three studies that were conducted to present insight into the ways consumers and other stakeholders conceptualise animal welfare and the importance it has for their food choices. With many stakeholders capitalising on the capacity for profit through becoming part of a niche market, it is crucial to understand existing consumer awareness and attitudes towards the issue.

This dissertation presents a theoretical background to the ways people avoid confrontation between their beliefs and their behaviours, and it seeks to uncover the motivations that drive those with conflicting views on the issue of intensive animal farming. Worldwide, animal protection organisations are increasing, both in number and membership, with more people being affiliated with the animal welfare and animal rights movements than ever before (Garner, 2016; Best, 2009). Distance (both in terms of experience and physical distance) between consumers and the food chain is evident. An objective of many organisations is to increase the awareness among consumers about the impacts of our meat-heavy diets. How people perceive intensive animal production are influenced by a wide array of variables. These include characteristics of the individual, such as personal experience, beliefs, trust and values, as well as the information available about animal welfare, labels, and how this information is received (Vanhonacker et al., 2007).

Many animal protection groups argue against modern systems of animal-based food production. Their work is based on the premise that, if the average consumer was aware of the impacts of intensive farming, they would not support it. Studies comprising of a questionnaire, quasi-experiment, and interviews will examine the validity of this statement by exploring the current level of knowledge that Australian consumers have of modern animal agriculture systems, including the social, environmental, economic and
moral implications of the practice. The studies also seek to determine the capacity for information to change consumers’ behaviours towards those that support higher welfare.

1.1 Motivation of the research

The research discussed in this dissertation was motivated by several factors. On a personal level, I have held a lifelong interest in animals. I have always revered the inherent loyalty and companionship offered by the animals I have known and have been intrigued about the secret lives of the many species I do not know. A process of enquiry about farming led me to modify my dietary choices and motivated me to remain well-informed about animal production. I have often wondered whether other people would be motivated to change their dietary behaviours if they had a deeper awareness of animal sentience and the impacts of intensive animal production on the welfare of farm animals. For the purposes of transparency, I acknowledge that I have approached the research topic from a perspective that is empathetic towards the plight of farmed animals. In an ideal world, I envisage food options that allow citizen and consumer preferences\(^1\) to be aligned; whereby sustainable, high welfare farming practices, that demonstrate respect for animal sentience and natural behaviours are the norm rather than the exception.

The research was also motivated by a growing prevalence of animal welfare issues within the public sphere. Several beliefs seem to permeate public culture without question. For example, free range equals ‘good’, caged equals ‘bad’, and urban living equals a diminished understanding of how farming works, to name just a few. Grocery aisles and fridges are stocked with products that promise better living conditions for the animal they contain; yet consumers’ understanding of such products and their significance is an underexamined area of research. Existing literature on actual and perceived levels of consumer awareness is relatively scant; as is literature incorporating both quantitative and

\(^1\) The distinction between citizen and consumer is discussed in section 1.3.2
qualitative research methodologies. In this time of societal interest in animal welfare there is an ideal opportunity to develop a better understanding of how consumers and stakeholders can inform food policy and business strategy that improves the wellbeing of farm animals.

1.2 Research objectives

This dissertation is composed of three studies, each of which has a specific objective. The first study (chapter three) examines the perceptions of Australian consumers towards animal welfare, including their awareness of animal welfare issues and their concern about the impacts of intensive animal production. The study highlights key areas in which consumers lack awareness of food production. It will do this by analysing the results of a questionnaire administered to Australian consumers.

The second study (chapter four) expands on the knowledge gathered in chapter three. Through the implementation of a quasi-experimental research design, the impact of information on consumer attitudes and awareness are determined. Prior research suggests consumers utilise distancing devices to maintain beliefs and attitudes. The objective of the second study is therefore to examine the role of information in modifying or maintaining attitudes held towards farm animal welfare.

The objective of the third and final study (chapter five) is to analyse semi-structured interviews with stakeholders from the agro-food industry. Content analysis is used to examine the perspectives of stakeholders representing animal protection organisations, retailers, farmers, consumer advocacy, and industry bodies. Current literature identifies stakeholders as having distinct motivations (e.g., economic, social, political) yet there are opportunities for collaboration based on common ethical values. An important objective of the interviews is to examine stakeholder perspectives of animal welfare in an
Australian context as a considerable proportion of current literature is based within Europe.

Together these studies explore links between the current level of awareness and the consumption of animal products. Through the exploration of attitudes, affect and emotion, consumer decision-making processes are investigated to determine the most important factors that drive consumer decisions to support or reject animal products depending on the production system used to produce them. By integrating data from questionnaires, a quasi-experimental study and focus groups, the processes that drive consumer behaviour are examined, including significant drivers of, and barriers to, behaviour change.

The study addresses five research questions which will be answered by complementary methodologies. These are:

1. What level of awareness do consumers have of animal production and animal farming?

2. What attitudes do consumers hold towards the treatment of farm animals in Australia?

3. What are the relationships between consumers’:
   a. Behaviour (in the form of diet and product choices)
   b. Concern for animal welfare
   c. Awareness of animal welfare
   d. Attitudes
   e. Social environment and perceived behavioural control

4. What effect does the provision of information have on consumers’ awareness, attitudes, and behaviours?

5. What are the attitudes of relevant stakeholders to farm animal welfare?
Research questions one, two, three and four were answered using a combination of online questionnaires in addition to a quasi-experimental analysis. Interviews with key stakeholders were used to answer research question five and add to the robustness of the results obtained for research questions one, two, three and four. Methodologies for each question will be discussed in the relevant chapters.

1.3 Philosophical and theoretical orientation

This section will discuss the philosophical foundations on which this study is based in the context of the ontological and epistemological framework. It also seeks to conceptualise the study within a theoretical framework, which informs the methodological approach of the research in subsequent chapters. The philosophical orientation consists of a hierarchical system in which the ontological perspective influences the epistemological perspective, which leads to the theoretical perspective and guides the selection of appropriate research methods (Crotty, 1998: 4). This study will utilise both quantitative and qualitative methods from a critical realism perspective to explore the variables that influence the consumption of animal products.

This study is guided by a realist ontology (the belief that the external world exists outside the human mind) and the epistemology of constructionism (reality through social meanings) (Saratankos, 2005). Whereas the theoretical perspectives of positivism and phenomenology subscribe loyalty to either quantitative or qualitative research, critical realism accepts that knowledge can be acquired through a range of complementary methodologies, and knowledge of the social world can be based on empirical evidence as well as through personal interpretation of reality (Wikgren, 2005).

1.3.1 Critical realism

This dissertation is guided by a perspective of critical realism. Critical realism accepts the existence of truth, and subsequent knowledge, beyond what is obtainable through
empirical research. Critical realism social theory is suited to this study in that the theory recommends the adoption of a mixed methods approach to thoroughly understand the social and cultural meanings underpinning the research problem (Conway, 2009, p. 3). The philosophy identifies three levels of truth: the empirical (experiences that can be measured empirically), the actual (reality that exists but may not be experienced), and the real (reality that cannot be quantified but is the basis for the development of theories) (McEvoy & Richards, 2006). Methodological triangulation improves the reliability of research findings by integrating the benefits of multiple methods to answer a collective research problem (Bryman, 2012).

The purpose of this dissertation is to explore the role of knowledge in shaping consumer beliefs on intensive animal production systems within the context of the Theory of Planned Behaviour (Ajzen, 1991). Although the role of knowledge is widely studied in behavioural literature, particularly in pro-environmental behaviour, it has not yet been examined specifically in the context of animal welfare and tested from a diversity of methodological approaches as advocated by critical realism theory.

1.3.2 Citizens and consumers

Consumer behaviour literature and its emerging branch of ethical consumerism differentiates between citizens and consumers, despite the two groups being comprised of the same individuals. When individuals make judgements based on their position as a citizen, they integrate their values and are motivated to act accordingly. Conversely, consumers are motivated to act in a way that is economically and socially beneficial to their life circumstances. An individual may truthfully claim to place a high priority on the welfare of the environment and farm animals but make purchase choices that do not reflect stated values (Schröder & McEachern, 2004; Verbeke et al., 2010). The disparity between citizens and consumers gives rise to the ‘attitude-behaviour gap’, which is explained further in chapter two. Psychological distancing devices and market failures
facilitate consumers making purchasing choices that negate their views on how society and the economy should function. Having said this, a growing proportion of consumers are electing to make consumption choices that allow them to express their ethical position (Cembalo et al., 2016). Food businesses are pre-emptively protecting their market share by expanding the market to include ‘higher welfare’ products (Amos & Sullivan, 2017b).

The ability of industry and government to deliver animal welfare targets in a legitimate way and government to deliver on animal welfare targets is a point of contention which is discussed in chapter five. Animal welfare is largely considered a public good which should be therefore moderated at a societal level. The distinction between citizens and consumers is not a point that is dwelt upon in this dissertation; the studies presented in chapters three and four were designed to investigate the perspectives of consumers to animal welfare. Interview data with stakeholders in the food chain are discussed in chapter five which provides an indication of the societal, political, and economic climate in which consumers make purchasing choices which may or may not be reflective of their values as citizens.

1.4 Potential contributions of the dissertation

The dissertation contributes to existing human animal studies literature in several ways. Firstly, the studies demonstrate that Australian consumers have a low level of understanding of animal farming. Due to the diminishing connection between consumers and the farming sector, concern for animal welfare is articulated without a viable means of translating concerns into purchasing behaviour. The research contributes to current literature on the attitude-behaviour gap by highlighting the difficulties consumers face in identifying higher welfare options. Finally, the interview data contributes to current literature by placing the motivations and perspectives of agro-food chain actors within an Australian context. The interview analysis furthers current understanding of common
viewpoints between stakeholders whilst identifying areas in which perspectives appear irreconcilable.

1.5 Structure of dissertation

Following this introduction (chapter one), a review of the relevant literature including the gap in our current understanding of the research problem is included in chapter two. Through an extensive analysis of current research on consumer behaviour relating to animal welfare, I argue that understanding of the relationship between consumer awareness of farming and their purchasing decisions is limited. From a methodological perspective, I identify the potential for addressing the research problem using an innovative collection of research strategies.

The in-depth literature review feeds directly into chapter three, where I present the rationale, methodological framework, results and discussion of this chapter. The online and mail questionnaires discussed in chapter three form the first of the three studies in this dissertation. Compiling responses from almost 900 diverse consumers, the results discussed in this chapter provide baseline data on consumer attitudes, dietary preferences, self-rated and actual awareness of farming. Respondents who took part in chapter three’s study represented a wide array of socio-demographic variables.

In chapter four, I present the results of the quasi-experimental study, which examined the same variables as measured in chapter three but with a novel experimental component. Consumers are regularly exposed to information about animal welfare and the impacts of intensive farming on animals, the environment as well as the effects of meat consumption on human health. The quasi-experimental study set out to determine the way in which consumers react to information and how this may link to their consumption choices. The data collected for this chapter also includes the products purchased by respondents and
their reasons for these purchases. This second study provides valuable data to explore the factors and product attributes that motivate consumers to make particular product choices.

Chapter five is the final data chapter of this dissertation and presents the analysis of interviews I conducted with key stakeholders relevant to animal welfare and consumer behaviour. I used content analysis to identify common and convergent perspectives about farm animal welfare among stakeholders representing advocacy, retail, and producer stakeholder groups. Chapter six concludes the dissertation and includes a review of the key findings of each of the three studies. Also, within this chapter, the limitations and contributions of the dissertations are described, and suggestions for future research made.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

Cultural, technological and political developments of the last several decades have allowed animal farming to develop into a highly efficient means of food production. Farming animals for meat, dairy and egg products is a large-scale industry in the 21st Century. Animal farming is highly mechanised, automated, and intensive; and involves extensive costs to animals, the environment, and human health. Drawing on literature from a range of disciplines and theoretical perspectives, this chapter presents a summary of the current body of knowledge on consumer attitudes and awareness of animal production and farm animal welfare. Existing research indicates an increase in concern for animal welfare and a growing interest among consumers in the ethical dimensions of animal production. The impact of animal welfare information on consumers’ choices is an underexplored area of research relevant to modern food systems and this topic forms the focus of the research I present in the following chapters. In addition to consumer attitudes, the attitudes and motivations of relevant stakeholders implicated in animal welfare are reviewed and discussed.

The objective of this dissertation is to present three separate yet related studies that I conducted to determine the attitudes and awareness that Australian consumers have of animal production as well as the social, political and economic forces influencing the success of higher welfare foods within the market. The next section (2.2) will provide a summary of the historical use of animals in the food system and the processes that have allowed intensive farming to become the standard method of production in the developed world. Following this, in section 2.3, I examine the animal welfare implications of the current farming model as well as the impacts on human health and the environment.
Section 2.4 presents a summary of the ways in which brand extensions and accreditation schemes are affording consumers the option to purchase higher welfare products. I then shift focus to the human-animal relationship (section 2.5), which underpins my enquiry into consumer attitudes towards animal production. I review the current body of research on consumer attitudes and, in section 2.6, I examine the role of consumer awareness in shaping product preferences. I identify shortcomings in the literature pertaining to consumer awareness that forms an important basis for the studies presented in the subsequent chapters of this dissertation. A range of stakeholders within the supply chain, including producers, suppliers, retailers, consumers, policy makers, and animal welfare scientists, influence the availability and labelling of higher welfare animal products within the supply chain. Section 2.6 also considers the perspectives and motivations of these different stakeholder groups. After reviewing the literature pertaining to the attitudes of consumers and other stakeholders, I elaborate on existing knowledge of encouraging behavioural change, and identify known barriers to supporting the emerging market of higher welfare animal products in section 2.7. I conclude the chapter with an examination of the relevant theoretical perspectives and define the key terms and concepts that inform the studies presented in chapters three, four and five of this dissertation.

2.2 Animal farming past and present

Humans have relied on animals for food for thousands of years. From the hunter gatherer lifestyle of many European communities approximately 12,000 years ago, the ways in which humans have selected, bred and reared animals have been shaped by supply, demand and technological advancements (Mazoyer & Roudart, 2006). The development of tools aided in the evolution of the human diet through the invention of more efficient means to yield sustenance from the earth and animals. When communities adopted
farming lifestyles in various geographic regions throughout the world, they were afforded numerous benefits, not least the advantage of reliable food sources in the wake of uncertain climatic conditions and variation in game populations (Diamond, 2002). The cultivation of food sources in a fixed location allowed for growth in human population; and the increased density of sustenance available through agriculture maintained this growth and led to the development of tools to cultivate crops (Golding, 2016). Grazing animals were domesticated, and farming methods were developed based on the selective breeding of animals with favourable traits. Collectively, changes in farming and the domestication of certain land mammals proved pivotal in food production and allowed human populations to grow. Farming developments embedded the exploitation of animals within human culture and defined the rise of farming in the Neolithic period of approximately 10,000 years ago (Mazoyer & Roudart, 2006). Shifting to agriculturally-based societies allowed for a steady increase in the global population; however, it was not until the 17th century that food supply and security advanced to a level that subsequently supported one billion people by the turn of the 19th century (Newbold, 2017).

Since the early days of animal production, the human population has undergone exponential growth, and the application of scientific discoveries such as vaccines, antibiotics, and artificial fertilizers allowed the farming industry to flourish in the early 19th century. Intensive farming was, and still is, a favourable means of supplying the world’s growing population with sufficient nutrients; however, the need to ensure it is sustainable and socially acceptable is now widely recognised (Garnett et al., 2013). The quality and safety of food products through intensive farming is highly questionable, and the ethical concerns surrounding the treatment of farm animals are heavily scrutinized. Since the 20th century, technology has advanced at such a pace that livestock production now accounts for the largest anthropogenic usage of land and contributes substantially to overall agricultural output (Steinfeld et al., 2006). The significant output generated by the
farming sector caters to the world’s growing demand for meat, dairy and egg products and this trend is set to increase in the developing world. The changes that enabled such enormous output are largely due to the implementation of more mechanised, intensive systems whereby the economic potential is far-reaching; however, this can be detrimental to the welfare of livestock animals. Negative impacts of intensive farming are discussed in the following sections.

The increased prevalence of intensive systems for raising farm animals has allowed animal products to become readily available to consumers at affordable prices; where animal products were once considered a luxury, more people than ever can now afford regular meat consumption (You & Henneberg, 2016). Technological advancements led to increased reliance on mechanisation rather than manual labour for animal agrarian systems. Industrialisation had a lasting impact on the consumption of animal products, underpinning an increase in average incomes and the increase in production of animal products, with developing countries not far behind (von Keyserlingk & Hötzel, 2015).

According to a report by the Organisation for Economic Co-operation and Development and the Food and Agriculture Organisation (OECD-FAO 2015), the surge in demand for agricultural products over the last decade is largely due to growing populations of developing countries who are experiencing increases in incomes and rates of urbanisation. Advancements in agricultural techniques since the 1940’s have seen grain production double, with production of grain and animal products expected to continue rising dramatically through to 2050 alongside growing consumer demand (Tilman et al., 2002). Protein consumption is predicted to increase on a global scale; global demand for meat is projected to increase by at least 60 percent by 2050 from a 2006 baseline, of which poultry products will constitute half of the projected growth (FAO, 2016). To accommodate the increase in demand for animal protein, Boland et al. (2013) propose a multi-faceted approach including utilising novel sources of protein from non-animal origin. However,
a decreased consumption of animal protein is recommended by nutrition experts as many people currently consume far more than considered healthy for themselves or the environment (Craig, 2010; Hartmann & Siegrist, 2017; Lee et al., 2016; McEvoy et al., 2012).

Throughout recent decades, consumption of animal products has risen exponentially as predicted. Since the 1960s, consumption per capita of milk, meat and eggs has increased by a factor of two-fold, three-fold and five-fold, respectively (FAO, 2009). According to the Australian Chicken Meat Federation, over 500 million poultry animals are slaughtered each year in Australia, which provides a projected consumption of the highest ever figure of 47.1kg per person per year for chicken meat for 2017/2018 — more than 10 times the consumption in 1960 (Australian Chicken Meat Federation, 2013). From 2010 to 2012, the Australian Bureau of Statistics reported the slaughtering of 22 million cattle, 13.9 million pigs, 1.5 billion chickens, and 17.8 million sheep (Australian Bureau of Statistics, 2015). With the world’s population set to reach more than 9.5 billion people by the year 2050, global grain demand is predicted to double between 2000 and 2050 — much of it for livestock feed (Wu et al., 2014).

Due to increasing demand by consumers, the animal production industry has become defined by a highly competitive marketplace; in which producers must compete on cost, scale and efficiency, often to the detriment of the livestock from which the industry benefits. Producers must utilise highly efficient systems of animal production to remain economically viable in the current market, and therefore employ intensive systems whereby animals live in confinement and are denied the liberties afforded by more traditional farming systems.

Intensive animal production has overtaken traditional farming practices in most of the developed world, and increasingly in developing countries also. Intensive farming is often referred to as ‘factory farming’ due to the paradoxical nature of the system: high stocking
densities, rapid turnover and high automation (Garner, 2004). Such farming systems are also referred to as CAFOs (Concentrated Animal Feeding Operations). The most commonly exploited farm species are poultry, pigs, horses, cattle, goats and sheep. These animals are selected due to their docile nature, adequate size and productive capacity (Diamond, 2002). As well as the processes involved in slaughter, the living conditions of pigs, meat chickens, laying hens, and calves have been subject to the most public scrutiny and awareness among consumers (Dawkins, 2012).

Intensive farming has far reaching impacts throughout the world, with direct economic, political, and health impacts on humans. For the animals themselves, suffering is an undeniable ramification for billions of animals every year. Concern from the general public about how animal-based food items are produced centres around animal welfare and animal rights (Kanis et al., 2003; Quintili & Grifoni, 2004), human health (Galbreth & Ghosh, 2013; Richardson et al., 1994; Zur & Klöckner, 2014); and the environment (Lund & Olsson, 2006; Vranken et al., 2014). The various impacts of intensive animal are discussed in the following sections.

2.3 Impacts of intensive farming

Intensive farming impacts on the environment as it requires extensive and intensive land use that depreciates soil and land quality. It also impacts on human health through the use of antibiotics and the potential threat of virus transmission. Animal welfare is a third, but no less critical bearer of the impact of intensive farming due to the conditions in which farm animals are raised and slaughtered.

2.3.1 Environment

In addition to animal welfare, significant costs to the environment and human health result from intensive farming practices. Industrialised farming is comparatively more taxing on the environment and natural resources than other sectors and requires an abundance of
water and land to produce sufficient output in the form of protein. The consequences of maintaining the production of such large quantities of animals leads to the degradation of land and soil quality, pollution, loss of biodiversity, as well as being hugely water and energy expensive (Smith et al., 2013). According to the Food and Agriculture Organisation (FAO, 2016), livestock farming is a major threat to the environment and intensive farming is not a sustainable solution to feeding the world’s growing population. Attempts are being made to encouraging changes to consumption patterns and demands to reduce the harmful environmental impacts of intensive animal production through education, increasing awareness, and policy changes (Graham & Abrahamse, 2017; Leach et al., 2016; Röös et al., 2014).

*Land use/quality*

Animal production accounts for a significant proportion of land use and increased by almost 500 million hectares between 1986 and 2011 (Alexander et al., 2015). The growth in the area of land dedicated to the production of animal-based foods such as meat and dairy comes at the cost to entire ecosystems, and their associated biodiversity, through deforestation and land clearing (Alexander et al., 2015). Analysis by Alexander and colleagues determined that livestock production accounted for 65% of land use change between 1961 and 2011. Human population increase is no longer the primary driver of increases to agricultural land usage; rather changes to dietary preferences and increases in income are responsible for significant demands on the agricultural system (Weinzettel et al., 2013). In addition to land dedicated to farmed animals, even more is cleared to grow crops to serve as animal feed (Akhtar et al., 2009). Intensive farming results in a loss of energy and resources through the production chain because grain-fed animals consume food that could otherwise go directly to humans — this is particularly relevant in the world’s wealthier countries where over 70% of the country’s grain supply is fed to
livestock (Lundqvist et al., 2008). A third of crops harvested worldwide are used for feeding livestock animals and land dedicated to animal production accounts for double that of crop production (Herrero et al., 2016). The inefficiency of animal products in comparison to plant-based production to provide nutrients is an often-cited criticism of intensive farming.

Throughout the world there has been a decrease in many species’ populations, including birds, butterflies, bees, and beetles. Research attempts to quantify the linkages between biodiversity and intensification, with the clearance of land having been identified as a significant contributor to declines in wildlife populations. Inger and colleagues (2015) estimate a decrease in European bird populations of 420 million individuals over the last 30 years. Biodiversity losses can also be attributed to animal production farming systems; for example, soya beans grown to feed farm animals in the Amazon rainforest causes deforestation which poses a significant threat to local biodiversity (Bickel & Dros, 2003).

Intensive animal production relies heavily on fertilizers, herbicides, pesticides and other chemicals to ensure efficiency and quality control. Fertilizer runoff contributes to excess levels of nitrogen and phosphorus appearing in waterways and soil and, in combination with animal waste, there is accumulation of pollution compounded by years of production. Waste from animals contributes to the degradation of not only land surrounding a farming operation. Excessive waste destroys the surrounding ecosystems and is also is linked to problems with human health through water and air contamination. Gases from animal waste are associated with respiratory and cardiac health problems among farmers and people living close to farming operations (Boland et al., 2015; Demos et al., 2013).

Changes to the earth’s atmosphere and climate caused by anthropogenic activities have attracted increased public scrutiny over the last several decades. The relationship between
intensive farming and climate change is not clearly quantified; however, there is a consensus within the research that intensive animal production is damaging to the environment and has contributed to climate change (Westhoek et al., 2014). The meat industry is responsible for significant greenhouse gas emissions through methane emissions produced by ruminant species as well as nitrous oxide which is released from fertilizers (Pullar et al., 2011). Meat production is far more energy and resource intensive than other forms of agriculture. The heavy reliance of the farming industry on fertilizers, as well as the methane emissions of grazing animals, contributes significantly to greenhouse gas emissions (Pullar et al., 2011). In 2006 the FAO estimated that 18% of greenhouse gas emissions were caused by the animal production industry (Steinfeld et al., 2006).

2.3.2 Human health

Intensification of animal production has been successful in accommodating the world population’s growing demand for animal protein, yet several negative health impacts arise, either directly or indirectly, from keeping livestock animals in such conditions. The most significant and widely reported impact of intensive animal farming on human health is antibiotic resistance. Antibiotics are used to prevent and treat the outbreak of diseases among intensively farmed animals whilst also increasing growth rate. However, this creates the opportunity for bacteria to become resistant to available antibiotics, limiting the capacity for infection control and the treatment of illness in humans and animals (Watkins & Bonomo, 2016). Antibiotics have become viewed as a necessity in intensive animal production systems to stave off disease and infection; and the human health concerns relating to their use is becoming better understood by the public (Kimman et al., 2013; Smith et al., 2005). Whilst the use of antibiotics in healthcare settings is a large contributor to antibiotic resistance, there is a link between bacteria in animals and humans, which enables resistance characteristics to be shared. Both the World Health
Organization and the European Food Safety Authority identify the animal-based origins of *Salmonella* and *Campylobacter* infections, both of which are associated with resistance to antibiotic treatments. According to the World Health Organisation’s report *Tackling antibiotic resistance from a food safety perspective in Europe* (2011, p. xiii)

Resistance in the foodborne zoonotic bacteria *Salmonella* and *Campylobacter* is clearly linked to antibiotic use in food animals, and foodborne diseases caused by such resistant bacteria are well documented in people. Of special concern is resistance to so-called critically important antibiotics for human medicine. For example, the use of fluoroquinolones in food animals has led to a corresponding antibiotic resistance in *Salmonella* and *Campylobacter* species, thus causing infections in people. Also, antibiotic resistance in *Salmonella* has been associated with more frequent and longer hospitalization, longer illness, a higher risk of invasive infection and a twofold increase in the risk of death in the two years after infection.

The addition of antibiotics to animal feed corresponded with the increased use of feedlots and intensive farming conditions. While antibiotics can play an important role in maintaining the safety of farm animals that are suffering from illness, their overuse has become a significant issue for human health (Watkins & Bonomo, 2016). According to a review on antimicrobial resistance, the amount of antibiotics administered to livestock is at least equivalent to the amounts given to humans and is increasing (O’Neil, 2015). According to Van Boeckal and colleagues (2015), the livestock industry will use 67% more antibiotics between 2010 and 2030. The scientific community has warned of the looming threat to human health because of antibiotic resistance, with several initiatives imploring a decrease in antibiotic usage within the farming sector (Anomaly, 2018). The over-reliance of antibiotics in intensive farming serves as a catalyst for bacterial resistant
to medicines. Therefore, overuse of antibiotics poses a huge risk to human health and food security.

In addition to the impacts to human health and treatment of disease among humans, there is the ongoing threat of viruses that can be transmitted between livestock animals and humans. Avian and swine flu are two examples of viruses that have affected humans through contact with farm animals. Confining high density of farm animals increases the chances of viral transmission due to proximity and compromises to immune systems, and viruses can develop heightened resiliency by passing between different species (Douglas et al., 2018; Anomaly, 2015). According to Greger (2007), threats to human health resulting from bovine spongiform encephalopathy, multidrug-resistant foodborne bacteria, and avian influenza have been caused by intensive farming practices. Foodborne illnesses are responsible for millions of deaths every year, such high figures are due to methods of production and the significant quantity of animal protein consumed (Mead et al., 1999; Perry et al., 2013).

In addition to the seemingly indirect health issues associated with intensive animal production, increased meat consumption is linked with a range of health conditions. Research has cited the link between meat-based diets (as opposed to plant-based) and chronic illness (Akhtar et al., 2009; Kouvari et al., 2016; Westhoek et al., 2014).

2.3.3 Animal welfare

A simple definition of welfare applied to farm animals is ‘…its state as regards its attempts to cope with its environment. Welfare includes feelings and health and can be measured scientifically. It is a biological concept, quite different from rights, and refers only to living animals’ (Broom, 2017, p. 9). Animal welfare is defined by the World Organisation for Animal Health (OIE) as how an animal is coping with the conditions in which it lives (2016). An animal is in a good state of welfare if (as indicated by scientific
evidence) it is healthy, comfortable, well nourished, safe, able to express innate behaviour, and is not suffering from unpleasant states such as pain, fear, and distress (Broom, 2017).

The science of animal welfare has developed significantly in recent decades and allows the quality of life for an animal to be assessed across a range of conditions (Mellor, 2016). In circumstances where an animal is not coping with its environment, it may be experiencing negative states such as stress, pain or fear. Very poor animal welfare therefore indicates an animal is undergoing conditions or treatments that deny the opportunity to cope effectively, which has negative repercussions for reproduction, health and survival. Welfare depends on the specific needs of a species. In the case of farm animals, welfare can be affected across a range of stages, from being raised, handled, transported and eventually slaughtered (Broom, 2011). The concept of animal welfare, particularly farm animal welfare and its relevance for ethical purchasing decisions, has been bolstered in public spectrum in recent years. Whilst the average consumer is not likely to have knowledge of the scientific principles that assess welfare, consumers will have opinions about the ethics of how animals live and die for food production, among other purposes (Broom, 2017).

Critics of intensive animal agriculture argue that even the most basic freedoms for farm animals, as indicated in the UK Brambell Report, are not accounted for within intensive animal agriculture systems: freedom from thirst and hunger; freedom from discomfort; freedom from pain, injury, and disease; freedom to express normal behaviour; and freedom from fear and distress (Garner, 2013; McCausland, 2014). The Brambell Report was written by a committee appointed by the British Government in response to growing public concern about the welfare of farmed animals. The five freedoms include both mental and physical factors that should be considered to maintain the welfare of farmed animals.
animals, and it has served as the foundation on which much animal science has developed today. Farm animal welfare and the ways it is defined from a social, political and scientific perspective have undergone considerable changes since it first became an issue worthy of political intervention (Bock & Buller, 2013). The way animal welfare is assessed is continually evolving owing to advancements in our understanding of animal needs and sentience. Animal welfare science has received increasing funding and attention; it is important to note that much of the funding is now in response to increasing public concern for animal welfare. Animal welfare forms part of a movement in which consumers and businesses are driving change rather than policy-makers — implying a significant change in how animal welfare science is interpreted (Degeling & Johnson, 2015).

A wide range of negative animal welfare impacts result from the characteristic mechanisation of intensive animal agriculture systems. Characteristics of intensive farming that are detrimental to the animals include high stocking densities, close confinement, body modifications, restriction of normal behaviours and limited genetic diversity (Velarde et al., 2015). To maintain high productivity in minimal space and to control for diet and environmental factors, intensive animal production systems keep large numbers of animals in confinement. Many of these animals are subjected to body modifications to prevent self-mutilation, feather pecking and cannibalism that can occur in response to the stressful conditions of overcrowding (Buyukmihci, 2016; Hughes & Gentle, 1995).

Under relevant regulatory standards in Australia, common body modification practices include dehorning in cattle, tail docking in dairy cows and pigs, teeth clipping in pigs, and beak trimming in laying hens. The artificial, intensive conditions in which animals are confined create the potential for animals to injure themselves and others; hence modifications are considered necessary. For example, to prevent tail biting which is
common amongst intensively confined pigs, many producers dock the pigs’ tails without analgesia. Laying hens in intensive conditions will peck themselves and other hens, causing persistent pain and injury. To mitigate this type of injury, producers commonly trim the beaks of laying hens; however, this procedure in itself — which is usually performed with a hot blade or a laser — causes considerable pain for the hen and can lead to further health issues such as neuromas, causing chronic pain (Carruthers et al., 2012; Prescott & Bonser, 2004). Consumers’ awareness of the welfare issues surrounding cages has grown enormously in the last decades, and the sale of free range eggs has grown as a response to shoppers wishing to ‘vote with their forks’ (Parker et al., 2013; Pollan, 2006).

The limited opportunity for movement resulting from overcrowded and intensive confinement also leaves farm animals vulnerable to injury and increased spread of disease. Chickens raised for meat are selectively bred to grow to slaughter weight in six weeks. The increased growth weight puts pressure on the chicken’s skeletal and cardiovascular systems; chickens will often suffer fractured and broken bones and can have difficulty in reaching food and water (Cockram & Hughes, 2011; D’Silva, 2006). Similarly, dairy cows have a number of health and welfare issues associated with modern farming practises, including lameness as a result of spending time on concrete floors (Ahrens et al., 2011). Dairy cows spend at least some time on concrete floors daily, and some production systems entirely prevent access to grass. Focus groups consisting of a variety of stakeholders including dairy farmers, veterinarians, academics and students found lameness to be the most important welfare issue for dairy cows, followed by other issues such as comfort, mortality, disease, painful procedures, and injuries (Ventura et al., 2015). The most common production system of pigs in intensive systems is through the use of sow stalls — a system in which the sow is denied the freedom to turn around or have access to natural materials throughout the majority of her life (Ryan et al., 2015; Voiceless, 2012). Due to growing consumer pressure, the Australian Pork Industry
declared a voluntary phasing out of sow stalls by 2017 (Australian Pork Limited, 2016). This self-regulatory approach does not guarantee the discontinuation of the use of sow stalls entirely. Revised standards in Australia mean that while sow stalls are likely to remain in use in Australia, their overall use will decline (Voiceless, 2012).

Upon preliminary inspection, the degree and extent to which intensive animal farming operates throughout the developed world indicates a level of acceptance by consumers. However, further analysis reveals the existence of a plethora of mitigating agents that aid in the success of the intensive farm model of production. There is the ‘veil of secrecy’ surrounding the environmental, social and ethical impacts of factory farms (Wicks, 2011). Opponents of factory farms attribute this lack of transparency in the animal production industry as the reason for its success, rather than because consumers endorse such farming based on a degree of sufficient awareness or experience. At the psychological level, theories of affective ignorance, cognitive dissonance, and denial assert that humans remain in a state of unawareness about the ethical realities of what they eat, because they elect to actively ignore information that arouses discomfort or jeopardises the social acceptability of their current behaviours (Font-i-Furnols & Guerrero, 2014; Williams, 2008). Consumer perceptions of animal welfare issues are explored in later sections of this literature review.

Animal welfare is perceived by many as a public good and therefore requires maintenance and protection through appropriate regulatory measures and government intervention (Harvey & Hubbard, 2013). Degeling and Johnson (2015) examined the variety of ways the terms public can be defined regarding animal welfare as a public good. The authors note the influence of different publics in determining expectations of animal welfare standards — including those with political power, consumers, and stakeholders. It is important to note that an individual’s membership is not exclusive to one public at any
given time. There are many stakeholders involved in the debate on whether intensive farming is ethically feasible, many of whom desire increased consideration of animal welfare but are aware of the economic forces that drive the system (Austin et al., 2005; Rossi & Garner, 2014).

The welfare of animals used to feed the world’s appetite for meat and dairy is of interest and concern to many consumers throughout the world. Food production, particularly pork, chicken meat, eggs, and increasingly dairy, beef and seafood, is facing public scrutiny as many consumers are questioning the ethical issues involved in food choices (Boogaard et al., 2011; Coleman et al., 2015; Vanhonacker et al., 2012). Scientific research on animal welfare, social, and environmental impacts of factory farming indicates the need for a more ethical, sustainable alternative to animal-based food production and this is reflected in the surge in public interest in animal welfare (Bock & Buller, 2013). Animal protection groups are working to encourage greater transparency in the food production system along with clear, standardised labelling requirements. The rationale behind increased transparency in the food system is that theoretically, once consumers have access to credible information on the ethical and sustainable nature of the foods they buy, they can make informed choices in accordance with their beliefs and attitudes (Cornish et al., 2016). Having such information available to consumers is just one step towards the goal of higher welfare products changing from being the exception to the being the norm for consumers. According to Phillip Lymbery, the CEO of Compassion in World Farming:

Consumers want to know how the animals used to produce their food have lived. However, opinion polls tell us time and again that they feel there is a lack of transparency in the market place around farming methods and that many existing labels are unclear and can be misleading. We want labelling
that will help shoppers know how their meat and milk has been produced. We want to see transparent, honest labelling across Europe for all meat and milk products by law (Labelling Matters, 2012).

Scientists, animal protection groups and the media widely cite several key animal production techniques as being of concern. Southwell et al. (2006) found that animal mass production, including high stocking density and the provision of hormones and transport conditions, was a major concern for Australian consumers. Animal welfare issues related to live export — an issue which has experience heightened media scrutiny in recent years in Australia — was also an area of concern among participants in Southwell’s study. Tiplady and colleagues examined Australians’ responses to footage exposing cruelty to live export cattle and found that people reacted with emotions such as pity, shock, sadness, and anger (Tiplady et al., 2013). Three quarters of those surveyed felt that it was important the events were communicated to the public.

In Australia, there are no national animal welfare laws; the responsibility for enacting and enforcing legislation falls upon each individual state or territory. Australian standards for farm animal welfare are outlined in the Model Codes of Practice for the Welfare of Animals and, more recently, in Australian Animal Welfare Standards and Guidelines, with the individual States and Territories responsible for legislative development, adoption of standards and enforcement (Department of Agriculture and Resources, 2015). Although currently subject to some reform, most codes still serve only as recommended principles and the degree to which they are enforced varies (Cao & White, 2016). Reform to existing animal welfare laws is a major issue in the developed world. For example, by 2012 all countries belonging to the European Union had banned battery cages in favour of ‘enriched’ cages (Parker et al., 2013). EU animal welfare regulations are considered superior to other locations due to the existence of minimum standards. Producers and
farmers may elect to produce meat, eggs, and dairy using higher welfare standards and factor the costs into their sales; however, all participating countries should theoretically abide by the EU regulations (Anomaly, 2015). Australian supermarkets operate as a duopoly comprised of Woolworths and Coles (an interview with the agricultural manager for Coles is discussed in chapter five). Both major retailers have attempted to cater to consumer concerns about animal welfare. In 2014, both Woolworths and Coles announced they would only stock poultry approved by the RSPCA’s standards. Farms approved under the scheme undergo inspections to ensure they abide by guidelines to protect animal welfare. In addition to chicken meat, Woolworths and Coles stock RSPCA approved eggs, pork, and turkey meat. The RSPCA’s standards surpass those outlined in the model codes of practice for the welfare of poultry and pigs, and eggs are not permitted to be produced using battery cages (RSPCA, 2017).

Animal welfare and the emerging market of higher welfare food are important issues that cannot be overlooked by producers, retailers and food companies due to a growing level of interest among consumers. Extensive systems are emerging as a market that can cater to individuals who desire higher welfare products; however, as Phillips (2008) cautions, extensification does not always translate directly to improved animal welfare conditions for livestock. Consumers may therefore not be supporting the welfare outcomes they deem as ideal. This topic will be discussed further throughout this dissertation.

This section has highlighted the impact of intensive farming on the environment, human health, and animal welfare. As the focus of this dissertation is consumer awareness of, and attitudes to, farm animal welfare, the following section will discuss the market responses to the growing public concerns about animal welfare.
2.4 Restoring animal welfare to animal production

The beliefs, values, and attitudes that humans hold towards animals are incredibly diverse, thus a certain level of ambiguity exists about who is responsible for animal welfare, and how important animal welfare issues are relative to other social issues. There are different perspectives on who is responsible for farm animal welfare; with the government, retailers, producers and farmers, and consumers all having potential to create change (Thorslund et al., 2017). Many consumers unthinkingly trust the law to protect animals from abuse through criminal law and minimum welfare standards. However, studies indicate a growing distrust among consumers towards not only the governmental regulations on animal production, but also towards the credibility of ethical labelling schemes of animal products (Frewer et al., 2005; Vanhonacker & Verbeke, 2014). An American study found that out of 2001 consumers surveyed, only a quarter were confident of the humane treatment of farm animals, and over half agreed in the capacity of transparency around farming procedures to build trust (Johnston, 2016). In another study of American consumers, less than a third of respondents claimed to trust the humane treatment of chickens raised for meat (ASPCA, 2014). In the absence of adequate legal regulation for intensive farming, consumers have the capacity to create market-driven changes to the ways in which animals are farmed (Cornish et al., 2016).

The growth in public dialogue concerning animal welfare has created commercial opportunities for farming bodies, processors and retailers to differentiate their products based on superior welfare attributes. Improvements to animal welfare along the food chain are increasingly associated with superior food quality and can therefore justify higher product costs to cover the expenses associated with high welfare farming standards (Blokhuis et al., 2008; Thorslund et al., 2017). Assurance schemes carrying credence claims on the welfare of the production animals of interest create an opportunity for consumers to make purchasing decisions in line with their preferences, values, and
willingness to pay more for higher welfare products. The requirement and success of products carrying animal welfare assurance claims varies between countries depending on the degree to which legislation takes responsibility for animal welfare or, as is the case in Australia, public concern maintains a demand for higher welfare product categories. Animal welfare often forms part of quality labels in conjunction with other product attributes such as country of origin, organic, and naturalness (Heerwagen et al., 2015; Kjærnes et al., 2007).

Commercial initiatives are an effective strategy to counteract the higher costs associated with additional animal welfare measures whilst appealing to segments of consumers that prefer higher welfare standards (VanHonacker & Verbeke, 2014). However, many challenges are associated with the development and delivery of quality assurance schemes that satisfy consumer demands whilst remaining economically competitive and differ from other products based on objective welfare standards. Consumers can find it difficult to express their concerns about animal welfare if they lack confidence in credence claims on food labels (Bernués et al., 2003; Kehlbacher et al., 2012; Pickett et al., 2014). Research suggests consumers experience frustration at the inadequacy of welfare information available and food labels that are confusing or misleading (Anne Lewis et al., 2008; Harper & Henson, 2001; VanHonacker et al., 2010).

The ‘higher welfare’ market is becoming evident through private animal welfare standards and further initiatives such as quality assurance schemes which include monitoring and certification schemes, retailer schemes to regulate on-farm, transport and slaughter aspects of livestock production, and higher welfare husbandry systems (Blokhuis et al., 2008). Farm animal welfare schemes throughout Europe provide consumers with product options that supersede existing legal requirements (Pickett et al., 2014) and, according to a report on animal welfare labelling, “Enabling consumers to
make informed purchasing decisions has the potential to give an economic incentive to industry to improve the welfare of animals.” (SANCO, 2009, p. vi). Schemes vary in whether they are initiated at the retailer or producer level; often they are formed in conjunction with an animal welfare organisation (Veissier et al., 2008). For example, the RSPCA’s Approved Farming Scheme and its characteristic logo is a fixture on animal products in Australian supermarkets (RSPCA, 2017). The rationale behind the scheme is to encourage producers and farmers to adhere to welfare standards as set out by the RSPCA, thus earning the right to advertise the scheme’s logo on food packaging. The RSPCA also believes that

…by raising public awareness and ensuring that consumers have access to higher welfare alternatives, the RSPCA aims to create demand for these higher welfare products. As consumer demand increases, producers will have a greater incentive to adopt humane farming practices. The RSPCA Approved Farming Scheme forms part of this strategy (RSPCA, 2017).

Space provision, confinement, mutilations, and farming systems that prevent the fulfilment of natural behaviours have all been identified as areas of concern among consumers (de Jonge & van Trijp, 2013). Many of these concerns are being addressed by market-based initiatives, with animal welfare as an important indicator of quality for certain segments of consumers.

In addition to higher welfare options, consumers have the option to decrease their intake of animal-based foods or omit them entirely from their diet. Further alternatives to intensive farming are the consumption of faux meat as opposed to real meat, which is increasing in quality and quantity throughout the world, as well as lab-grown meat and other sources of protein such as insects. While potential sources of protein will require social research in the future, the scope of this dissertation is on current reactions and
perceptions of intensively-produced animal products, and the impacts to animal welfare they are associated with.

Farmers, producers, and retailers are motivated to improve welfare standards for a variety of reasons. These motivations and potential issues are discussed in section 2.7 of this literature review as well as chapter five. Regardless of current motivations, it is important that relevant stakeholders understand consumers’ concerns about farming and their awareness of farm animal welfare. Consumer perceptions, including concerns and attitudes, are discussed in the following section.

2.5 Consumer perceptions of intensive animal production

The global food industry is under immense pressure to supply growing populations with animal protein. As discussed in the previous sections, problematic impacts of intensive animal production can elicit responses from consumers in the way of modified buying preferences and demands for higher welfare products. A growing body of research examines consumer attitudes towards farming practices, with one objective being how to encourage consumers to adopt more sustainable dietary choices. These could include decreasing meat consumption or replacing dietary choices with higher welfare animal products or alternatives. Knowledge of public attitudes to welfare issues is also valuable for informing changes to legislation and policy.

Ongoing discussion of the many ways human and animal lives are interrelated draws on arguments from philosophical, scientific and political perspectives (Taylor, 2013). The status of animals has fluctuated widely throughout history and across cultures, and that variation is maintained in terms of the perceived use of the species of interest, as well as the influence of cultural, societal and experiential factors; and the ambivalence that defines human relationships with animals is neither recent nor limited to a specific social group (Aarts, 2002). People relate to animals in a wide variety of ways; from positive
connections such as affection, respect, admiration, companionship, trust and safety to indifference, fear, neglect and cruelty (Garner, 2004). The exploitation of animals for human gain is culturally embedded in societies around the world. Animals have served as a source of nutrition and sustenance, their hides worn to shield humans from the weather, their uniqueness displayed and paraded for entertainment (Burns & Paterson, 2014; Russell, 2002). Despite the ubiquity of food, entertainment, and resources based solely on the commodification of animals, there are calls for a reconsideration of how exactly we treat animals and whether we ought to treat them as we currently do. Now is therefore an opportune time for researchers to examine human relationships with animals and identify areas in which concerns can be placated and replaced with more ‘humane’ systems and methodologies.

Over the last several decades, farming has increasingly become more economically-motivated, driving a change in the relationships between humans and animals (Purcell, 2011). As more people live in urban settings, it is increasingly common for people, particularly younger generations, to not have any hands-on experience with farming animals. Despite the ‘urban-rural divide’ that limits connectivity between producers and consumers, there is a vast literature indicating growing concern within the public about farm animal welfare. With the prevalence of social media in today’s society, it is easier than ever for cases of farm animal neglect and abuse to be exposed to a large number of people (Grandin, 2014). Grandin (2014) explains how consumers can gather ideas about animal welfare issues from a range of sources; there are therefore many opportunities for enhanced communication about farming from farmers and producers. Alongside the scientific definitions of animal welfare exist a myriad of ways in which consumers conceptualise and assign importance to the welfare of farm animals (Ohl & Van der Staay, 2012).
Much research in the field of human relationships with animals has drawn upon empirical and theoretical studies to examine the most important factors in predicting attitudes towards animals (Clark et al., 2016; Frewer et al., 2005; Kjærnes et al., 2007). The consensus is that the relationship between attitudes towards animals and behaviour is complex and dependent on the personality, psychometric and demographic of the individual as well as the species of animal in question. Beyond the level of individual characteristics, it is likely that external factors have the potential to influence attitudes, and in turn behaviour; for example, education, experience, knowledge and social climate (Serpell, 2004). An increase in the public’s awareness of ‘animal-friendly’ food products and the advantages they offer over conventionally-produced items has led to an increase in the market-share of high welfare foods. For example, free range egg sales now comprise 52% of the UK egg retail sector (British Egg Information Service, 2016). Of 842 UK residents who took part in a study by Clonan and colleagues (2010), 70% stated they purchased free range eggs either often or always.

2.5.1 Concerns about animal welfare

Consumer concerns about the ethical implications of animal-based food production are increasing and this forms an important factor in many consumer’s purchasing decisions (Kjærnes, 2012). Concern for animal welfare varies geographically, with variations in purchasing power, availability of high welfare products and awareness of farming between countries and regions due to deviations in wealth and food supply (Fraser, 2008). Studies have consistently shown that consumers are concerned about animal welfare and rate it as an important issue (Defra, 2011b; Pickett et al., 2014). In a project sponsored by the European Commission’s FAIR programme, researchers examined concerns among European consumers regarding animal welfare. The participants in the study expressed concern for farm animal welfare, however this concern did not translate directly into food choices (Harper & Henson, 2001). For many, animal welfare formed part of product
quality alongside attributes such as food safety, quality, and healthiness (Harper & Henson, 2001). In addition to food safety, consideration for the wellbeing of animals also formed an important part of concern about animal welfare.

Attitudinal research suggests consumers are concerned about farm animal welfare but lack general knowledge of how welfare is managed and how it can be improved across different species (Clark et al., 2016). In the latest Eurobarometer research (European Commission, 2016), 94% of surveyed Europeans believe it is important to protect the welfare of farm animals. Furthermore, 82% of those surveyed believe farm animal welfare needs improvement. Concern for farm animal welfare is prevalent throughout the Western world (Vanhonacker & Verbeke, 2014), but such concerns do not necessarily translate into behaviour.

A study by Defra (2011b) revealed that among 3000 UK households, 76% stated that animal welfare for egg and chicken meat production was either ‘quite important’ or ‘very important’, and 65% and 50% claimed to actively seek higher welfare ranges of these respective food items. Consumers want assurance that farmers care for their animals and provide a good life to livestock before they are slaughtered (Miele et al., 2013). The treatment of farm animals is increasingly thought of as an important factor when selecting meat, egg and dairy products (Farm Animal Welfare Council, 2009). Among 1,061 Australian consumers surveyed in a study by Coleman, 71% agreed that farm animal welfare is an important consideration (Coleman, 2007).

Qualitative consumer studies indicate that consumers perceive animal welfare as a highly polarised issue. On one end of the spectrum, ‘factory farming’ is associated with negative animal welfare. On the other end, examples such as ‘free-range’ and ‘organic’ exceed animal welfare standards (Verbeke, 2009a). Despite this general conceptualisation of
animal welfare, consumers lack technical understanding of farming systems and food production (Miele et al., 2013)

2.5.2 Consumer awareness of farm animal welfare

Consumer concern for animal welfare is dependent on a number of issues, including values, lifestyle, socio-demographics, food labels, the personal importance of animal issues, and also attitudes towards the different species used for food production (Font-i-Furnols & Guerrero, 2014; IGD, 2011; Te Velde et al., 2002; Vecchio & Annunziata, 2012). Some studies suggest that knowledge of animal welfare is related to attitudes and concern, and awareness of key animal welfare issues can facilitate purchasing decisions based on values and beliefs (Cornish et al., 2016; Frewer et al., 2005; Miele et al., 2013). However, empirical evidence supporting such claims are lacking (European Commission, 2016). Many studies suggest that, despite concern for farm animal welfare, consumers lack awareness of farming and issues relating to animal welfare (Cornish et al., 2016). This is partly due to lack of experience and opportunities to witness farming firsthand (Schröder & McEachern, 2004).

Consumers’ stated desire for information about animal welfare and labelling of high welfare products has been demonstrated through several surveys and experimental studies (Frewer et al., 2005; Hoogland et al., 2005; Vanhonacker & Verbeke, 2009; Zander & Hamm, 2010). In the latest Eurobarometer research on European consumers attitudes to animal welfare, 64% of respondents agreed that they would like to “have more information about the conditions under which farmed animals are treated in their respective countries” (European Commission, 2016, p. 4).

A link between information provision regarding animal welfare and willingness to pay for higher welfare products has also been demonstrated (Lagerkvist & Hess, 2011; Toma et al., 2012). Despite the increase in concern for animal welfare alongside a willingness
to pay more for high welfare products, many consumers lack awareness of important information on animal welfare, standards, and labelling. Vecchio and Annunziata (2012), for example, found that Italian consumers expressed concern for layer hen welfare yet remained unaware of the mandatory labelling system for eggs.

Consumers regard animal welfare as being important yet generally have low levels of awareness of farming methods, animal welfare implications of farming and welfare standards (Cornish et al., 2016; Worsley et al., 2015). Furthermore, consumers are faced with a confusing myriad of animal welfare and quality labels when selecting animal foods (Miele & Evans, 2010; Parker et al., 2013).

Consumers often do not know where to access credible information about meat, egg, dairy, and cheese production, yet express the desire to know more about where their food comes from (Smith & Brower, 2012). As Vanhonacker and Verbeke (2014) state, the provision of appropriate information can enable consumers to become more active in their reasoning about product purchases and thus increases the time and involvement invested when making product choices. Information about animal welfare originates from a variety of sources including the media, newspapers, magazines, animal protection groups, retailers, and friends and family. Eighty seven percent of Europeans who took part in the latest Eurobarometer survey believe in the potential of information campaigns to improve attitudes about animal welfare (European Commission, 2016).

It is crucial that consumers are provided with guidance on how to identify higher welfare animal-based foods — as providing information is only useful if consumers know how to turn information into action (Vanhonacker et al., 2010). Providing education may be all that is required when consumers have no prior knowledge. When beliefs are already held, however, a process of persuasion is required to elicit a change in beliefs (Coleman, 2010). As Coleman (2010) elaborates, the efficacy of attempts to education and persuade people
depends on the source and credibility of information, the source of information, and the nature of the targeted audience.

Vecchio and Annunziata (2012) highlight the discordance between consumers’ claimed concern for animal welfare and their lack of knowledge about farming standards and animal welfare. Their study found that Italian consumers have limited understanding of the welfare standards of laying hens. This suggests that concern is perhaps manifested through increased discussion of animal issues through the media and other channels rather than because of a comprehensive understanding of animal welfare issues. A lack of accurate information creates confusion and makes informed decision making a difficult process for consumers regardless of their level of concern.

Miele & Evans (2010) examined animal welfare concerns and awareness through 48 focus group discussions involving European citizens. They found that consumers generally had a minimal understanding of farming practices. Negative perceptions of ‘factory farming’ were prevalent, yet these beliefs were not supported by knowledge of the scale to which such systems operate in the food industry. The focus groups indicated a disconnect between consumers and farming; while many were aware of the negative impacts of intensive farming, they assumed that it is not an issue in their country and were therefore not actively engaged in the issue. The association and subsequent disconnect between consumers and the negatively perceived factory farming is an obstacle in the promotion of high welfare foods.

A study of British, Italian, and Swedish consumers by Mayfield et al. (2007) found a mere 32% of respondents felt they had sufficient knowledge of animal welfare yet 89% indicated the inclusion of a rating system about animal welfare on food items as important. The latest Eurobarometer study found that only 28% of respondents felt there is sufficient choice of animal welfare friendly food products, despite more than half being
willing to pay more for such products, and 52% of respondents claiming to look for high welfare indicators when shopping (European Commission, 2016). Clearly, confusion over animal welfare labels presents an opportunity for food companies to capitalise on consumers’ desire for more ethical purchasing decisions.

Consumers are also more likely to show increased consideration for animal welfare after a visit to a farm (European Commission, 2005). A greater involvement in animal welfare issues resulting from such on-hand experience is likely to translate into the purchase of high welfare foods; this reinforces the need for consumers to gain awareness of farming through several channels. The 2015 Eurobarometer survey found that 64% expressed the desire for more information on farming, and over 70% across member states believe the EU should do more to ‘promote a greater awareness of animal welfare internationally’ (European Commission, 2016, p. 30). This fits with results from focus groups conducted by Miele and Evans (2010) where Italian consumers regarded animal welfare as being important yet required more information to understand how their behaviour and purchasing choices could reflect this concern.

In consultations with stakeholders, the Australian Farmers’ Federation identified key issues to address to ensure the livelihood of the Australian agriculture sector in the future. One of the seven themes to emerge from the research was ‘agriculture within society’ (Sefton & Associates, 2013, p. 50). With regards to public perception, animal welfare is a major area of potential impact on the farming industry, alongside environmental sustainability, biotechnology/genetically modified organisms, social responsibility, health and food safety, and affordability of food (Sefton & Associates, 2013).

It is important that consumers have access to animal welfare information, not just from the perspective of encouraging the purchase of higher welfare products, but to also aid informed decision making. Giving consumers access to information about food
production also forms part of the wider political democracy of the food production industry (Kjærnes, 2012; Parker, 2013).

Greater levels of awareness about farm animal welfare lead to flow-on effects whereby pressure on legislators to improve animal welfare standards is increased (Miele et al., 2013). Societal pressure and consumer concern have caused many global corporations to implement welfare assurance schemes within their supply chains and transparency within the market (Amos & Sullivan, 2017b; Lever & Evans, 2017). Although existing research indicates a lack of awareness of animal welfare issues among consumers, corporate accountability of animal welfare is enabling communication about animal welfare to advance. Food businesses on a global scale have made improvements to social responsibility policy in recent years (Amos & Sullivan, 2017a). These policies seek to increase connectivity and benefits on several dimensions including social, environmental, and economic. Animal welfare has emerged as a key area in which food business has shown collective interest in investments in improvements to the standards they set for their supply chains. This is in part due to an overall increase in a consumer awareness of farming practices that runs concomitantly with a growing preference for foods produced under high welfare standards (Amos & Sullivan, 2017b).

Campaigns to increase awareness of animal welfare issues are not limited to consumers. A vast body of research points to the importance of positive attitudes towards animals in developing empathy in individuals towards other people. The impact of humane education has been studied in several contexts and led to promising results. A study by Bierne and Alagappan (2007) found that students’ attitudes significantly improved after completing an undergraduate sociology course on the treatment of animals in a variety of contexts. The inclusion of humane information at all levels of education highlights the potential for individuals to develop deeper levels of empathy and compassion with
respects to all animals they affect with their choices and this would have a flow on effect to their purchasing decisions.

2.5.3 Sources and opportunities for the provision of animal welfare information

Consumers in Western countries acquire information about animal welfare from a range of sources including television, the news, social media, animal protection groups, and social media. Friends, family, and colleagues also play a role in sharing information. Direct experience with farm animals is another factor that relates to concern and awareness of farm animal welfare. The Eurobarometer survey of 2006 indicated a connection between experience with farm animals and an understanding of animal welfare. Forty-seven percent of people who had visited a farm at least once claimed to consider animal welfare when purchasing food items (European Commission, 2007).

Vecchio and Annunziata (2012) suggest that labelling standards should be promoted to consumers by public authorities. Some studies have suggested European consumers perceive animal welfare to be a ‘public good’ and therefore the responsibility for ensuring it is at a socially acceptable standard and communicated as such lies with policy-makers (Miele & Evans, 2010; Miele et al., 2011). The European Commission’s study asked respondents from the 28-member states of the EU whom they believe should be responsible for animal welfare. Consumers were perceived as having the least responsibility, with only 12% of respondents agreeing animal welfare is a consumer issue to be handled by businesses. Responses from ten member states reported a majority agree that “the welfare of farmed animals is a matter for all citizens, to be regulated by public authorities” (European Commission, 2016, p. 45). However, across all responses, the relative majority believe farm animal welfare should be managed jointly by business and public authorities (European Commission, 2016).
2.5.4 Product labelling and transparency

Mindful of the fact that the average consumer generally desires products sourced from humane production lines, producers and marketers commonly use labelling to create positive perceptions of products (Jahn et al., 2005). The inclusion of accurate animal welfare information on product labels is an essential step in encouraging ethical purchasing decisions (Miele & Evans, 2010; Vanhonacker & Verbeke, 2014). This is because labels are a large source of confusion to many consumers who do not know which certification scheme or product label best aligns with their values (McEachern & Schröder, 2002). The effect of information on consumer decision-making is influenced by the consumer’s ascribed importance of animal welfare and the extent to which available information caters to their needs. Attitudes to animal welfare are reliant on awareness of the necessary issues and these can vary depending on the species in question. Consumers willing to monetarily support high welfare products must first be made aware of animal welfare issues and the purchasing options available for them to reflect their attitudes effectively (McKendree et al., 2014).

Producers use a wide range of terms to illustrate animal products as having high welfare standards. Examples include free-range, barn-laid, open-range, grass-fed, bred free-range, organic and biodynamic (Parker et al., 2013). Animal-based food companies often use third party certification schemes to label their products as reflecting a more compassionate stance on animal welfare. On an international level, the European Union implemented mandatory labelling of egg production systems in 2004. To effectively gauge the importance of animal welfare in buying choices, animal protection groups argue that animal-based food items should be labelled in accordance with terms defined in legislation (RSPCA Australia, 2008).
2.6 Stakeholder perceptions of animal welfare

A number of economic, political and social forces determine whether the methods of animal production fall within a socially acceptable level. Stakeholders differ in their perceptions of animal welfare and its importance. Changes to the public’s consciousness regarding farm animal welfare issues presents opportunities to farmers, producers, and food companies to consider how welfare can be addressed (Clark et al., 2016). Animal welfare scientists attempt to develop production systems that balance the interests of animals with the objectives of profitability and high production. Animal protection groups including the RSPCA, Animals Australia, and Voiceless in Australia, and numerous bodies overseas, are dedicated to improving the public’s awareness of intensive animal production and its negative impacts on the environment, animal welfare and human health. As farm animal welfare is covered by legislation of varying standards throughout the world, policy-makers are also an important and influential stakeholder. It is important to understand the perceptions and motivations of the various stakeholders relating to animal welfare. Understanding the importance stakeholders assign to animal welfare, their perceptions of consumer concerns, and their capacity to bring about improvements can facilitate effective changes to food markets and policy (Van Asselt et al., 2015).

Farmers and producers are directly responsible for the health and wellbeing of farm animals and can play an important role in providing a balance between positive welfare and production (Coleman et al., 2003; Hemsworth, 2003; Kauppinen et al., 2010). Due to their working relationships with animals, the views of farmers towards animal pain and animal welfare are generally different from those held by consumers, particularly as consumers are not economically implicated in farming. In research by Vanhonacker and colleagues (2008), citizens and farmers surveyed in Belgium largely agreed on the concept of animal welfare. Citizens prescribed a greater importance to the ability of farm animals to engage in natural behaviour and viewed the current state of animal welfare as
being less acceptable than that farmers perceived. As Vanhonacker and other authors emphasize, understanding the views and beliefs of the public and farmers can highlight areas in which further consumer awareness could help bridge the gap between farmers and shoppers. Te Velde et al.’s (2002) study on farmer and consumer attitudes to livestock farming indicated ambivalent attitudes present within both groups, with huge variation in values, norms, and awareness amongst consumers. Furthermore, both groups expressed what Te Velde et al. (2002) term “functional ignorance” which describes the willingness to avoid information on animal welfare, likely because such knowledge would implore a change to behaviours. Farmers must consider the economic costs of implementing changes to improve animal welfare, and this can impact their attitudes towards the wellbeing of farmed animals (Austin et al., 2005).

The effective provision of animal welfare information is important for farmers and producers who produce foods using higher welfare systems. The implementation of high welfare farming practices is costly and can require extensive effort — a challenge that farmers would like to see recognised by consumers as well as other actors in the supply chain (Miele et al., 2015). Producers who implement and maintain animal welfare above legislative standards should have the capacity to communicate their practices with the public. Farmers have different perceptions of the definition of animal welfare, partly due to their direct economic relationship with farm animals and farmers rate current animal welfare more positively than consumers (Te Velde et al., 2002; Vanhonacker et al., 2008). They also worry that consumers are not willing to pay the higher prices required to support improvements to welfare systems (Grandin, 2014). Open and ongoing communication between all stakeholders about animal welfare is the best way to keeping the public aware of how to shop according to their values and beliefs.

Several factors have led to the current position many consumers find themselves in where they lack awareness of how their food is produced; such factors include increased
urbanisation and declines in employment rate within the agriculture sector and the number of farms in operation (while the number of animals consumed has increased) (FAO, 2016). A lack of public awareness is considered a threat to the success of the agricultural industry and it is therefore important to restore consumer trust in farming and ensure the social licence to operate is restored (Sefton & Associates, 2013). However, there are opportunities for consumers to gain an appreciation of ethical advancements within the food sector. Various campaigns and sources of animal welfare information are discussed in the following section.

2.7 Consumer behaviour and barriers to ethical consumption choices

A wealth of literature seeks to identify the most important variables associated with consumer behaviour, particularly behaviour that exhibits ethical or moral virtue. An extensive amount of research has been conducted on the relationship between beliefs, attitudes and behaviour in the fields of sociology, anthropology and psychology. At the consumer level, to assess the importance of animal welfare initiatives in buying behaviour, researchers must be mindful of mitigating factors involved in consumer decision-making. Factors such as social climate, economics, and marketing are relevant to consumer purchasing decisions and are important to consider when assessing consumer responses to animal welfare as a product attribute (Defra, 2011b; Peattie & Peattie, 2009; Verbeke et al., 2012).

The determinants of pro-environmental behaviour have been examined extensively in response to an increased public awareness of climate change and environmental degradation (Bamberg & Möser, 2007; Ellen et al., 1991; Lee & Holden, 1999; Trivedi et al., 2015). Intention to support animal welfare initiatives has also been examined (Bennett & Blaney, 2002; Chilton et al., 2006; Lundmark et al., 2014; Taylor & Signal, 2009). However, limited studies have examined the impact that an awareness of animal
welfare issues can have on consumer behaviour. Furthermore, the relationship between consumer awareness and behaviour — which could be expressed in altered purchasing decisions — is an underexplored yet vital line of enquiry. In this section I discuss current knowledge on why concern among consumers is not directly aligned with demand for higher welfare products.

Despite their best intentions, consumers do not always purchase high welfare foods to the degree indicated by their responses to survey questions. A major shortcoming of research on consumer perspectives of animal welfare is the tendency to assume that the variables ‘willingness to pay’ and ‘intention’ serve as reliable indicators of actual behaviour (Carrington et al., 2010). Research in ethical consumer behaviour defines the ‘attitude-behaviour gap’, or the ‘ethical purchasing gap’, as the discrepancy between consumers’ attitudes and their purchasing behaviours (Bray et al., 2011; Carrington et al., 2016; Signori & Forno, 2016). The attitude-behaviour gap has been used to explain, not only the inconsistency between attitudes and purchasing behaviour, but also related behaviours which should theoretically be aligned with stated beliefs and values; for example, sustainable tourism, or supporting fair trade or green products (De Pelsmacker et al., 2005; Hibbert et al., 2013).

In Defra’s (2011) study of the attitude-behaviour gap, participants who stated animal welfare was important purchased 50% more free range eggs than those who did not ascribe the same importance, suggesting a possible link between attitudes and behaviour. However, there is strong evidence for a discrepancy between positive attitudes towards animals and corresponding product choices. Miele & Evans (2010) reported on the considerable gap between claimed concern for animal welfare and animal-friendly buying behaviours and the sales of high welfare products. According to the authors, while consumers may convey preference for high welfare products in a survey setting, other
practical issues inhibit their shopping behaviour from reflecting this preference because the experience of shopping offers consumers myriad of other factors that influence purchasing decisions. Consumers may also believe they are buying high welfare products when in fact they are buying high quality or are misled by the product label. Based on focus groups with Italian consumers, Miele & Evans (2010) identified two distinct groups — the ‘ethically competent consumers’ and the ‘ethically non-competent consumers’. The findings lead to an important realisation — the ethically competent consumers welcome information about animal welfare on product labels; conversely, ethically non-competent consumers are unlikely to have interest in higher welfare products even if they were more easily accessible. Lack of awareness or information is therefore beneficial to some, but not all consumers (Miele & Evans, 2010). For the concerned consumer, having an awareness of the availability of higher welfare products and how they benefit animal welfare can aid in the decision-making process (Tawse, 2010). Furthermore, for some consumers, higher welfare products are not available (Nicholls & Lee, 2006) and, where available, they are often more expensive which can dissuade shoppers (Tawse, 2010).

As mentioned in previous sections, some consumers cite feelings of confusion or distrust over the credibility of food labels. In their study of 475 Brazilians, de Barcellos and colleagues (2011) found a weak association between people’s stated attitudes and whether they expressed their attitudes as part of their consumer behaviours. Among the reasons uncovered was a lack of trust in food labels. Whether information campaigns — as welcomed by the majority of respondents in the European Commission study (2016) — would make an impact is yet to be determined.

Consumers may be broadly aware of animal welfare issues and believe that higher welfare products are ethically virtuous yet be deterred from seeking higher welfare products because they believe it is not their responsibility. Whether animal welfare is a public good
was previously discussed in Section 2.5.3, and many consumers evidently relinquish a sense of responsibility since they believe legislators and food businesses should ensure the wellbeing of farm animals (European Commission, 2016; Miele & Evans, 2010).

Cognitive dissonance plays an important role in how consumers receive information about animal welfare. Many consumers subconsciously utilise strategies to overcome the dissonance they experience with regards to consumption of animal-based foods (Gosling et al., 2006; Rothgerber, 2014). While favourable attitudes towards animals are often experienced by consumers, a state of ‘dissonance’ is confronted when these attitudes coincide with the reality of meat production. To counter this, consumers may use devices such as avoidance of the issue or information pertaining to it, modification of beliefs. For example, consumers may justify their meat consumption by believing that production animals are bred to be eaten or that they do not have the mental capacity to suffer (Bratanova et al., 2011; Loughnan et al., 2014; Loughnan et al., 2010).

Modern human society is increasingly removed from livestock and animal production, which enables consumers to turn a blind eye to certain practices and the violence required of slaughter. Without physical interaction with livestock animals, consumers are enabled to make normative purchase decisions that are not reflective of their stated views towards animal welfare and their preferred conditions for raising and slaughtering of farm animals (Purcell, 2011). Without a contextual understanding and experience of animal production, consumers are absolved of responsibility for their consumption choices and the moral, social, and ecological impacts of such choices.

The following section will provide a broad overview of consumer behaviour within the meta-theory of human behaviour developed by Jager (2000). It will then discuss the study within the more specific contexts of the general theory of marketing ethics and the theory of planned behaviour. The theoretical perspectives discussed were used to guide the
qualitative and quantitative studies presented in chapters three, four, and five. Theories on decision making that can be applied to ethical consumer behaviour provide a foundation of knowledge upon which subsequent contributions can be made.

2.8 Theoretical perspectives

The research presented in this dissertation draws upon the knowledge base of a range of disciplines. I have elected to frame this dissertation within the broad interdisciplinary field of human-animal studies. Human-animal studies, also known as anthrozoology, allows researchers to question the relationships between humans and animals through the humanities, social sciences, and natural sciences (DeMello, 2012; Hurn, 2010; Marvin & McHugh, 2014). By examining human-animal relationships across social and natural sciences, a more in-depth understanding can be reached into what are complex and multifaceted associations. The methodological approach outlined in this dissertation is guided by perspectives on moral philosophy, sociology, consumer behaviour, and social psychology. Advancements in farm animal welfare are directed by animal welfare science and such changes are implemented through consumer, political and corporate engagement. As discussed in the preceding sections, the food industry and the investment community are taking notice of public interest in animal welfare and recognising the financial benefits to be gained from having a proactive approach to farm animal welfare.

Consumer attitude and behaviour research draws upon a wide array of theoretical perspectives to explain human behaviour, including perspectives derived from the disciplines of psychology, sociology and anthropology. However, the theories associated with human behaviour have been developed to serve a specific purpose and therefore the suitability of a particular theoretical framework to answer a specific problem may be limited. Several theoretical models can be utilised to examine ethical consumer behaviours, including mindful consumption of higher welfare animal food products. The
relevant theories I will discuss are Jager’s meta-model of human behaviour, the information deficit model, the general theory of marketing ethics, and the theory of planned behaviour. These theories and the related concepts are discussed in the following sub-sections.

As established by a review of the current literature, there is a gap in knowledge regarding consumers’ awareness of farm animal welfare, and how awareness relates to attitudes and purchasing behaviours. Studies on consumer behaviour draw upon theoretical frameworks that differ in a) whether they consider consumer behaviour at an individual or a social level, and b) whether consumer behaviour results from a process of cognitive automation or reason (Jager, 2000). The majority of models in the area of consumer behaviour include three dimensions: cognition (beliefs), affective (attitudes) and conative (intention for behaviour, doing) (Verbeke & Viaene, 1999).

The most commonly cited response hierarchy model in the consumer behaviour literature is the high involvement theory that suggests beliefs influence attitudes and in turn influence behaviour (Fishbein & Ajzen, 1975; Verbeke & Viaene, 1999). The low involvement hierarchy, as discussed by Krugman (1965) and Hawkins & Hoch (1992), describes consumers as passive receivers of information who make decisions based on habit rather than processes of reasoning. The low involvement learning theory argues that affective processes follow behaviour which then follows beliefs, implying a decision-making process that lacks deliberation (Armitage & Conner, 2001; Lastovicka & Gardner, 1978). Whether a decision is high or low involvement depends on the circumstances of the consumer and whether they are satisfied with their current behaviours. In the case of animal products, a consumer may be satisfied with their habitual purchase of certain foods in which case their behaviour would be classified as low involvement. Exposure to information about the inherent impacts of intensive animal
production on animal welfare, the environment, and human health may prompt a consumer into a state of high involvement.

2.8.1 Jager’s meta-model of human behaviour

Among the theories on human behaviour, several salient concepts are relevant for research on behaviour change. Jager’s (2000) work on consumer behaviour incorporates many psychological theories into a meta-theory that explains human behaviour at individual (micro) and environmental (macro) levels, and also explains how these levels are connected (Figure 2.1). The processes that influence behaviour at the micro level are accounted for with psychological theories on planned behaviour, human needs, cognitive dissonance, self-perception and social comparison (Jager, 2000).

Figure 2.1 Jager’s meta model of consumer behaviour (Jager, 2000, p. 58)
The macro-level factors are described by the meta-theory as the determinants of human behaviour. They include the natural environment from which resources are sourced, which is connected to the economy, technology, demography, institutions and cultural systems that in turn affect the individual. Technological and scientific developments have shaped animal production systems over time and lead them to become more efficient and mechanised (Vanhonacker et al., 2010). Institutional systems such as the government and the legal system also form part of the human environment.

At the individual level, several factors are known to drive human behaviour. There are four clusters of individual processes within Jager’s model: needs and values, behavioural opportunities, consumer abilities, and consumer uncertainty. Needs and values describe the motivating internal forces that drive people to perform a certain behaviour. Much work in ethical consumerism draws upon Maslow’s hierarchy of needs to demonstrate that those needs at the bottom (sustenance, shelter, safety, warmth) must be met before an individual will be motivated to fulfil needs at a higher ranking (self-actualization, self-fulfilment) (Maslow, 1943).

Values are the principles regarding desirable behaviours or states of existence and, when aligned with the concept of needs, values represent the drive to fulfil particular universal requirements (Schwartz, 1994). Values vary at the individual level because some people place higher emphasis on particular needs being met than others. The degree to which an individual places value on a need being met is related to whether that need is being satisfactorily met. In the case of animal welfare, it could be argued that, if products with higher welfare are more expensive than products with lower welfare, it is unlikely that animal welfare will be a competing value for people who are still trying to fulfil basic
needs of sustenance. Similarly, it is natural that some consumers will value products attributes such as quality, health and safety as more important than animal welfare (Vanhonacker et al., 2010).

An additional variable at the individual level of behaviour is the opportunities available — these are the products and services available to the consumer. Animal-based foods in this study comprise the ‘opportunities’ and, as a commodity, fulfils a range of needs including sustenance, identity and leisure (Jager, 2000). Jager’s meta-model combines needs and values with opportunities at the level of need satisfaction. The feasibility of a consumer selecting a high welfare animal product is dependent on their perception of how the product will satisfy their needs, but also on characteristics of the product itself such as availability, price and consumer awareness of the product. Whether the consumer will purchase a higher welfare food product is also dependent on the consumer’s abilities, including the social, cognitive and financial capacity to make the purchase.

Strategies to modify behaviour towards more sustainable, animal-friendly orientation require that consumers utilise their skills to enquire and accept information pertaining to the product. Knowledge of the implications of supported intensive farming is dependent upon the advertising and public awareness of the issues surrounding the practice (opportunities), and on the ability of the consumer to seek/accept the information, acknowledge that it is true, and adjust their behaviour accordingly. The ability of the consumer also includes social and cognitive resources such as attitudes, norms, values and knowledge. Because the concept of knowledge is encapsulated in both opportunities and abilities, it is fitting that Jager’s (2000) meta-model groups these factors together as behavioural control. These factors, in combination with the opportunity for consumption, determine the consumer’s behaviour.
Finally, uncertainty describes the risk involved with consumer decisions in terms of the benefits that the product will provide and whether the consumption of the product is a sustainable act (Gosling et al., 2006; Rothgerber, 2014). The concept of uncertainty is relevant for consumers in terms of their knowledge of a product because of the ways in which individuals form meanings from information provided. As discussed in previous sections, consumers increasingly experience confusion about the availability of higher welfare products; this can impact how they make food purchases. Consumers can also be uncertain about the impacts of their behaviours on animals and the environment.

Collectively, the macro-level activity then affects the individual by determining what resources are available and whether the system is culturally acceptable. At the macro-level, although the model is designed for environmental behaviour in general, clear environmental impacts result from intensive farming practices. Existing concomitantly with the natural environment is the human environment. Advances in science, technology and the economic incentive to derive maximum profit from animal agricultural systems all act as powerful drivers of human behaviour because they determine the systems we utilise for production. The cultural implications of consumer support for intensive farming apply directly to the consumer model. The technological advancements and institutions of mechanised systems of animal agriculture lead to lower prices, in turn feeding the high demand for animal products. This then perpetuates increased reliance on such systems. The culture of silence surrounding the ethical viability of intensive animal production systems also reinforces the collective systems of denial and affective ignorance surrounding the negative animal welfare and environmental impacts of intensive farming.

Jager’s meta-model posits that the micro-level environmental factors — the driving factors — determine the category of processing purchasing decisions are made. For the
purposes of this dissertation, while the meta-model presented by Jager provides an overview of the individual and societal factors influencing consumer choices, alternative theoretical models are used to further understand individual consumer behaviour.

2.8.2 The information deficit model of behaviour change

The information deficit model of behaviour change is highly relevant to the research problem. The model explains behaviour change through a top down approach whereby information influences values, which in turn influence attitudes and can cause a resultant change in behaviour. Originally developed within the context of science communication, the information deficit model stemmed from the belief that there are those in society with knowledge on certain topics, and those without. Through a process of information provision, attitude change can occur (Besley & Tanner, 2011; Nerlich et al., 2010). The information deficit model also underpins many campaigns to change consumer behaviour, particularly regarding supposed ethical food choices. The four stages of the model are shown in Figure 2.2.

The information deficit model has been studied widely with mixed results. Although people may not have knowledge on a particular topic, their attitudes are informed by a range of other variables, many of which I have discussed in the preceding sections. Research on the applicability of the model also highlights the importance of framing information appropriately for the target audience, which requires an understanding of the audience’s motivations, beliefs, and values, as well as the political and social environment (Owens, 2000). A meta-analysis on the public understanding of science found knowledge to be a strong predictor of attitudes to GM foods when knowledge of biology and genetics was assessed as opposed to general knowledge (Allum et al., 2008). Allum et al. (2008) also note the widespread evidence for the relationship between knowledge and attitudes throughout diverse cultural contexts and through time.
2.8.3 The general theory of marketing ethics

Hunt and Vitell’s general theory of marketing ethics (Figure 2.3) has been successfully applied to study ethical consumption in a range of contexts (Hunt & Vitell, 1986). The theory attempts to explain the decision-making process of individuals required to make choices of ethical concern, including as part of business preferences and consumer purchases. The theory is relevant when an individual is required to decide which has an ethical component. The individual then considers the various alternatives available to them (which may not include the full range of options) and arrives at a decision based on deontological and teleological evaluations. As part of the deontological evaluation, individuals consider the ethical problem — for example buying meat from intensively raised animals — in terms of whether it is ‘right or wrong’. The process of deontological evaluation causes the individual to call upon their values and whether each alternative behaviour adheres to their perception of ethically virtuous behaviour. In the teleological evaluation, the individual considers the consequences of possible behaviours in terms of: perceived consequences for relevant stakeholders, the probability of those consequences
impacting the stakeholders, the desirability of each consequence, and the importance of each stakeholder group. Figure 2.3 provides a depiction of the theory. The variables on the far-left side within the dashed border are relevant for marketing professionals.

It is important to note that for consumers to proceed through the stages of the model, they must perceive the choice presented to them as having an ethical component. Without this belief, alternatives will not be sought. This reiterates the importance of awareness in allowing consumers to make purchasing decisions. In the case of animal welfare, it is significant that consumers are presented with adequate information on the problematic nature of intensive farming to allow adequate ethical assessment to take place.

![Diagram of Hunt & Vitell's general theory of marketing ethics](image)

*Figure 2.3 Hunt & Vitell's general theory of marketing ethics (Hunt & Vitell, 2006)*
2.8.4 The theories of reasoned action and planned behaviour

The theories of Reasoned Action and Planned Behaviour have been used in food studies with some success (Ajzen, 1991; Fishbein & Ajzen, 1975; Middlestadt et al., 2011; Robinson et al., 2013). The theories are based on the cognitive processes that determine the intention to perform a behaviour as well as the proceeding behaviour. The Theory of Reasoned Action specifies two determinants of intention. The first is attitude, which includes the beliefs the consumer has of the behaviour (purchasing a certain product) and the evaluation of the outcomes. The beliefs determine the degree of favourability the individual has towards the behaviour. The second determinant of intention is the subjective norm, which identifies the perceived social consensus of the behaviour (Hansen, 2008).

The Theory of Planned Behaviour (Ajzen, 1991) is an extension of the theory of reasoned action yet also incorporates the concept of behavioural control. Behavioural control is relevant to consumer studies, particularly where a change in behaviour is encouraged by interested stakeholders, because the consumer may believe products with adequate animal welfare are not freely available or, if they are, individual purchases are not likely to make a difference to the market. Vermeir and Verbeke (2006) divide behavioural control into perceived availability and perceived customer effectiveness to explore the relationship between behavioural control and intention to purchase high welfare animal products. The power of uncertainty in driving consumer behaviour is highlighted in the misunderstanding of labels on animal products. The Theory of Planned Behaviour (TPB) is ideal for research on consumer behaviour because it incorporates cognitive processes at both the individual level through the consideration of attitudes and perceived behavioural control, and at the social level through the measures of subjective norms (Bray, 2008).
The Theory of Planned Behaviour and the relationships between the precursors to intentions and behaviours are shown in Figure 2.4.

Figure 2.4 Theory of Planned Behaviour (Ajzen, 1991)

The adoption of the TPB is ideal for this dissertation for two reasons. Firstly, the theory incorporates the most important variables from the consumer behaviour literature. Subjective norms, perceived behavioural control, attitudes and beliefs are all identified in the literature as being predictors of consumer decisions. Secondly, the model allows for relationships of causation to be explored including the effect of knowledge on consumer behaviour (Nolan-Clark et al., 2011). Terminology relevant to the theoretical framework is utilised in this dissertation. Explanations of key terms are provided in the following section.

Research into ethical consumer behaviour includes examination of the underlying beliefs, attitudes and norms and draws upon a range of theoretical perspectives. In the context of the theory of planned behaviour, attitudes are defined as ‘the degree to which a person
has a favourable or unfavourable evaluation or appraisal of the behaviour in question’ (Ajzen, 1991, p. 188). Attitudes can also be understood as ways of feeling about something, or an opinion. Attitudes towards farm animal welfare were discussed in section 2.5.1.

Attitudes towards a certain product may be influenced by intrinsic characteristics of the product itself or extrinsic factors pertaining to the individual. Intrinsic factors include product attributes such as taste, perceived health benefits, cost and ethical concerns such as environmental impacts and animal welfare. Any given product will have a range of attributes that the consumer evaluates to arrive at their attitude to the product. Between consumers there is great variation in how important certain attributes are for a given product — termed attribute importance (Van Ittersum et al., 2007).

Beliefs are an important component of attitudes and are widely discussed in the context of consumer behaviour. According to the TPB, beliefs influence attitudes and are defined as the cognitive knowledge of an object; that is, what its attributes are and how they may be beneficial or detrimental to the individual’s goals. In contrast to the affective aspect of attitudes — how an individual feels about a particular product, beliefs are cognitive — what an individual thinks about the product (Ajzen, 1991).

Ajzen and Madden (1986) identify two types of beliefs: behavioural beliefs (influence attitudes towards the behaviour) and normative beliefs (beliefs about how the behaviour is perceived by other people). Behavioural beliefs can be associated with certain attributes of the product or behaviour; for example, organic meat is healthier than intensively raised meat. Normative beliefs are markers for how an individual values the actions and opinions of those around them. An individual’s perception of the belief and its associated attributes and consequences therefore inform their attitude toward the behaviour in question. Values may underpin beliefs — they indicate an individual’s principles and the judgements they
make about the regard given to certain things or behaviours — thus they are influenced by moral, ethical, and sometimes religious perspectives. People can also make different decisions depending on whether they are acting as citizens or consumers; consumers are more likely to act upon personal preferences as opposed to their claims as a citizen to value the ethical treatment of animals (Degeling & Johnson, 2015). The potential of campaigns to change levels of awareness and attitudes based on value-compatible information was discussed by Graham and Abrahams (2017), who found that framing messages about meat consumption to existing value systems caused a change in attitudes.

Within the TPB, knowledge influences behavioural beliefs. The concept of knowledge as it applies in this study will be explored as a determining factor of behavioural beliefs. The issue of whether consumers have adequate knowledge of their food products is complex. The term knowledge in itself is associated with truths, facts and acknowledgement. Does the exposure to facts warrant knowledge or does it require a deeper understanding? At the most basic level, for consumers to make an informed decision on the products available, a certain level of transparency must exist in the system (Hoogland et al., 2005; Vanhonacker et al., 2010).

Of the many factors that influence human behaviours with regards to animal products, knowledge of the specific ways in which animals are treated for human benefit warrants further research attention, although it is beginning to earn more attention. Although animal products are readily available to the consumer, research suggests a significant disconnect between the consumer and the product in question (Vanhonacker et al., 2010). Based on research to date, the typical consumer has a limited understanding of the moral, environmental and social implications of modern systems that produce animal based food products. For example, Worsley et al. (2015) found that Australians’ knowledge of the
agricultural industry was low; however, there was a shared belief that farmers are performing well in their roles and contributing in a positive way to society.

The provision of information to the public with the intention of modifying behaviour is used by government and non-government organisations for a broad range of issues, including environmental, health, and safety causes. The theory underlying this approach — termed the “deficit model” — is that the general public has a limited understanding of any given issue, thereby once they receive information from a credible source, they will adjust their behaviour according to their values (Sturgis & Allum, 2004, p. 55). This model has been used in the domain of public attitudes towards science, and studies demonstrate that when personality and demographic characteristics are controlled, there is a correlation between knowledge of scientific concepts and attitudes towards science (Sturgis et al., 2004). However, it is important to note that positive attitudes towards a certain practice — in this case ethical methods of animal farming — do not imply those attitudes will translate into direct behaviour. As discussed in section 2.7, for several reasons, there is a gap between what people say they care about and what they do.

A key aspect of the TPB is an individual’s perception of the social conditions framing a particular behaviour. Normative beliefs describe whether peers and other important social connections would approve or disapprove of a certain behaviour (Ajzen, 1991). The importance an individual ascribes to such evaluations also contributes to a social norm. The way in which people view the behaviours of those around them, and how they feel about performing behaviours in front of others, influences behavioural intention (Bennett & Blaney, 2002; Cialdini & Goldstein, 2004). Norms can be described as collective, that is, what actually happens within a community; and perceived, which is what an individual understands a collective norm to be (Lapinksi & Rimal, 2005). People also perceive behaviour in terms of what is the most common in a given situation — the descriptive
norm, and what is the socially acceptable behaviour in the same circumstance — the injunctive norm (Cialdini & Kallgren, 1990: 1015). Perceived normative behaviours have been shown to exert influence over behaviours (Allcott & Mullainathan, 2010). They are therefore important to examine when attempting to understand whether people are likely to act on their concern for animal welfare. A strong link between social climate and adopting a vegetarian/vegan lifestyle has been shown (Cherry, 2006; Christie & Chen, 2017; Templeton et al., 2016).

The concept of perceived behavioural control incorporates the factors that mediate between behavioural intention and behaviour. These factors influence whether the action can be performed; for example, time, money, skills, and opportunities. Despite having concern for animal welfare, consumers may feel they have little control over what they buy or how their purchases can reflect their ethical preferences. These important aspects of behavioural control will be explored in the following chapters.

The theories discussed in this section offer salient concepts about consumer behaviour based on research spanning several decades. Although such theories are increasingly applied to understand ethical consumer behaviour, there has been limited application on high welfare animal products. In designing the research studies discussed in the following three chapters, I utilised current knowledge on information as a means of attitude adaptation, social norms, perceived behavioural control, and behavioural intention.

2.9 Conclusion

As societies become wealthier and more populated, producers and suppliers experience increased pressure to provide adequate sustenance. Intensive animal agricultural systems make up the bulk of farming in the developed world and are increasingly doing so in the developing world, yet not without external costs. The environmental, human health, and animal welfare issues that eventuate from intensive animal agricultural systems are of
concern to many members of the public. Intensive animal production is associated with environmental degradation, loss to biodiversity, and is a major cause of pollution. It is also significantly more water and resource intensive than other forms of agriculture. Globally, there is strong demand for animal protein, but this is at the detriment to human health, with the association between chronic illness and meat consumption reported widely. Antibiotic resistance resulting from widespread use in intensive farming can cause serious ramifications for treating illness in humans, and foodborne viruses are responsible for serious illness and fatalities throughout the world.

The impacts of intensive farming on animal welfare are widely reported, with the detrimental impacts on animal well-being resulting from confinement, bodily modifications, and denying animals the capacity to express their natural behaviours being among the most contentious issues. Chickens and pigs reared for meat, and hens raised for eggs, are among the species most often cited as a source of concern among consumers. Attention on the welfare of dairy cows, beef cattle, and seafood has grown in recent years. Campaigns by food business and animal protection organisations have increased public awareness of animal welfare issues, and food brands, labels, and certification schemes which cater to the ethically minded consumer have emerged.

Attitudinal research demonstrates a growing subsection of consumers who are concerned about intensive farming and its effects on the environment, their health, and animal welfare. Many consumers perceive animal welfare as an intrinsic indicator of food quality alongside taste, safety, and healthiness. Research shows consumers prefer supporting production systems in which animals are given the opportunity to express their natural behaviours whilst living free from mental and physical discomfort. Despite research indicating consumer concern, higher welfare foods still only comprise a small market share. Many reasons could explain the attitude-behaviour gap between consumer-stated...
preferences and their behaviour. Consumer awareness of animal farming and animal welfare is an underexplored yet important area, and understanding the role of information in bridging the gap between consumers, producers and food businesses is a worthy line of inquiry.

Current literature indicates that despite concerns surrounding animal agriculture, people do not have adequate knowledge of the impacts of such systems, and this may either be through a lack of information, or the maintenance of a psychological and cultural disconnect between attitudes and behaviour. Research to date has sought to identify the most important variables that predict behaviour as well as their relative strengths. However, current research leaves several opportunities open for future research because they either a) focus on pro-environmental behaviour as a whole rather than consumption of animal products, b) lack a clear theoretical background, or c) lack the methodological framework to infer the influence of information on attitudes and behaviour.

The following chapter presents the first of three studies I conducted. Surveying Australian consumers about their knowledge and attitudes of animal welfare allowed me to gather information about how consumers perceive animal welfare issues and whether higher welfare products are likely to be demanded by regular shoppers in the future. The focus of all three studies is farm animal welfare and higher welfare alternatives. While I assess consumer awareness and concerns on the health and environmental impacts of intensive animal production, it is the attitudes towards animal welfare that are examined in comprehensive detail. Pro-environmental behaviour may include attempts to avoid intensively produced animal products; however, it is important to understand consumers’ perspectives on ever-common animal welfare issues as singular issue as opposed to one embedded within a construed ethical standpoint. As the results of the study discussed in
chapter four indicate, individuals are affected by various arguments for and against the current food system.

The studies presented in this dissertation are guided by theoretical perspectives on ethical consumerism and behaviour change. In the following chapter, I frame the dissertation within the context of the relevant theories and discuss the variables included in the research design of the subsequent chapters. Finally, to overcome the gap that exists on the impact of information, the study presented in chapter four discusses both qualitative and quantitative insights on a cohort of consumers over a nine month period.
CHAPTER THREE

CONSUMER ATTITUDES AND AWARENESS OF ANIMAL FARMING

3.1 Introduction

This chapter presents the results of an empirical study designed to investigate the relationship between Australian consumers’ attitudes towards, and awareness of, modern farming practices and their consumption of animal-based foods. The study examines consumer awareness and preferences for eggs, pork and chicken products as well as attitudes towards the treatment of farm animals. The results generated from the study allowed for an exploration of the relationships between self-rated awareness of farming and actual awareness and attitudes to the treatment of animals, as well as social and socio-demographic variables. The study advances the thesis by providing empirical data on actual and perceived awareness of farm animal welfare, and indicates that overall consumers do not have an adequate understanding of modern farming systems.

The increasing global reliance on intensively-farmed meat, eggs and dairy products has provoked growing concern among consumers about the treatment of farm animals involved in food production. As discussed in the literature review, animal farming has advanced to embody a system that is the pinnacle of all that is mechanised, automated and intensive. Due to a growing awareness among the general public of intensive farming, in addition to media coverage on several major food health crises and scandals in recent years, the ethical dimension of food production has developed into a legitimate concern throughout the world (Ingenbleek et al., 2013). Legislative regulations on the use of animals for food production is now influenced by not just scientific perspectives but also

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2 The results of the online survey discussed in this chapter have previously been published in Healy, S. (2014). Animal farming in Australia: consumer awareness, concern, and action. In L. Burns & M. Paterson (Eds.), Engaging with animals: a shared existence. Sydney: Sydney University Press.
economic, political and moral factors relevant to the ways in which humans use animals for food (Averós et al., 2013). Societal attitudes towards animal treatment therefore form an inevitable yet important layer to the complexity of how farm animal welfare is managed to meet the public’s demands for high quality foods produced in an ethical manner.

While consumer demands are important for shaping animal welfare standards in the food industry, they are not necessarily aligned with attitudes and behaviours. Inconsistencies between stated concerns and preferences, and actual consumer behaviours, form the basis of the ‘attitude-behaviour gap’ concept which was introduced in chapter two. It is nevertheless important to gain a baseline understanding of attitudes to inform the use and applicability of welfare accreditation schemes and changes to animal welfare policy. It is also important to investigate the level of knowledge and understanding that consumers have of animal welfare, as awareness can have a significant impact on consumer behaviours.

Intensive animal production has largely replaced traditional farming in the US, Europe and Australia, and increasingly in the developing world also (Akhtar et al., 2009; Grant, 2017; Winter et al., 1998). Thus, understanding how consumers view such systems and whether demand for higher welfare foods will increase in the future, is important. Concerns about the welfare of farm animals have been reported in many studies throughout the world including Australia (Humane Research Council, 2014; Taylor, N. & T. D. Signal, 2009), Europe (Clonan et al., 2010; Defra, 2011b), in the US (Grimshaw et al., 2014; McKendree et al., 2014) and increasingly in Asian countries such as China (You et al., 2014). Heightened concerns surrounding the ethical implications of animal welfare cause stakeholders — including producers, retailers, manufacturers, animal
welfare scientists and policy makers — to investigate the origins of such concerns and the information on which they are based.

Consumers are further removed from farming than ever before, I postulate that there is a relationship between consumers’ awareness of animal welfare issues and their preferences for animal-based foods and attitudes towards the treatment of farm animals. Furthermore, the literature suggests social environment and beliefs about the purchasing behaviour, including how much control consumers have over purchasing higher welfare products, can exert influence over consumers in a way that is reflected in their product choices and attitudes (Pande & Soodan, 2015).

An understanding of the ways consumers perceive animal welfare and their willingness to support higher welfare production can inform producers, retailers, and policy-makers of the market changes likely to take place based on consumer concerns and demands, and ensure policy and practices remain at a socially acceptable level (Vanhonacker & Verbeke, 2014). It is also important that attitudes and levels of awareness among consumers are understood so that strategies for their improvement can be developed if required, and applied improvements are communicated to the public in an effective way (Kehlbacher et al., 2012). Without a sound understanding of farming practices, it is likely that consumers will condone practices through the actions of their purchasing behaviour that they may otherwise be opposed to. In the same vein, the meat, egg, and dairy industries face increasing public scrutiny and suffer economic implications of the public lacking the adequate understanding of production practices (Worsley et al., 2015).

In their review of agricultural literacy research, Kovar and Ball (Kovar & Ball, 2013) discuss the need for the public to be educated on agriculture and the challenges the industry faces in the wake of a rising global population to ensure the industry is supported through political reform and policies changes. Policy on welfare standards is largely
informed by public opinion, of which consumer attitude studies form an important tool (Goodfellow et al., 2014) The extent of awareness of farming and animal welfare among the general public is currently an underexplored area of research. Attitudinal studies also allow producers and retailers the opportunity to supply consumers with higher welfare products and create marketing strategy based on demand for higher welfare products (McEachern et al., 2007; Vanhonacker & Verbeke, 2014).

There has been an increase in the availability of alternative animal-based foods based on an assurance of a food quality standard which features high animal welfare as a significant product attribute (Cherry et al., 2013). High welfare eggs, high welfare chicken meat, and pork produced from farms free of sow stalls and farrowing crates — where the pigs are free to move around — are now commonly available at major supermarkets and retailers. It is important that producers investing in such systems understand consumer perceptions on animal welfare and whether the products of higher welfare farms align with their values. Research focused on consumer awareness is relatively minor compared to that of attitudinal studies and relatively little research has been done on the relationship between awareness of animal welfare issues, attitudes, and consumption of animal-based foods (Bruce, 2012; Worsley et al., 2015).

This chapter is organised as follows: the chapter aims are presented in section 3.2, followed by an overview of the methodology that informed the questionnaire design, sampling and analysis. The results of the questionnaires are presented in section 3.4 followed by a discussion of the implications of the results to theory and practice and how the results answered the relevant research questions in section 3.5.

3.2 Chapter aims

This chapter addresses three of the five research questions discussed in the introduction chapter of this dissertation. The aim of the research presented is to ascertain the level of
awareness that consumers have of farming and animal welfare, including their self-rated awareness. The relationship between consumer awareness, attitudes towards animal welfare, social variables, and socio-demographics was also investigated. Quantitative data was collected using an online and mail questionnaire to investigate the relationship between salient variables identified in the literature review presented in chapter two. As limited research effort has focused on the relationship between awareness of farming and concern for animal welfare as well as consumer behaviours, I undertook the research presented in this chapter to explore this relationship through the use of questionnaire data. These results then informed the subsequent research presented in the later chapters of this dissertation.

This chapter advances my thesis by answering the following research questions set out in the introduction:

1. What level of awareness do consumers have of farming and animal welfare?
2. What attitudes do consumers hold towards the treatment of farm animals?
3. Is there a relationship between consumers’:
   a. Behaviour (in the form of diet)
   b. Awareness of animal welfare
   c. Attitudes
   d. Subjective norms and perceived behavioural control
   e. Socio-demographics

I postulated that respondents would have a relatively limited awareness of animal welfare and animal farming yet reported concern for the treatment of farm animals would be high. Based on previous literature in this field, I predicted that respondents would report preferring product attributes that represent superior animal welfare measures, yet several factors would impede consumers from purchasing higher welfare food products. An
important component of this dissertation is the identification of such factors and determining ways in which existing barriers may be overcome.

3.3 Methods

3.3.1 Methodological background

Attitudinal research relies heavily on questionnaires to collect information on individual attitudes, intentions, and motivations and to provide descriptive data on a research problem (Zikmund et al., 2011). Questionnaires can be distributed in a number of ways such as via telephone, mail, face to face or online and each method is associated with certain advantages and disadvantages. For the study presented in this chapter, I developed a questionnaire to investigate a variety of variables in a cross-sectional sample of Australian consumers. Two methods of survey distribution were selected in order to collect data from a wide range of individuals: online distribution and randomised mail distribution. Self-administered questionnaires are advantageous in that they are less expensive and more convenient than other survey methods (Bryman, 2012). Online questionnaires are becoming an increasingly popular way to gather data at a lower cost compared to other survey methods and the ease in which they can be distributed also allows for a large outreach (Babbie, 2015).

A problem with online questionnaires, however, is that obtaining a representative sample can be challenging because they only cater to respondents with access to the internet and differences between potential sampling groups may include other differences in target groups than this factor alone (Couper, 2008). Due to shortcomings in obtaining representative samples, online surveys are often combined with other modes of survey distribution to obtain a more representative sample. To overcome the issue of potentially obtaining a non-representative sample, I also utilised a mail questionnaire addressed to randomly-selected names from the Australian state of Victoria electoral roll.
3.3.2. Survey instrument design

Following completion of the literature review presented in chapter two, I compiled a list of variables to include in the questionnaire. I created the questionnaire using LIME survey software to collect data through online distribution. The same questionnaire was also copied to a Word document for mail distribution. The questionnaire was designed to include five broad categories relevant to the research questions addressed in this chapter. These were: consumption behaviour, awareness, attitudes and preferences, subjective norms and perceived behavioural control, and socio-demographics. A table summarising the variables included in the questionnaire is shown in Table 3.1 at the end of section 3.3.

*Consumption Behaviour (diet)*

Participants were asked to indicate whether they abstain from eating any kinds of meat or if they were vegetarian or vegan. They were also asked to indicate the frequency with which they consume meat, eggs, and dairy and whether they seek to purchase these types of products with particular labels, for example, free-range.

*Awareness*

A self-rated awareness score was determined by asking respondents to rate their level of understanding of modern animal-based food production practices on a five-point unipolar scale ranging from ‘no understanding’ to ‘extensive understanding’. Respondents were also asked to rate their level of understanding of the labelling used on animal-based foods. Actual awareness scores were determined using two sections of questions. The first section comprised a list of statements about animal production from which participants were asked to indicate whether the statement was true, false, or if they were uncertain. Example statements from this include ‘beak trimming in laying hens is permitted without pain relief’ and ‘pigs raised intensively spend the majority of their lives indoors’. The complete list of statements is shown in Table 3.3 in the results section. The second section
was the same format as the first, but the statements were centred on the natural behaviours and welfare requirements of pigs and chickens raised for farming. Example statements include ‘pigs are largely inactive and spend most of their time sleeping’ and ‘the natural lifespan of a chicken is 2–3 years’. Awareness scores were calculated for each participant with a maximum score attainable of 17.

**Attitudes and Preferences**

Attitudes were measured using ‘profit’ statements from the PestPetProfit (PPP) scale developed by Taylor and Signal (2009) as well as five additional statements that referenced the viability of factory farming and the moral worth of livestock animals. The test-retest reliability of the survey instrument was determined by comparing respondents’ answers for categorical socio-demographic questions provided in Questionnaire One against their response in Questionnaire Five. The responses of each relevant question were entered into SPSS and Cohen’s kappa statistic was used to determine reliability measures (McHugh, 2012).

The validity of the attitude scale, fifteen statements about the use and treatment of animals, was determined through Cronbach’s alpha. The Cronbach’s alpha for the attitude scale was .887 which indicates that it is a highly reliable measure. The outcomes of the test-retest reliability and validity are shown in Table 3.1. The kappa of the socio-demographic variables — with the exception of religion — was high which is indicative of the reliability of the research instrument (Saratankos, 2005).
Table 3.1 Survey instrument validity and reliability

<table>
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<th>Survey question/scale</th>
<th>Overall kappa</th>
<th>Cronbach’s alpha</th>
</tr>
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<tbody>
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<tr>
<td>Religion</td>
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</tbody>
</table>

Participants were asked to indicate their agreement with each statement on a five point scale ranging from strongly agree to strongly disagree. To understand the significance of animal welfare on product selection, participants were asked to rank the five most important attributes for eggs, pork and chicken. Attributes included: Australian origin, brand, concern for environment, price, and free-range. Respondents were also asked to rate their concern for the treatment of farm animals on a five-point Likert scale from ‘not concerned at all’ to ‘very concerned’.

**Subjective norms and perceived behavioural control**

Normative beliefs were assessed using two items:

1. ‘Most people who are important to me think that buying animal-based foods that promote acceptable treatment of animals is something I should do’;
2. ‘Most people make an effort to buy animal-based foods that promote the acceptable use of animals’.
The responses were collected using a Likert scale from *strongly agree* to *strongly disagree*. To assess perceived behavioural control, participants completed the same scale for the question ‘whether or not I consume animal-based foods that are produced using methods that promote acceptable treatment of animals is completely up to me’. Respondents also indicated how easy it is for them to find animal-friendly foods based on labels and their concern for the treatment of farm animals.

*Socio-demographics*

Finally, participants provided demographic information such as age, gender, postcode, experience with pets and livestock, ethnicity, religion, education, and income. These variables were included in the survey so that the relationships between socio-demographics and concern for animal welfare could be investigated.

The complete survey is presented in Appendix A. A summary of the survey instrument questions and their corresponding response formats is presented in Table 3.2. Ethics approval for the survey instrument was attained through the Griffith University Human Research Ethics Committee (ENV/34/11HREC).
<table>
<thead>
<tr>
<th>Variable Category</th>
<th>Variable</th>
<th>Response Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption</td>
<td>Frequency of meat and dairy food products</td>
<td>Categorical</td>
</tr>
<tr>
<td>Behaviour (diet)</td>
<td>Type of diet</td>
<td>Categorical</td>
</tr>
<tr>
<td></td>
<td>If vegetarian or vegan, reasons for doing so</td>
<td>Multiple response</td>
</tr>
<tr>
<td></td>
<td>Label preferences for eggs and meat</td>
<td>Multiple response</td>
</tr>
<tr>
<td>Awareness</td>
<td>Self-rated knowledge of farming</td>
<td>Five point Likert scale — extensive understanding to no understanding</td>
</tr>
<tr>
<td></td>
<td>Statements on animal production</td>
<td>True/False/Uncertain</td>
</tr>
<tr>
<td></td>
<td>Statements on natural behaviours of animals</td>
<td>True/False/Uncertain</td>
</tr>
<tr>
<td></td>
<td>Label understanding</td>
<td>Five point scale — extensive understanding to no understanding</td>
</tr>
<tr>
<td>Attitudes and Preferences</td>
<td>Attitude statements</td>
<td>Five point Likert scale</td>
</tr>
<tr>
<td></td>
<td>Preferences</td>
<td>Ranking of top five attributes for eggs, pork, and chicken</td>
</tr>
<tr>
<td></td>
<td>Concern for animal welfare</td>
<td>Five point scale — very concerned to not concerned at all</td>
</tr>
<tr>
<td></td>
<td>Time spent examining food labels</td>
<td>Four point scale — Considerable time to no time at all</td>
</tr>
<tr>
<td>Subjective norms and perceived behavioural control</td>
<td>Six items on the difficulty in finding high welfare animal-based foods and social environment</td>
<td>Strongly agree — strongly disagree</td>
</tr>
<tr>
<td>Socio-demographics</td>
<td>Pet ownership while growing up</td>
<td>Yes/No</td>
</tr>
<tr>
<td></td>
<td>Experience with pets</td>
<td>Open-ended</td>
</tr>
<tr>
<td></td>
<td>Experience living on a livestock farm</td>
<td>Yes/No</td>
</tr>
<tr>
<td></td>
<td>Experience with livestock animals</td>
<td>Open-ended</td>
</tr>
<tr>
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<td>Age group</td>
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<tr>
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<td>Gender</td>
<td>Male/Female</td>
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<td></td>
<td>Postcode</td>
<td>Open</td>
</tr>
<tr>
<td></td>
<td>Occupation</td>
<td>Open</td>
</tr>
<tr>
<td></td>
<td>Highest level of education</td>
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<tr>
<td></td>
<td>Children under 18</td>
<td>Yes/No</td>
</tr>
<tr>
<td></td>
<td>Ethnicity</td>
<td>Categorical</td>
</tr>
<tr>
<td></td>
<td>Religion</td>
<td>Categorical</td>
</tr>
<tr>
<td></td>
<td>Income</td>
<td>Categorical</td>
</tr>
<tr>
<td></td>
<td>Affiliation with animal protection groups</td>
<td>Yes/No with space for elaboration</td>
</tr>
</tbody>
</table>
3.3.3 Sampling design

The questionnaire was distributed in two ways. The initial mode of distribution was via an online snowball sampling method. By ‘snowball sampling’, I maximised the potential number of responses because I encouraged respondents to forward the questionnaire to friends, colleagues, and family members. Snowball sampling is favoured due to its capacity to yield high response rates, yet the respondents often share certain socio-demographic traits which again has implications for the representativeness of the survey sample (Atkinson & Flint, 2001). Online sampling is relatively cost and time efficient compared to other methods and is therefore desirable when attempting to obtain a large sample (Bethlehem & Biffignandi, 2011).

The online questionnaire was open to any individuals over the age of 16 for two months in early 2012. The questionnaire was advertised to staff and students at two Australian universities: Griffith University and Monash University due to the opportunities for distribution via the university I was enrolled as a PhD candidate and the university where I was undertaking casual work. An invitation to complete the questionnaire was distributed via e-mail lists, as well as through paid advertising through the social networking site Facebook. Participants were invited to forward the questionnaire to acquaintances in their social and professional networks. While such sampling techniques do not provide the researcher with a representative sample of the general population, I was able to gather 837 responses through this method.

A mail questionnaire was established by randomly selecting 300 names from the state of Victoria electoral roll. A 300-person sample size was adequate for achieving a confidence level of 95% (with a 5.66% confidence interval) regarding response quality, given the population of Australia at the time of the research. This sample size was deemed sufficiently representative for the purposes of this dissertation. A random number
generator was used to select a page number and line number of the roll and search the corresponding name on the database. The mail questionnaire was distributed to Victorians because I was living in Melbourne during this stage of data collection. All residents of Victoria enrolled in the electoral roll were eligible to be included in the study; I was therefore confident that their responses would supplement the online responses. The online questionnaire data was exported to the Statistical Package for the Social Sciences (SPSS, Version 22) from the LimeSurvey application and the mail responses were manually entered into Excel and manually imported into SPSS.

3.4 Results

3.4.1 General results

A total of 837 individuals completed the online questionnaire and 67 completed the mail questionnaire. A summary of the socio-demographic attributes of the two samples is shown in Table 3.3 while Figures 3.1 and 3.2 indicate the geographical distribution of the samples. The density of responses is indicated by the colours shown in the figures — with green being least dense and red being most densely sampled.

The responses were more concentrated around Brisbane in the online sample due to the majority of the sampling being advertised through Brisbane networks; however, there were respondents from Western Australia, Tasmania, South Australia, New South Wales, and Victoria. Conversely, the mail questionnaire is concentrated in Victoria because all respondents were recruited from the Victorian electoral roll.

Table 3.3 Socio-demographic characteristics of online and mail questionnaire respondents

<table>
<thead>
<tr>
<th>Gender</th>
<th>Online Count</th>
<th>Online %</th>
<th>Mail Count</th>
<th>Mail %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
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<td>18.9</td>
<td>24</td>
<td>36.4</td>
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81
<table>
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<tr>
<th></th>
<th>Female</th>
<th>Age</th>
<th>19–24</th>
<th>25–34</th>
<th>35–50</th>
<th>50–65</th>
<th>Over 65</th>
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<td></td>
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<td>42</td>
<td>63.6</td>
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<tr>
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<tr>
<td>Did not complete Year 10</td>
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<td>0.4</td>
<td>4</td>
<td>6</td>
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<td></td>
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<td>TAFE or other vocational qualification</td>
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<td>18</td>
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<td>Trade qualification</td>
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<tr>
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<td>$10,000 to $30,000</td>
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<td>14.1</td>
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<td>$50,001 to $70,000</td>
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<td>10</td>
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<tr>
<td>$70,001 to $90,000</td>
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<td>9</td>
<td>15</td>
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<td></td>
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<td>$90,001 to $120,000</td>
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<td>5</td>
<td>8.3</td>
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<td></td>
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<td>Over $150,000</td>
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<td>3.3</td>
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<td>White, Caucasian or European</td>
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<td>56</td>
<td>86.2</td>
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<td>0</td>
<td>0</td>
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<td>9.2</td>
<td></td>
<td></td>
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<td>Polynesian, Pacific Islander, Maori</td>
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<td>0.9</td>
<td>1</td>
<td>1.5</td>
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<td></td>
<td></td>
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<td>2</td>
<td>3.1</td>
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<td>Religion</td>
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<tr>
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<td>21</td>
<td>32.3</td>
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<tr>
<td>Christian</td>
<td>237</td>
<td>31</td>
<td>40</td>
<td>61.5</td>
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<td></td>
</tr>
<tr>
<td>Buddhist</td>
<td>0</td>
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<td>1</td>
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<tr>
<td>Hindu</td>
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<td>Jewish</td>
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<td></td>
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<tr>
<td>Muslim</td>
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<tr>
<td>Sikh</td>
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<td>1</td>
<td>1.5</td>
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</tr>
<tr>
<td>Other</td>
<td>54</td>
<td>7</td>
<td>2</td>
<td>3.1</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Children under 18</th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>169</td>
<td>20.9</td>
<td>14</td>
<td>21.2</td>
</tr>
<tr>
<td>No</td>
<td>641</td>
<td>79.1</td>
<td>52</td>
<td>78.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experience with livestock</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>154</td>
<td>18.8</td>
<td>16</td>
<td>24.2</td>
</tr>
<tr>
<td>No</td>
<td>666</td>
<td>81.2</td>
<td>50</td>
<td>75.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experience with pets</th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>758</td>
<td>92.2</td>
<td>57</td>
<td>86.4</td>
</tr>
<tr>
<td>No</td>
<td>64</td>
<td>7.8</td>
<td>9</td>
<td>13.6</td>
</tr>
</tbody>
</table>
Figure 3.1 Geographic distribution of online questionnaire respondents (n = 837)

Figure 3.2 Geographic distribution of mail questionnaire respondents (n = 57)
As the data was collected from two distinct sampling groups, I performed the Levine’s test using SPSS to check for homogeneity in variance among several key variables. I combined the results for the online and mail questionnaire responses for analyses where the assumption of homogeneity of variance was met. The homogeneity of variance was compared between the mail and online responses for the following variables: attitude score, total knowledge score, knowledge of labelling, self-rated awareness, diet, age, gender, and concern for animal welfare. The Levine’s test determined that homogeneity did not exist in variance between the online and mail questionnaire samples for age, gender, and diet; therefore, any analyses involving these variables were performed separately for the two groups of respondents. With equal variances not assumed, an independent t-test showed a significant difference in the mail and online questionnaire groups for these variables. Age: $t (74.25) = -11.97, p = 0.0$; gender: $t (71.93) = 2.86, p = 0.06$; attitude: $t (77.36) = 2.26, p = 0.27$. It is evident from Table 3.3 that the mail questionnaire sample had a larger proportion of males and older respondents than the online sample.

3.4.2 Behaviour (diet)

Of the 837 online questionnaire respondents, 366 were non-restrictive in the animal-based foods they ate. When combined with the individuals who stated they consume meat but with some restrictions, it meant that 84.5% of the respondents were meat consumers. Forty-six respondents were vegetarian but ate some types of meat (for example, fish), forty-six individuals were vegetarian and did not consume any animal-based products, and forty-four were vegan. Only one person reported being vegetarian from the mail questionnaire sample.

Vegetarians and vegans were asked to provide their reasons for abstaining from meat. The most common response was concern with the way animals are treated (126
responses), followed by animal rights (114), concern for the environment (93), human health (76), and religion/upbringing with less than 10 responses each. The distributions of the reasons are shown in Figure 3.3.

![Figure 3.3 Respondents’ reasons for being vegetarian or vegan (n = 136)](image)

I also asked respondents to indicate how frequently they consume meat and dairy products (Figure 3.4). The majority of respondents stated they consumed meat 4-7 times a week (322 responses) and dairy and eggs 8-14 times per week.
3.4.3 Awareness

3.4.3.1 Self-rated awareness

As the assumption of homogeneity in variance was met for self-rated awareness between the online and mail questionnaire samples, I combined the responses to perform the statistical analyses presented in this section. The average self-rated awareness score for the online questionnaire was 2.92 and the mail questionnaire was 2.71 (with higher numbers indicating a higher level of understanding) (Figure 3.5). Similar results were gathered when respondents were asked to rate their level of understanding of the labels on animal-based foods (Figure 3.6), with only 26.5% of online respondents and 20% of mail respondents indicating an above average level of understanding.

Figure 3.4 Respondents’ frequency of consuming meat (including poultry and seafood) and dairy and eggs (including milk, cheese, yoghurt)
3.4.3.2 Actual awareness

The questionnaires allowed me to collect data on respondents’ self-rated awareness as well as an awareness score which I determined based on the number of correct responses they scored out of 17 questions. The percentage of correct responses for each of the questions is shown in Table 3.4. I was interested in the relationship between self-rated
awareness and actual awareness score and I found this to be significant, with those who claimed to have better awareness scoring higher.

I performed general linear modelling (GLM) to see if there was a correlation between self-rated awareness (an ordinal variable of values between 1 and 5) and actual awareness scores (a score between 0 and 17). I found a significant positive correlation between these two variables (F = 32.411, p = 0.00), meaning the respondents who stated having a higher self-rated awareness scored higher on the welfare questions. This finding suggests that respondents’ perceptions of their awareness are relatively accurate.

Table 3.4 Awareness statements and percentage of agreement

<table>
<thead>
<tr>
<th>Statement</th>
<th>Correct answer</th>
<th>% Correct answers (combined online and mail responses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female pigs are routinely kept in narrow crates throughout their pregnancy</td>
<td>True</td>
<td>46.2%</td>
</tr>
<tr>
<td>Beak trimming in laying hens is permitted without pain relief</td>
<td>True</td>
<td>46.1%</td>
</tr>
<tr>
<td>Labels for animal-based foods (e.g. free range) are defined in legislation</td>
<td>False</td>
<td>27.9%</td>
</tr>
<tr>
<td>Chickens raised for meat are selectively bred to reach slaughter weight at an accelerated rate</td>
<td>True</td>
<td>76.8%</td>
</tr>
<tr>
<td>Hormones are added to chicken feed</td>
<td>False</td>
<td>19.2%</td>
</tr>
<tr>
<td>Producers of eggs must state the production system used (e.g. free range, caged)</td>
<td>False</td>
<td>11.6%</td>
</tr>
<tr>
<td>Chickens raised for meat have approximately one square metre to move around in</td>
<td>False</td>
<td>18.7%</td>
</tr>
</tbody>
</table>
Pigs raised intensively spend the majority of their lives indoors: True 64.8%

Battery cages for hens are legal: True 57.5%

Pigs are tethered to prevent them escaping their enclosure: False 13.3%

Pigs can exhibit fixed repetitive actions if they are denied natural light and surrounding: True 51.3%

Pigs are largely inactive and spend most of their time sleeping: False 63.7%

The bond between mother and piglet is very strong: True 71.8%

Female pigs make a nest for their young using natural materials before giving birth: True 50.1%

Chickens form social groups and communicate through sounds, posture and visual displays: True 72.5%

The natural lifespan of a chicken is 2–3 years: False 28.8%

Chickens spend most of their time foraging for food and scratching at the ground: True 76.1%

3.4.4 Attitudes and preferences

3.4.4.1. Attitudes

Responses from both the online and mail questionnaires indicate that animal welfare is important to consumers. More than half (58%) of respondents claimed to be either quite concerned or extremely concerned about the treatment of farm animals in Australia. The responses to the 15 attitude statements and their percentages of agreement are shown in Figure 3.7 for the online questionnaire respondents and Figure 3.8 for the mail
questionnaire respondents. As indicated in the previous section, the two samples were significantly different regarding their attitudes towards animals. The mail questionnaire respondents represented more moderate views on the use of animals for food production. However, the majority of respondents from both questionnaires agree that it is acceptable to use animals for food (online = 64.2%; mail = 77.6%). Respondents from both questionnaires are opposed to production at the expense of animal welfare. This is evident from the majority (online = 84.5%; mail = 77.6%) who indicated agreement with the statement ‘It is cruel to keep birds in cages to mass produce eggs’. The majority of respondents for both questionnaires also stated that they would be willing to pay more for higher welfare products (online = 73.5%; mail = 74.7%). Of the mail respondents, 50.7% felt that the regulations around humane killing and abattoirs are not strict enough in Australia while 62.9% of online respondents felt the same way.

3.4.4.2 Preferences

Respondents who did not identify as vegetarian or vegan were presented with three lists of product attributes and asked to rank them from one to five in terms of importance. The three lists were for eggs, pork, and chicken. The percentages of respondents who ranked each attribute within their top three preferences for eggs, pork, and chicken are included in Figures 3.9-3.14. Free range, humane treatment of animals, price, and Australian in origin were product attributes that were all ranked among the top three product attributes for eggs, pork, and chicken. For eggs the most highly preferred product attribute was free range followed by the humane treatment of animals then price, in the online questionnaire. For the mail questionnaire, the second most important first ranked attribute was being Australian in origin then humane treatment of animals. Online respondents rated the humane treatment of animals as the most important product attribute for pork products followed by price and Australian in origin. Among the mail respondents, the most important attribute was Australian in origin followed by free range and humane treatment.
of animals. For chicken, free range was again the leader for online respondents and mail
respondents but it is important to note that the absence of hormones/antibiotics was
important for mail and online respondents when considering their preferences for eggs,
pork, and chicken. Health and safety are obviously key concerns for consumers when
purchasing animal-based foods.
Humans have a right to use animals as food

It is acceptable to use animals for human profit

It is OK to use animals to test products such as cosmetics and household cleaners

Intensive factory farming is not necessary in today’s world

The regulations around humane killing and abattoirs are not strict enough in Australia

I would be willing to pay more for “animal welfare” friendly products (e.g. eggs, meat)

Live transport of animals over great distances should be banned

Live transport of animals overseas is an acceptable source of income

Hunting is an extension of natural processes and is therefore acceptable

It is cruel to keep birds in cages to mass produce eggs

Hunting for financial profit is morally wrong and should be stopped

Modern methods of “factory farming” to produce eggs, milk and meat are cruel

It is acceptable to use native Australian animals such as Wallaby and Kangaroo as food

The meat production and processing industries can be trusted to ensure the safety of the meat product

Animals should have the same moral rights as human beings

Figure 3.7 Attitude item responses from online questionnaire
Figure 3.8 Attitude item responses from mail questionnaire
Figure 3.9 Attributes and rankings for eggs — online questionnaire

Figure 3.10 Attributes and rankings for eggs — mail questionnaire
Figure 3.11 Attributes and rankings for pork — online questionnaire

Figure 3.12 Attributes and rankings for pork — mail questionnaire
Figure 3.13 Attributes and rankings for chicken — online questionnaire

Figure 3.14 Attributes and rankings for chicken — mail questionnaire
3.4.5 Subjective norms and behavioural control

Overall, respondents expressed concern for the animal welfare outcomes of farming and had strong preferences for purchasing higher welfare foods and having information available about farming. However, respondents also indicated that, despite the majority spending at least ‘some time’ (66.7% for online questionnaire and 70.1% for mail questionnaire) examining the labels of animal-based foods when grocery shopping, 49.2% of the mail respondents and 58.1% of the online questionnaire respondents stated that it is somewhat or extremely difficult to identify higher welfare products. This falls under the behavioural control category of the theory of planned behaviour, in that challenges in identifying higher welfare foods make it difficult for consumers to act upon their concerns. Despite a majority consensus that identifying higher welfare products is difficult (66.4%), more than half of the online respondents agreed it is completely up to them whether or not they purchase higher welfare products. The summaries of the perceived behavioural control and social environment questions are included in Figures 3.15-3.20.

![Graph showing respondents' importance of purchasing high welfare products](image-url)

*Figure 3.15 Respondents’ importance of purchasing high welfare products*
Figure 3.16 Respondents' perceived importance on having access to farming information

Figure 3.17 Respondents' ease in identifying higher welfare products
Figure 3.18 Respondents’ social pressure to purchase high welfare products

Most people who are important to me think that buying animal-based foods that promote the acceptable treatment of animals is something I should do

- **Strongly Agree**
- **Agree**
- **Neutral**
- **Disagree**
- **Strongly disagree**

<table>
<thead>
<tr>
<th></th>
<th>Online Survey</th>
<th>Mail Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>Agree</td>
<td>30%</td>
<td>25%</td>
</tr>
<tr>
<td>Neutral</td>
<td>40%</td>
<td>35%</td>
</tr>
<tr>
<td>Disagree</td>
<td>15%</td>
<td>10%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>5%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Figure 3.19 Respondents’ perceived behavioural control

Whether or not I consume animal-based foods that are produced using methods that promote the acceptable treatment of animals is completely up to me

- **Strongly Agree**
- **Agree**
- **Neutral**
- **Disagree**
- **Strongly disagree**

<table>
<thead>
<tr>
<th></th>
<th>Online Survey</th>
<th>Mail Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>20%</td>
<td>15%</td>
</tr>
<tr>
<td>Agree</td>
<td>40%</td>
<td>35%</td>
</tr>
<tr>
<td>Neutral</td>
<td>25%</td>
<td>20%</td>
</tr>
<tr>
<td>Disagree</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>5%</td>
<td>0%</td>
</tr>
</tbody>
</table>
3.5.1 Relationships between variables

As explained in the introduction to this chapter, this study was designed to investigate the current status of consumers in relation to their consumption of animal based foods and their awareness of, and attitudes to animal production practices. Based on the relevant literature and theoretical frameworks, I investigated the relationships between the independent variables (awareness score, attitude score, perceived behavioural control, social environment, and socio-demographics) and a) diet (meat-eater, vegetarian, vegan) and b) concern for animal welfare (as measured on a Likert scale).

3.5.1.1 Attitude and awareness score

After determining a normal distribution for awareness scores, I performed a simple linear regression to predict attitudes based on awareness score. A significant regression equation was found (F(1,878) = 44.846, p<.000), with an $R^2$ of 0.049. This demonstrates a positive correlation between awareness score and attitude toward the treatment of animals, with respondents having a greater awareness also having more positive attitudes towards the treatment of production animals. ANOVA revealed a significant difference in the attitude
scores between concern categories ($F = 176.298, df = 4, p < 0.05$). A post hoc Tukey test revealed significant differences in the mean attitude scores between all levels of concern except neutral and slight concern ($p = 0.288$). This result implies that respondents’ concern for animal welfare is related to their attitude.

**Table 3. 5 Mean attitudes as related to levels of concern**

<table>
<thead>
<tr>
<th>Concern</th>
<th>Attitude Score (maximum score of 75)</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely concerned</td>
<td>63.838 ± 6.96</td>
<td>191</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quite concerned</td>
<td>53.694 ± 7.98</td>
<td>291</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td>44.956 ± 9.42</td>
<td>137</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slightly concerned</td>
<td>46.735 ± 7.83</td>
<td>181</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not concerned at all</td>
<td>36.24 ± 9.18</td>
<td>25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As well as the relationship between attitudes and awareness, I investigated whether correlations existed between the concern for farm animal welfare and categorical variables such as diet and socio-demographic variables. Chi-square analyses were used to determine if there were relationships between concern for animal welfare and socio-demographic variables. For those that were significant, I performed a Tukey post-hoc test to determine where significant differences were present between groups of socio-demographic variables relating to concern for animal welfare.

Age and concern for animal welfare were tested using Chi-square, which revealed a significant relationship $X^2 (16, N = 812) = 29.974, p = 0.018$. General linear modelling in
addition to a Tukey post hoc test indicated a significant difference in mean attitude scores between ages 19–24 and 35–50 (p = 0.043) and 19–24 and 50–65 (p = 0.007). The relationship between respondents’ experience with livestock and a) their concern for animal welfare and b) their awareness of animal welfare was investigated. Experience with livestock was not significantly related to concern for animal welfare ($X^2 (4, N = 812) = 4.136, P = .388$). An independent samples t-test was performed to compare awareness of farming in individuals who had livestock experience and individuals without livestock experience. There was a significant difference in the scores for those with experience ($M = 9.49$, $SD = 3.493$) and no experience ($M = 8.02$, $SD = 3.456$); $t(797) = 4.728, p = 0.000$. This means that those with experience had better awareness of animal welfare.

An independent samples t-test was also conducted to compare the attitude scores of individuals with livestock experience against those without livestock experience. There was a significant difference in attitude scores between those with livestock experience ($M = 50.3506; SD = 12.44256$) and without livestock experience ($M = 52.9384; SD = 10.53576$) = -2.651, $p = 0.018$. This means that people without livestock experience had better attitudes towards the treatment of farm animals.

Chi square indicated no significant relationship between:

- concern and highest level of education and $X^2 (12, N = 807) = 17.392, P = .135$;
- concern and gender $X^2 (4, N = 817) = 8.010, P = .091$; and
- ethnicity also $X^2 (28, N = 825) = 40.083, P = .065$.

Children under the age of 18 was related, with those not having children under 18 reporting higher concern for animal welfare than those with children under 18 $X^2 (8, N = 825) = 18.169, P = .020$. Concern was statistically related with Religion $X^2 (20, N = 728) = 47.309, P = .001$. General Linear Modelling (GLM) and a Tukey post-hoc test showed
the largest difference was between people who selected the option ‘no religion’ and those who selected ‘Christian’ (mean difference of -.3769; p = 0.001).

ANOVA revealed a significant difference in the awareness scores between behaviour (diet) categories (F = 42.035, df = 2, p = <0.05). A post hoc Tukey test revealed significant differences in the mean attitude scores between all levels of concern (p<0.05). Between vegetarians and vegans, however, the significance level was 0.013, indicating only a slight significance between the awareness scores of these two categories. These results demonstrate that vegetarians and vegans obtained higher awareness scores than meat-eaters.

Table 3.6 Mean awareness scores as related to diet

<table>
<thead>
<tr>
<th>Behaviour (diet)</th>
<th>Awareness score (maximum score of 75)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td>Meat-eater</td>
<td>7.87</td>
</tr>
<tr>
<td>Vegetarian</td>
<td>10.12</td>
</tr>
<tr>
<td>Vegan</td>
<td>12.02</td>
</tr>
</tbody>
</table>

3.6 Discussion

The results gathered from the empirical data collection presented in this chapter allowed me to gain insight into the current level of awareness that Australian consumers have of animal production and farm animal welfare, and investigate the relevance of consumer awareness in relation to preferences and attitudes surrounding animal-based foods.

Responses from the 894 individuals who completed the online and mail questionnaires indicate that animal welfare is perceived by Australians as an important issue and information about animal production will be a priority for consumers in the future. This
finding is consistent with other attitudinal investigations into the ethical dimension of food choices. As set out in the introduction, the aim of the study presented in this chapter was to answer research questions on the awareness consumers have of farming, their attitudes towards the treatment of farm animals, and the relationships between variables relevant to food choices. The results of this study advance my thesis by highlighting the need for accurate information on animal welfare and demonstrating that, despite positive attitudes towards the treatment of farm animals, changes are needed to labelling, transparency, and the availability of information in order for consumers to recover their connection to farming. Consumer concerns regarding animal welfare highlight the potential for producers and suppliers of higher welfare animal products to communicate with consumers and bridge the gaps in awareness about animal welfare and farming.

It is unsurprising that awareness of farming and animal welfare was not high among respondents. The general population is less likely to have personal experience than in previous generations and are therefore less likely to understand how food is produced (Grandin, 2014). Worsley and colleagues (2015) surveyed 1026 Australians to determine their knowledge of, and attitudes towards, agriculture. The authors determined that the respondents had inadequate knowledge of the Australian agriculture industry and highlighted the need for educational programs to be included in school curriculums and offered as a part of tertiary education.

Numerous studies have shown consumers’ desire for information about animal welfare and labelling of high welfare products. This has been demonstrated through surveys and experimental studies; including those by Frewer et al. (2005), Vanhonacker and Verbeke, (2009), Hoogland et al., (2005) and Zander and Hamm, (2010). Kriflik and Yeatman’s (2005) qualitative study of consumer perceptions found conflicting information about food production was a source of concern. Numerous theories on consumer behaviour,
including the theory of planned behaviour, suggests a link between awareness of animal welfare issues and behaviour that supports higher welfare options. Toma et al. (2011) found access to information to impact attitudes, which are in turn positively related to behaviour. Studies have also demonstrated a link between information provisioning regarding animal welfare and willingness to pay for higher welfare products (Lagerkvist & Hess, 2011; Toma et al., 2012). McEachern et al. (2007) examined access to information on animal welfare issues framed within the context of the theory of planned behaviour. They found that awareness of animal welfare issues and the rationale behind the RSPCA’s ‘Freedom Food’ brand extension proved to be a precursor to their attitudes and therefore their propensity to consider animal welfare as a desired product attribute.

Despite the increase in concern for animal welfare alongside a willingness to pay more for high welfare products, many consumers lack awareness of important information on animal welfare, standards, and labelling. Vecchio and Annunziata (2012) found Italian consumers to express concern for layer hen welfare yet remained unaware of the mandatory labelling system for eggs. Studies have shown consumers regard animal welfare as being important yet generally have low levels of awareness of farming methods, animal welfare implications of farming and welfare standards. Furthermore, consumers are faced with a confusing myriad of animal welfare and quality labels when selecting animal foods (Miele & Evans, 2010; Parker et al., 2013). The results from this study demonstrated inferior levels of awareness and confidence in choosing higher welfare products. This emphasises the need for welfare information to be easily accessible to consumers so they understand how production systems differ by welfare measures.

Consumers often do not know where to access credible information about how meat, eggs, dairy, and cheese are produced. When messages of negative animal welfare are communicated to consumers, there is limited understanding of alternative purchases that
can be selected in the best interest of farm animals. Consumers express the desire to know more about where their food comes from (Smith & Brower, 2012). As Vanhonacker and Verbeke (2014) state, the provision of appropriate information can enable consumers to become more active in their reasoning about product purchases and thus increases the time and involvement invested when making product choices.

Alongside credible information about animal welfare through labels, consumers are likely to show more consideration for animal welfare after a visit to a farm (European Commission, 2005). A greater involvement in the issue resulting from such on-hand experience is likely to translate into the purchase of high welfare foods; this reinforces the need for consumers to gain awareness of farming through a number of channels. The 2007 Eurobarometer survey found that 27% of respondents claimed to know ‘nothing at all’ about animal farming in their country; yet 58% expressed the desire for more information on farming. This fits with results from focus groups conducted by Miele and Evans (2010) where people regard animal welfare as being important and they require more information to understand how their behaviour and purchasing choices can reflect this concern.

It is important that consumers have access to animal welfare information and label meanings not just from the perspective of encouraging the purchase of higher welfare products to aid informed decision-making. Giving consumers access to information about food production also forms part of the wider political democracy of the food production industry (Kjærnes, 2012; Parker, 2013).

Greater levels of awareness about farm animal welfare lead to flow-on effects whereby there is increased pressure on legislators to improve animal welfare standards (Miele et al., 2013). Societal pressure and consumer concern have also caused a number of global corporations to implement welfare assurance schemes within their supply chains and
transparency within the market. Although existing research indicates a lack of awareness of animal welfare issues, corporate accountability of animal welfare is enabling communication about animal welfare to advance. Food businesses on all scales have made vast improvements to social responsibility policy in recent years. These policies seek to increase connectivity and benefits on a number of dimensions including social, environmental, and economic. Animal welfare has emerged as a key area in which food business has shown collective interest in investments in improvements to the standards they set for their supply chains. This is in part due to an overall increase in consumer awareness of farming practices, which runs concomitantly with a growing preference for foods produced under high welfare standards. According to a survey conducted by ORC International in 2014, roughly two-thirds (69%) of surveyed American adults said they prioritize animal welfare as a significant factor in food purchasing decisions (Cone Communications, 2014).

Trust in farmers, producers, and policy-makers is important for consumers when making purchasing choices, particularly when the opportunity for communicating information is limited to product labels in the absence of firsthand experience. Some research indicates a growing distrust among consumers towards the credibility of ethical labelling schemes of animal products (Frewer et al., 2005).

In this study, 57 percent of participants disagreed with the statement ‘the meat production and processing industries can be trusted to ensure the safety of the meat product’. This is higher than the 31 percent of respondents who disagreed with the same statement in Franklin’s (2007) investigation into a representation of 2000 Australians. Attitudes towards farmers have been reported as positive in other studies; Worsley and colleagues (2015, p. 405) found the majority of respondents (between 71%–77%) in their 1026 sample size study agreed that Australian farmers are good at performing their role of a)
contributors to Australian society (77%), b) carers of livestock (75%) and c) being educated about agriculture (71%). This could be due to varying attitudes about farmers as opposed to an entire industry. The discrepancy could signify a deeper level of distrust with corporate and government agendas that conflict with public expectations.

Although safety of food products was not a primary concern of my research, the lack of trust reported could extend to a lack of trust in ensuring animal-based foods are produced according to acceptable welfare measures. However, the results from the awareness section of the questionnaires show that consumers trust in the legislative dimension of food labelling and production. For example, only 27.9% of respondents were correct in stating that labels for animal-based food (e.g., free range) are defined in legislation. An even smaller proportion of respondents were correct in their belief that the production system of eggs must be stated on the label. A somewhat problematic observation was that from the awareness measures it is evident that consumers have trust in the labelling standards and legislation to define what systems are used, yet they claim to experience considerable difficulty identifying higher welfare products, and their understanding of label meanings is limited.

Trust is a recurring theme in research on animal production and animal welfare. A study by Nocella et al. (2010) demonstrated an increase in consumer willingness to pay for improved animal welfare once trust in stakeholders within the supply chain was established. An important finding of this study, and others of a similar nature, is that trust is essential for consumers’ motivation to purchase higher welfare products. As well as animal welfare considerations, consumers desire access to accurate information on other attributes pertaining to food choices, including genetic modification, chemical usage and sustainability (Hoogland et al., 2005).
The relationship between attitudes and awareness

An interesting finding resulting from the research presented in this chapter was the presence of a correlation between attitudes towards animals and awareness of animal welfare. The relationship is complicated by the fact that experience with livestock was positively correlated with awareness of farming but not with attitudes towards farming. Overall, however, positive correlation existed between awareness and attitudes. Jokinen et al. (2012) examined the trust of Finnish consumers in animal farming practices. The authors address the diminishing emotional connection between consumers and food production and emphasise the presence of habitual trust in policy-makers and legislation to ensure the welfare of farm animals is accounted for. As in Finland, Australians are further removed from farming than in previous generations, so trust in the food production industry must be generated and maintained through cultural beliefs rather than through personal experience.

The transparency of the food system is related to trust, and the emergence of alternative food networks and certification schemes is a way for consumers to regenerate their understanding of food production and alleviate concerns regarding the treatment of livestock animals. It also affords an opportunity for consumers to reconnect with producers through a shared understanding of what constitutes ethical production conditions. While the insights gathered from the awareness section of the questionnaire data show that consumers trust product labels to communicate necessary information, the fact that less than a quarter of respondents claimed it is somewhat or extremely easy to identify animal-based foods that promote the acceptable treatment of animals, and approximately three-quarters having an average or less than average level of
understanding of label meanings, suggests consumers are confused about what information contained on food labels actually means from an animal welfare perspective.

The beliefs consumers have about what others purchase can impact on their motivations and actions. A noteworthy discovery from the questionnaires was the respondents’ beliefs about social norms, with only 15.4% of the online respondents and 32.9% of the mail respondents agreeing that other people make an effort to buy higher welfare products. Behaviour-change campaigns based on the influence of social norms have been shown in some capacities to be very effective (Allcott & Mullainathan, 2010). Schultz and colleagues (2007) found electricity consumption reduced when people were led to believe their behaviour was more wasteful than that of their neighbours as a result of social normative messages. With the use of social media higher than ever, it is also easier for consumers to be exposed to the normative beliefs among their peers. Allcott and Mullainathan (2010) examined the role of social norms in encouraging pro-environmental behaviours. Campaigns using social norms as a lever for behaviour change have been used to encourage a range of pro-environmental behaviours, particularly regarding behaviours to mitigate climate change (Allcott & Mullainathan, 2010; Goldstein et al., 2008). Only a small proportion of respondents in this study believe farm animal welfare is an important issue for others. Future research could extend the capacity of normative behaviours to invigorate demand for higher welfare products among consumers.

The study outlined in this chapter revealed a correlation between scores for awareness of animal welfare and diet, in that higher levels of farming awareness are positively correlated with decreased consumption of animal-based foods. This result may be indicative of a diminishing level of acceptability of intensive farming, with those who become aware of the welfare problems associated with farming choosing to seek
alternatives to animal products. It is also possible that individuals who elect to adopt a vegetarian or vegan lifestyle for other reasons are then made more aware of the realities of the animal production industry. It is in the best interests of the stakeholders relevant to animal production to remain aware of consumer attitudes, preferences and concerns; and communicate effectively to consumers through available outlets. Such modes of communication may be through brand extension, accreditation, labelling, and marketing activities. Such communication would also enable them to remain competitive in the market. The findings reinforce the need for stakeholders in the animal production industry to respond to consumer concerns relating to animal welfare. Transparency in food production is vital in order to improve the public’s trust in food production. The stakeholder perspectives and the implications of consumer awareness on different stakeholder groups is explored in Chapter Five of this dissertation where I analyse interviews conducted with representatives from key stakeholder groups.

Transparency is an important concept for understanding the demand and consumption of higher welfare foods. Ideally, consumers would have access to information about food production and therefore be empowered to make choices based on matching their values with the values represented by competing companies and producers (Hoogland et al., 2005). Transparency in the animal production industry is required in order for consumers to make informed decisions and to weigh up the benefits of the options available (Vanhonacker et al., 2010). It is important, however, to recognise that stated concern for animal welfare does not directly translate to increases in higher welfare purchases. The gap between intention and behaviour is well documented, particularly in ethical consumption research (Bray et al., 2011).

Self-administered questionnaires, such as the one discussed in this study, are beneficial in their convenience and ability to gather responses from a large sample size. However,
as other research has pointed out, some respondents may feel compelled to answer questions of this nature in a way that they perceive as socially desirable (Freestone & McGoldrick, 2008). The tendency for participants to report behaviours they perceive as being ethical emphasises the need for studies that measure actual behaviour rather than reported behaviour or intention. Toma et al. (2010) cite two possible reasons for the gap between intention and actual behaviour: lack of information on animal welfare and perception of labelling. This explanation is consistent with the findings from this study, as those participants with more accurate awareness of farming, were more likely to consume limited animal-based foods. Qualitative consumer studies suggest consumers may perceive farming as a polarised issue in which ‘factory farms’, where welfare is very much compromised, are at one end of the spectrum and high welfare farms at the other end. Organic and free range are terms often associated with the high welfare end (Verbeke, 2009). Despite this conceptualisation of welfare, most consumers lack the technical understanding of animal production (Miele et al., 2013).

Both the online and mail sampling methods indicated that consumers are concerned about the treatment of farm animals in Australia. This finding is consistent with other research that shows an increase over time in consumers having an awareness of the existence of animal welfare issues related to modern farming methods (Jokinen et al., 2012; Vecchio & Annunziata, 2012). The Humane Research Council’s (2014) report on animal protection issues and advocacy, for example, described high levels of concern about farming standards due to the animal welfare implications of intensive systems; a consensus of ‘high level of concern’ among consumers has been met across the literature (Martelli, 2009; Toma et al., 2012). In a survey conducted by Texas A&M University, 36% of consumers said that animal welfare was somewhat important to them, while another 22% said it was very important, and 11% said extremely important (for a total of 69% (Grimshaw et al., 2014).
3.7 Conclusion

The findings discussed in this section have allowed several key inferences to be made relevant to the stakeholders involved in livestock production in Australia and abroad. Similar to other research findings, the majority of respondents reported at least some concern about welfare conditions for livestock. This finding highlights the importance of information in the decision-making process and the need for transparency in the food production industry. The correlation between awareness and decreased consumption of animal products suggests consumer concern for the ethics of intensive farming. However, the relationship between awareness of farming and experience with livestock indicates the importance of other social and cultural factors in influencing concern and consumer choices.

The findings also indicate a number of possibilities for future research. This study invited participants to express their concern for animal welfare and their intention to buy animal welfare-friendly food items. It did not set out to investigate actual consumer behaviours. A measure of actual purchases would further the goals of the research field and provide researchers and marketers with a better understanding of decision-making processes. A research methodology allowing for observation of behaviours under the influence of information administration could be beneficial in understanding the mitigating impact of attitudes and competing product attributes on purchase decisions. Moreover, analysis of the personality, cultural, and situational factors that impede animal welfare-friendly behaviours is an important area of research that requires further attention. A future study could utilise probability sampling to obtain data from a cross-section of people. This would allow greater insight into the factors that enhance concern for animal welfare and the modification of consumption choices that align with such concerns.
The findings of this chapter highlight the need for accessible, accurate information available to consumers through product labelling and increased transparency within Australia’s farming system. The European Commission research into consumer perceptions demonstrated that the majority of consumers face considerable difficulty in identifying higher welfare products (European Commission, 2005). The results suggest there is still much to be done in the field of ethical consumerism research, and the role of information is likely to form a focus of such research. The snowball sampling method was effective in gathering a range of responses. However, because it is a non-probability based survey method, the results discussed in this chapter are only representative of the participants of this study.

While intensive farming systems have the capacity to provide large quantities of animal-based foods to our growing population, the negative impacts on farm animal welfare are a concern to Australian consumers. Consumer demand for alternative, more ethically sourced foods is a step in the right direction. There is growing discomfort about the treatment of livestock, and confusion about labelling makes it difficult for consumers to make an informed choice. Consumers require accurate information and, if possible, experience or exposure to farming. There is a large scope for continued research in this area.

Consumers are becoming increasingly concerned about animal welfare and this concern is demonstrating the potential to directly translate into demand for high welfare foods. Although producers and retailers are using quality assurance schemes to create high welfare products, these items only form a relatively small proportion of the market. To increase the demand for high welfare meat, eggs, and dairy, it is important that consumers are given access to accurate information on animal welfare issues. Animal farming
systems, legislation on farming standards and product labels are all areas in which consumer knowledge needs improvement.

Animal welfare is perceived as a public good by many consumers. It is therefore important to consumers, that the responsibility for ensuring animal welfare standards are at a socially acceptable level, is shared among public authorities, producers, and retailers. The role of information about animal welfare is crucial in making informed decisions. This is achieved through modelling the food supply system on a platform of transparency and product labels contain independently assessed welfare information. Existing claims on animal products currently lack commensurability which adds to the confusion of consumers and highlights the importance of efficient monitoring for credibility on animal welfare claims.

The results presented in this chapter provided answers to three of my overall research questions as set out in the introduction of the dissertation. Following the completion of the research discussed in this chapter, I designed a quasi-experiment to assess the impact of information on key variables pertaining to attitudes, awareness and behaviour. The results of the experiment are discussed in the following chapter.
CHAPTER FOUR
THE IMPACT OF INFORMATION ON CONSUMER ATTITUDES AND AWARENESS

4.1 Introduction

In the previous chapter, I presented the results of a study that used an online and mail questionnaire to address several of this dissertation’s research questions. Through the questionnaires, I was able to identify a broad scope of attitudes, opinions and levels of awareness that comprise Australian consumers’ relationship with production animals. I found that many consumers are concerned about the animal welfare implications of intensive farming and object to farming practices that are detrimental to the well-being of farm animals. I also found that consumers experience a considerable degree of confusion around label meanings when purchasing animal-based foods and find it difficult to identify foods that are produced using animal welfare-friendly production methods. (Batson, 1990)

The results discussed in the previous chapter indicate there are opportunities for consumers to become better connected to animal production and establish a more informed understanding of the ways in which food is produced. Based on the findings drawn in the previous chapter, I wanted to further explore the role of information in influencing consumers’ attitudes and preferences for animal-based foods. Relatively few studies have examined the level of awareness consumers have of modern farming methods and farm animal welfare (Clark et al., 2016; Cornish et al., 2016; Worsley et al., 2015). To date, minimal research effort has investigated whether information pertaining to the animal welfare, human health, and environmental impacts of farming can affect consumers’ beliefs, attitudes, and behaviours pertaining to the purchase of animal-based foods.
As farming has become more intensive and mechanised, consumers are less likely to understand farming based on direct experience or even have friends, family, or other contacts who are involved in the farming industry. However, there are many ways in which information can be communicated to consumers and the study discussed in this chapter fulfilled an opportunity to understand how consumers conceptualise and respond to information about the impacts of modern farming and the consumption of animal products. Knowledge gained in this area can also help food companies improve communication with consumers about animal welfare. Special interest groups, such as animal welfare and environmental charities, can also benefit immensely from understanding how their campaigns are perceived and acted upon by different types of consumers.

Consumers increasingly rely on credence characteristics, such as healthiness, and processing history, such as environmental impacts and animal welfare considerations, to inform their perceptions of quality and influence product expectations (Napolitano et al., 2010). Product evaluations can be augmented based on information about the ethical validity of such products and promote positive appraisals based on sensory attributes (Carlucci et al., 2009). There is an opportunity for consumers to recognise animal welfare as an indicator of product quality, and many food companies are already taking advantage of the link between high welfare foods and quality indicators such as taste and healthiness (Broom, 2010; Harper & Makatouni, 2002; Mikuš & Petak, 2010).

The general public are implored to consider the origins of their food through ongoing exposure to information and appeals by interest groups. Animal-based foods sourced through intensive animal farming are irrefutably the fastest growing for feeding the world’s growing population (FAO, 2009, 2017; Nierenberg, 2003). The marketing of animal-based foods, coupled with the social norms underpinning the maintenance of an
omnivorous diet, is in juxtaposition with contemporary reminders to eat less, but better. How consumers conceptualise information about the negative impacts of intensive farming, and whether there is a difference in the attitudes and beliefs resulting from a heightened awareness on different aspects of food production, is therefore worthy of enquiry. As consumers, individuals are swayed by their values for intrinsic product attributes such as price and taste as well as extrinsic factors and, without relevant knowledge, there can be minimal drivers for change. To best develop an effective strategy for implementing better standards of animal welfare within the supply chain, it is important to research the ways consumers respond to the various arguments surrounding food production and whether information provision can be harnessed, or approached in a different way to encourage positive behaviour change.

In this chapter, I present the results of a quasi-experimental study I conducted over a nine-month period. The purpose of the study was to assess whether a change could be observed in participants over time in terms of attitudes, behaviour, awareness and other variables. The research framework allowed me to explore the ways consumers react to information pertaining to animal production in terms of its potential impacts on animal welfare, the environment and human health. These issues are of interest due to their pervasiveness within the ongoing dialogue around food production in the developed world. In developing this study, I hypothesised that consumers would be motivated to adapt their attitudes and, possibly behaviours, once exposed to information.

Based on a review of the literature and previous studies in this area, I established that little research has attempted to examine changes in consumer attitudes to, and awareness of, animal welfare. Several studies have examined willingness to pay as the primary dependent variable in studies that examine the purchasing of higher welfare products (Carlsson et al., 2007; Clark et al., 2016; Taylor & Signal, 2009). However, the measure
of willingness to pay does not account for the behaviour the consumer commits to and delivers upon. Researchers have therefore sought more accurate methods of tracking consumer purchases particularly in response to information on social, environmental, and welfare impacts of various food choices. Whether consumers elect to purchase higher welfare animal-based foods is dependent on a range of factors that I discussed in the previous chapter including attitudes, awareness, experience, beliefs, socio-demographics and social variables.

4.2 Chapter aims

The study discussed in this chapter aims to investigate whether a causal relationship exists between the provision of information and salient variables relating to purchasing choices. The results are presented of a quasi-experimental study that I conducted to address two of the research questions posed in the introduction of this dissertation. These are:

1. What effect does the provision of information have on consumers’ awareness, attitudes and concern for the impacts of animal production relating to a) animal welfare, b) environment and c) health?

2. How do consumers perceive information about animal production in terms of their opinions and emotional reactions?

By gathering data from a range of consumers about their behaviours, attitudes, and awareness of farming both before and after their exposure to information about animal production, I could determine whether information about farming and animal welfare had an impact on the awareness and attitudes of consumers. Addressing the above research questions can identify ways to communicate with consumers about animal welfare and identify values based on specific concerns relating to animal production. The study reported in this chapter helps to satisfy the fundamental research aim of the dissertation.
by collecting empirical data on the relationship between information and consumer perspectives concerning animal production and animal welfare.

4.3 MATERIALS AND METHODS

4.3.1 Quasi-experimental study

As stated in the introduction chapter, attitudinal research often examines the most important variables in predicting behaviour as indicated by behavioural intention (Napolitano et al., 2010; Taylor & Signal, 2009; Toma et al., 2012). In this chapter, I report the results of a quasi-experiment pre-test-post-test design that was developed to examine what impact, if any, information can have on consumer awareness and attitudes. The advantage of developing the study to take measurements over time is that temporal changes could be investigated as well as whether certain factors influence change in the variables of interest (Bryman, 2012).

4.3.2 Recruitment and sampling

An online panel provider was selected as the mode of recruitment. A panel consists of a group of individuals who consent to providing opinions and feedback on a particular issue, usually in exchange for an incentive. Panel providers have become a popular option for market research because they are faster, more convenient and cheaper than face-to-face and telephone interviews (Bethlehem & Cobben, 2013). Many individuals who take part in panel research do so because completing questionnaires online is highly accessible (assuming an internet connection is in place) and requires no travel or time invested into phone calls. Respondents can complete the questionnaire requirements at a time suitable for them, without being inconvenienced by other people. A challenge in implementing online panels is obtaining a representative sample. Panels can be screened to ensure that the proportions of different variables within the sample are represented in line with a desirable distribution.
The online panel provider Toluna (www.toluna-group.com) was used to recruit 340 participants between 18 and 64 years of age. Toluna was selected as the panel provider due to it setting soft quotas in order to ensure the data is as representative as possible of the general population for key variables. The key variables in this study were gender, age group and state of residence within Australia. The target counts and percentages of the overall target sample size of 300 are listed in Table 4.1. The target sample size for completed questionnaires throughout the study was 100; therefore, approximately 300 people were recruited. This was based on advice from the panel provider regarding predicted participant retention.

*Table 4.1 Target samples for recruitment*

<table>
<thead>
<tr>
<th>Target Sample</th>
<th>Count</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>300</td>
<td>100%</td>
</tr>
<tr>
<td>Female</td>
<td>150</td>
<td>50%</td>
</tr>
<tr>
<td>Male</td>
<td>150</td>
<td>50%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18–24</td>
<td>45</td>
<td>15%</td>
</tr>
<tr>
<td>25–34</td>
<td>67</td>
<td>22%</td>
</tr>
<tr>
<td>35–44</td>
<td>68</td>
<td>23%</td>
</tr>
<tr>
<td>45–54</td>
<td>64</td>
<td>21%</td>
</tr>
<tr>
<td>55–64</td>
<td>56</td>
<td>19%</td>
</tr>
<tr>
<td>State</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT</td>
<td>5</td>
<td>2%</td>
</tr>
<tr>
<td>NSW Metro</td>
<td>52</td>
<td>17%</td>
</tr>
<tr>
<td>NSW Rural</td>
<td>38</td>
<td>13%</td>
</tr>
<tr>
<td>NT</td>
<td>2</td>
<td>1%</td>
</tr>
<tr>
<td>----------</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>QLD Metro</td>
<td>25</td>
<td>8%</td>
</tr>
<tr>
<td>QLD Rural</td>
<td>45</td>
<td>15%</td>
</tr>
<tr>
<td>SA Metro</td>
<td>17</td>
<td>6%</td>
</tr>
<tr>
<td>SA Rural</td>
<td>6</td>
<td>2%</td>
</tr>
<tr>
<td>TAS</td>
<td>8</td>
<td>3%</td>
</tr>
<tr>
<td>VIC Metro</td>
<td>51</td>
<td>17%</td>
</tr>
<tr>
<td>VIC Rural</td>
<td>22</td>
<td>7%</td>
</tr>
<tr>
<td>WA Metro</td>
<td>21</td>
<td>7%</td>
</tr>
<tr>
<td>WA Rural</td>
<td>8</td>
<td>3%</td>
</tr>
</tbody>
</table>

A total of 340 individuals aged between 18 and 64 completed the first questionnaire. Seventy-three of these respondents participated in the entire study by their completion of all stages of the survey including the final questionnaire — giving a retention rate of 21.5%. Respondents were split nearly evenly between male and female. For each of the five stages of engagement with the respondents, all 340 people who participated in the first questionnaire were included in the recruitment email. This was to ensure as much data was gathered as possible. 106 respondents completed the final questionnaire which allowed before and after comparisons to be made between the first and final questionnaires, although not all of those participants responded to the intervention stage of the study.

4.3.3 Survey instrument and procedures

The purpose of the study presented in this chapter was to investigate changes in key variables pertaining to consumer perspectives on higher welfare products. Respondents were invited to complete an online questionnaire on a total of five occasions. The
questionnaire that respondents were invited to complete on the first and fifth occasions was comprised of the same questions and format as the questionnaire instrument discussed and analysed in Chapter Three. Additionally, the questionnaire utilised in this study expanded on the previous format by asking respondents to specify whether they were responsible for the grocery shopping in their household. Respondents were also asked to list the egg, pork, and chicken products — including brand, quantity and store — they had purchased on their most recent shopping trip. To ensure the responses were as accurate as possible, respondents were asked to base their answers on the receipt from their most recent shop if possible. After listing details about their recent purchases of eggs, pork, and chicken, respondents could then select up to five of the products listed and provide up to four reasons for purchasing the product; for example, ‘good price’, ‘Australian made’, ‘it was the only option available’. A rating for each of the products in terms of enjoyment was also included in this section of the questionnaire. The second and fourth questionnaires were shorter than the first and final questionnaires in an attempt to retain participants throughout the entire nine-month study. In these two questionnaires, the only questions asked were those that addressed the most recent purchases of eggs, pork and chicken as well as reasons for purchase and enjoyment rating. The process in which the questionnaires were distributed is shown in Figure 4.1.

The study was a pre-test-post-test design in that respondents were given a ‘treatment’ at around the halfway point in the project. Five months after the first questionnaire was completed, respondents were randomly allocated to one of two websites and then asked to complete several questions about their perceptions of the websites. Although the respondents were made aware of the entire study in the first questionnaire, the explicit intent of the website reviews was not communicated. Whilst still remaining within the Griffith University ethical clearance protocol as set out for the research, the respondents were led to believe that the websites formed part of a separate project and would be
providing feedback on the presentation and readability of their assigned website to ensure it would appeal to a broad range of individuals.

I constructed two separate websites to provide information to respondents about animal welfare. The websites were similar in appearance and had the same amount of content. However, the content differed in its focus on farming to investigate if and how responses to information differed between respondents. The first website focused on the health and environmental implications of intensive farming. The homepage consisted of a statement on the general message of the website, and there were further pages to click on to obtain more information. The health and environment website featured a page on health impacts of intensive farming including antibiotic resistance, transfer of infectious agents and nutrition concerns. The environment page presented participants with some negative environmental consequences of intensive farming such as deforestation and habitat loss, loss of freshwater, air and water pollution and waste. The alternative website focused on the animal welfare implications of intensive farming. The website was divided into a main page and further pages focused on welfare issues surrounding the farming conditions for meat chickens, laying hens, and pigs. The meanings behind labels of each of these product categories were explained and an explanation of typical farming conditions in Australia was provided.
Figure 4. 1 Survey process

The websites were designed to be similar in appearance whilst conveying different messages about intensive farming practices. The content was not necessarily representative of true facts, but reflected the general messages people receive about farming. The content was found using a general Internet search on the relevant topics and included information from the RSPCA, Humane Choice and Animals Australia. These websites reflect typical campaigns and available information on the topics of interest. After being directed to the website and spending the time perusing its contents,
respondents were asked to complete the following five questions based on their perceptions of the website they visited:

1) How would you rate the readability of the website? (Very good/ good/ average/ poor/ very poor)
2) What were your first impressions of the content of the website? (open text response)
3) Did you find the content interesting? (Yes/No response)
4) Did you find the content useful? (Yes/No response)
5) Do you think the information contained in the website has the potential to change people’s behaviour? (Yes/No response)
6) Please elaborate on your reasons for your response to the previous question (open text response)

4.3.4 Statistical analysis

The data gathered from the questionnaires were imported into Microsoft Excel and the Statistical Package for the Social Sciences (SPSS, Version 22) which were used to sort and analyse the results. A limitation of this study was that it was difficult to assess the purchasing decisions of respondents based on the information reported. As stated earlier, respondents were asked to list up to five chicken, pork, or egg products they had recently purchased and explain their reasons for doing so. The intention of this was to acquire information about product choices on the basis of animal welfare attributes and determine whether there was a change over time. However, due to the ambiguity of Australian products regarding welfare labels and accreditation schemes, as well as the potential difficulties respondents might have faced when recalling their most recent purchases, the majority of products listed were not easily differentiable from a welfare perspective. I did, however, gain valuable insight into the reasons and motivations behind purchases, which I include in my results section and further analysis.
4.4. RESULTS

4.4.1 Questionnaire validity and reliability

The survey instrument used for Stages One and Five of this study was the same as the instrument discussed in Chapter Three, with the addition of questions relating to most recent purchases. As discussed in section 3.3.2, the survey instrument was determined to be reliable and valid.

The test-retest reliability of the questionnaire instrument was determined by comparing respondents’ answers for categorical socio-demographic questions provided in Questionnaire One against their response in Questionnaire Five. The responses of each relevant question were entered into SPSS and Cohen’s kappa statistic was used to determine reliability measures.

The validity of the attitude scale, fifteen statements about the use and treatment of animals, was determined through Cronbach’s alpha. The Cronbach’s alpha for the attitude scale was .887 which indicates that it is a highly reliable measure. The outcomes of the test-retest reliability and validity are shown in Table 4.2. The kappa of the socio-demographic variables — with the exception of religion — was high, which is indicative of the reliability of the research instrument (Saratankos, 2005).

Table 4.2 Survey instrument validity and reliability

<table>
<thead>
<tr>
<th>Survey question/ scale</th>
<th>Overall kappa</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raised urban/rural</td>
<td>.710</td>
<td></td>
</tr>
<tr>
<td>Religion</td>
<td>.669</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.970</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.988</td>
<td></td>
</tr>
</tbody>
</table>
4.4.2 Socio-demographics

Of the 106 respondents who completed the first and final questionnaires, 92 described themselves as being responsible for the grocery shopping in their household, while eight respondents said it was shared between household members. Less than five people stated they were either not responsible for grocery shopping, sometimes responsible for grocery shopping, or stated they only shopped for themselves. Of the respondents who completed the entire study, six identified as vegetarian or vegan. The socio-demographic characteristics of the 73 participants who took part in the entire survey process are included in Table 4.4.

Table 4.4 Socio-demographic characteristics of respondents

<table>
<thead>
<tr>
<th>Gender</th>
<th>Count</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>23</td>
<td>31.5</td>
</tr>
<tr>
<td>Female</td>
<td>50</td>
<td>68.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age**</th>
<th>Count</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>19–24</td>
<td>5</td>
<td>6.9</td>
</tr>
<tr>
<td>25–34</td>
<td>13</td>
<td>17.8</td>
</tr>
<tr>
<td>35–50</td>
<td>23</td>
<td>31.5</td>
</tr>
<tr>
<td>50–65</td>
<td>32</td>
<td>43.8</td>
</tr>
</tbody>
</table>
Over 65 | 0 | 0

**Education**

<table>
<thead>
<tr>
<th>Did not complete year 10</th>
<th>6</th>
<th>8.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 10</td>
<td>5</td>
<td>6.9</td>
</tr>
<tr>
<td>Secondary school</td>
<td>14</td>
<td>19.2</td>
</tr>
<tr>
<td>TAFE or other vocational qualification</td>
<td>17</td>
<td>23.3</td>
</tr>
<tr>
<td>Trade qualification</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>Bachelor degree</td>
<td>15</td>
<td>20.6</td>
</tr>
<tr>
<td>Postgraduate degree</td>
<td>12</td>
<td>16.4</td>
</tr>
</tbody>
</table>

**Income**

<table>
<thead>
<tr>
<th>Less than $10,000</th>
<th>10</th>
<th>13.7</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10,000 to $30,000</td>
<td>22</td>
<td>30.1</td>
</tr>
<tr>
<td>$30,001 to $50,000</td>
<td>7</td>
<td>9.6</td>
</tr>
<tr>
<td>$50,001 to $70,000</td>
<td>14</td>
<td>19.2</td>
</tr>
<tr>
<td>$70,001 to $90,000</td>
<td>7</td>
<td>9.6</td>
</tr>
<tr>
<td>$90,001 to $120,000</td>
<td>5</td>
<td>6.9</td>
</tr>
<tr>
<td>$120,001 to $150,000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Over $150,000</td>
<td>1</td>
<td>1.4</td>
</tr>
</tbody>
</table>

**Ethnicity**

<table>
<thead>
<tr>
<th>White, Caucasian or European</th>
<th>60</th>
<th>82.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal or Torres Strait Islander</td>
<td>2</td>
<td>2.7</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Count</td>
<td>Percentage</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>-------</td>
<td>------------</td>
</tr>
<tr>
<td>Asian</td>
<td>6</td>
<td>8.2</td>
</tr>
<tr>
<td>Polynesian, Pacific Islander, Maori</td>
<td>1</td>
<td>1.4</td>
</tr>
<tr>
<td>African</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Middle-Eastern</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>4.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Religion</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No religion</td>
<td>27</td>
<td>37</td>
</tr>
<tr>
<td>Christian</td>
<td>34</td>
<td>46.6</td>
</tr>
<tr>
<td>Buddhist</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hindu</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Jewish</td>
<td>2</td>
<td>2.7</td>
</tr>
<tr>
<td>Muslim</td>
<td>2</td>
<td>2.7</td>
</tr>
<tr>
<td>Sikh</td>
<td>1</td>
<td>1.4</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>5.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Has children under 18</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>21</td>
<td>28.8</td>
</tr>
<tr>
<td>No</td>
<td>52</td>
<td>71.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experience with livestock</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>9</td>
<td>12.3</td>
</tr>
<tr>
<td>No</td>
<td>64</td>
<td>87.7</td>
</tr>
</tbody>
</table>
**Experience with pets**

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>57</td>
<td>16</td>
</tr>
</tbody>
</table>

** significantly correlated with concern for animal welfare

4.4.3 Awareness

There was not a significant difference in the mean actual awareness scores between Questionnaires One (M = 10.73, SD = 2.37) and Five (M = 11.1, SD = 2.834); t(72) = -1.349, p = .182. This indicates an overall improvement in awareness scores among respondents during the study but not significantly so. The first and fifth questionnaires included a question for respondents to rate their level of understanding of animal-based food production. They were also asked to rate their level of satisfaction with the amount of information available regarding animal welfare in Australia. The results are shown in Figures 4.3 and 4.4. Chi square tests showed no significant correlation between self-rated awareness between Questionnaires One and Five: $\chi^2(30) = 29.503, p = 0.491$. The percentage that stated they had an above average understanding of welfare remained around 40% for both questionnaire periods. However, the percentage of respondents who claimed to have ‘low’ or ‘no understanding’ of animal production was almost five percent higher in Questionnaire Five than in Questionnaire One. This suggests that a portion of the sample changed their opinion on their level of understanding over the duration of the survey; that is, they realised they had less knowledge than they originally believed.
Figure 4. 1 Respondents’ self-rated level of awareness of animal production for Questionnaires One and Five

Figure 4. 2 Respondents’ level of satisfaction with the availability of information on animal welfare in Australia

There was no significant relationship between level of satisfaction with the availability of animal welfare information between Questionnaires One and Five: $\chi^2(20) = 31.373$, $p = 0.05$. Satisfaction with the availability of animal welfare information increased by 10% during the study. Respondents were also asked to rate their levels of understanding of the
label meanings of chicken, egg, and pork products. The results are shown in Figure 4.5. A Wilcoxon signed-rank test showed a statistically significant change in self-rated understanding of egg labels between Questionnaires One and Five ($Z = -3.007, p = .003$). As shown in Figure 4.5, respondents rated their level of understanding of egg labels lower in Questionnaire Five, which occurred after their website visit. There was not a significant change in self-rated levels of understanding of pork ($Z = -.699, p = .484$) or chicken products ($Z = -.899, p = .369$).

\[\text{Survey 5} \quad \text{Survey 1} \]
\[\text{Survey 5} \quad \text{Survey 1} \]
\[\text{Survey 5} \quad \text{Survey 1} \]

**Figure 4.3 Levels of understanding of egg, pork and chicken products as reported in Questionnaires One and Five**

### 4.4.4 Attitudes

Attitudes and concern were measured in Questionnaires One and Five. The mean attitude score of respondents did not change significantly between Questionnaire One ($M = 47$, $SD = 9.5598$) and Questionnaire Five ($M = 47.671$, $SD = 9.1075$); $t(72) = -1.191, p = .237$. Respondents were asked to rate their level of concern on a five-point Likert scale from ‘not concerned at all’ to ‘extremely concerned’ for a number of aspects of farming as part of the attitudinal measures included in the questionnaire. These were:
1. How concerned are you regarding the treatment of farmed animals in Australia?
2. How concerned are you regarding the environmental impacts of animal farming in Australia?
3. How concerned are you regarding the health impacts of consuming animal-based foods (meat, dairy and eggs)?

The level of concern reported for Website 1 (n=32) and Website 2 (n=41) for each of these three aspects (welfare, environment and health) is shown in Figures 4.6 to 4.11.

![Concern for animal welfare — Website 1](image)

*Figure 4.4 Concern for animal welfare — Website 1 questionnaire results*
Figure 4. 5 Concern for animal welfare — Website 2 questionnaire results

Figure 4. 6 Concern for environmental impacts — Website 1 questionnaire results
Figure 4. 7 Concern for environmental impacts — Website 2 questionnaire results

Figure 4. 8 Concern for health impacts — Website 1 questionnaire results
4.4.5 Change in awareness and attitudes pre-test-post-test

One of the primary aims of the study presented in this chapter was to determine whether information has an impact on consumer awareness of farming and animal welfare, attitudes towards the treatment of farm animals, reasons for purchasing selected animal-based foods, concern for farm animal welfare, environmental impacts of farming, and health impacts of consuming animal-based foods.

A 2 x 2 between groups analysis of variance indicated no main effect of time on attitudes $F(1, 71) = 2.101, p = .152$. There was a main effect of website $F(1, 71) = 5.951, p = .017$. There was no significant interaction between the change in attitudes and website $F(1, 71) = 3.902, p = .052$. The same analysis was performed for awareness scores, which indicated there was no main effect of time on awareness $F(1, 71) = 2.065, p = .155$ and there was no main effect of website $F(1,71) = 1.701, p = .196$. There was no interaction between website and awareness score $F(1,71) = .673, p = .415$. 

![Concern for health impacts — Website 2](image)

*Figure 4. 9 Concern for health impacts — Website 2 questionnaire results*
Fifty-three respondents visited Website One which focused on animal welfare. Fifty-six respondents visited Website Two which focused on issues relating to the health and environmental issues associated with the consumption of animal-based foods. All 109 responses are included in this section of results regardless of whether the respondents completed the final questionnaire. They are included because the questionnaire responses provide valuable insight into how consumers perceive information and this stage can be treated as an independent stage of the overall research protocol.

Respondents of Questionnaires One and Five were asked to provide reasons for their most recent purchases of chicken, eggs and pork products. The reasons provided were grouped and the distribution of responses was compared between Questionnaires One and Five (Figures 4.12 and 4.13). An ANOVA indicated no significant differences between the before and after thematic categories (F = 4.35 df = 21 p = 0.36).

![Figure 4. 10 Reasons for purchases — Questionnaire 1](image-url)
4.4.6 Reactions to information in websites

The results of Questionnaire Three, which respondents completed following perusal of their assigned website, are discussed below. A larger proportion of the respondents who visited the health and environment website found the content of their respective website interesting, useful and having the potential to change behaviour; possibly because of self-interest regarding health implications. The percentages of respondents who agreed with three yes/no questions are presented in Table 4.3.

Table 4.3 Respondents’ opinions of website content

<table>
<thead>
<tr>
<th>Website</th>
<th>Did you find the content interesting?</th>
<th>Did you find the content useful?</th>
<th>Do you think the information has the potential to change people’s behaviour?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal welfare (n = 53)</td>
<td>35 (66%)</td>
<td>31 (58.5%)</td>
<td>33 (62.3%)</td>
</tr>
</tbody>
</table>
Two of the open response questions presented to respondents provided information on the ways consumers react to information on issues surrounding animal production. The most common response to the content included in the animal welfare website was a positive opinion with 18 of 38 relevant responses belonging to this category. Positive opinions included ‘engaging’, ‘interesting’, ‘raising awareness’, ‘informative’ and ‘useful’. The frequency of positive responses was followed closely by negative opinions with 15 responses belonging to this category. Such opinions included ‘boring’, ‘rubbish’ and ‘inaccurate’. Five respondents reported negative emotions which included shock, despair and helplessness.

Positive opinions were also the most common type of reaction to the alternative website, with 21 (47.4%) of the relevant responses falling into this category. Positive opinions included ‘informative’ and ‘interesting’ and several respondents agreed with the importance and relevance of information of this nature. Eleven respondents indicated a negative opinion about the content of the website including ‘alarmist’, ‘intense’ and ‘scaremongering’. Emotive responses for this website were similar to those to the animal welfare website in that respondents reported feelings of shock, distress in addition to horror and anger.

Respondents were also asked to indicate the reasons for their yes/no response on whether the content of the website they viewed had the potential to change people’s behaviour. I coded the responses per their reaction and present them below according to the theme that emerged:
Question: do you think the information contained in the website has the potential to change people's behaviour?

4.4.6.1 Website 1 — Animal welfare

Yes:

Of the 33 respondents who said the information has the potential to change people’s behaviour, many of the reasons were concerned with the value of gaining awareness of the ‘reality’ of food production. Several respondents wrote of the power of information to change attitudes and behaviour among consumers.

Consumer awareness and change should lead to consumer demand for changes to be made.

A lot of people are not aware of how meat is produced; it is very educational.

Most people don’t think about where or how their food is produced but if shown the realities of mass food production I think most would change their buying habits.

Some indicated surprise at certifications but also reiterated the importance of information on labelling so that consumers can make informed choices

I was a bit shocked that some of the certifications were still a bit lax and I think other people will be too.

Both websites included a table on the differences between the different certification schemes and it was evident that this information was welcome by respondents; some reported that it was useful and relevant to helping them make informed shopping choices. One respondent explained why they believed the information has the potential to change people’s behaviour by stating that, if people actually spend the time to understand the relevant information on label meanings, they may take translate that awareness into making more informed choices at the supermarket.
The importance, not just of the relevance of information, but also the frequency with which it is delivered, was also discussed. While some responses suggested people do not know enough and awareness would change their outlook, others suggested that people are aware of the issues but the message does not translate to behaviours simply because it is not repeated enough:

Most people support animal welfare — they just need to be reminded about making good choices and informed about what is really happening,

and

Most people are aware of the animal welfare issues with factory farming, but like me, probably do little about it. They need reminding.

Some responses indicated that the source of information and the way in which it is delivered to the reader is important.

Most people would leave the website quickly as it’s so boring.

I need to be informed in a way that will make me interested in the issue, rather than straight out trying to ‘guilt’ me. The information is not written in a way that would encourage me to read it. The way it is written would turn me off reading it, I only read it because of this questionnaire.

The truth and generalizability of the information were questioned by some and others put the unlikelihood of consumers changing their behaviours down to simply not caring and continuing with their previous habits.

4.4.6.2 Website 2 — Health and environment

A slightly higher percentage of respondents who viewed the environment and health website agreed that the information has the potential to change behaviour (64.3%). As in the animal welfare website, several of respondents highlighted the importance of the information presented in the website being made available to consumers. The quotes below support this:

Knowledge is power. I will NEVER buy any form of meat or poultry again that is not certified free range.
I think people don’t generally know or think about the source of their meat/eggs and just buy according to price. So, education of people is the answer. Showing the power of the consumer helps to get people to realise they can change the big picture.

Respondents who stated reasons for their choice in line with above quotes indicated that it was not just them who were unaware of the information presented in the website but that most other people would also be unaware. The impact of the information was not as far-reaching for some who suggested that, while the content was interesting, it was not enough to warrant a change in behaviour.

Some responses suggested that consumers do not know what to do with information of this nature, and therefore concluded that it does not have the potential to change behaviour. What to do with the information provided in the website proved to be a challenge for respondents, as described below:

People will read it...like I have & think that is so sad & that it has bad implications on animals & the environment...but what can I/we do as a consumer?? I love meat...I’m not going to stop eating it...but again what can I do? I buy meat from where I can afford...I have no idea where it has come from...how it was farmed...I totally agree we need to manage farming better & the impacts...I want to know what I can do to better help the situation (we already do 1–2 meat free days) and want to know farmers/governments, suppliers, supermarket chains/butchers etc...are managing this issue too. But unfortunately...I think the average person will read & forget about it by their next grocery shop. We need labels on meat so we know what we are buying so consumers have a choice to not buy factory farm meats.

Respondents assigned to this website also reacted in a similar way with regards to the format and source of information. Responses highlighted the need for the information to be presented in a way that is easy to understand and is from a credible source:

It’s not balanced & I can’t see the information backed up with scientific evidence. Perhaps links to more respected agencies could back up the claims being made.

4.4.6.3 Preference for more information
The last two questions in the final questionnaire asked respondents whether they would prefer to have access to more information about animal welfare. 40.6% responded yes and 30.4% said no, while 22.6% were undecided. Those who responded affirmatively were asked to specify where they would prefer to receive such information. A strong preference among respondents for information from the point of sale is evident, with nearly 40% of respondents suggesting information should be offered when purchasing products from supermarkets, butchers and online outlets. The second strongest preference was for information from the RSPCA, which is likely to be perceived by respondents as an authority on issues relating to animal welfare in Australia. The preferences for various sources of information are shown in table 4.4.

Table 4.4 Preferred sources of information

<table>
<thead>
<tr>
<th>Preferred source/location of animal welfare information</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supermarkets/butchers/online stores</td>
<td>19</td>
</tr>
<tr>
<td>RSPCA</td>
<td>12</td>
</tr>
<tr>
<td>Animal welfare groups (not specifically RSPCA)</td>
<td>3</td>
</tr>
<tr>
<td>Labelling on product packaging</td>
<td>3</td>
</tr>
<tr>
<td>TV news</td>
<td>2</td>
</tr>
<tr>
<td>Independent agency</td>
<td>2</td>
</tr>
<tr>
<td>Government</td>
<td>2</td>
</tr>
<tr>
<td>Online</td>
<td>1</td>
</tr>
<tr>
<td>Industry bodies</td>
<td>1</td>
</tr>
<tr>
<td>Documentaries</td>
<td>1</td>
</tr>
<tr>
<td>Restaurants and cafes</td>
<td>1</td>
</tr>
<tr>
<td>Email</td>
<td>1</td>
</tr>
</tbody>
</table>
4.5 DISCUSSION

The study presented in this chapter was designed to build upon the insights into consumer attitudes and awareness gathered in Chapter Three by implementing a pre-test-post-test type of quasi-experimental design. The purpose of employing a pre-test-post-test research design was so that I could determine whether information about animal farming would impact consumers’ attitudes, awareness, and concern pertaining to animal production. The design also enabled me to investigate the ways consumers respond to information on the impacts of animal production associated with animal welfare, health, and the environment.

In this study, as in the one presented in Chapter Three, I was interested in self-rated awareness as well as actual awareness scores. Extending from the enquiries of the previous chapter, I investigated the impact of information on respondents’ attitudes, awareness and concern of animal farming as well as their perceptions of the information they were given, which included issues that consumers are likely to be exposed to from a range of sources, including friends, family, retailers, the media, and animal protection groups.

4.5.1 Awareness

The change in self-rated levels of awareness was not significant throughout the study. This means the majority of respondents did not change their self-assessed level of understanding following exposure to information. Although the variation is not statistically significant, it is important to note that a higher percentage of respondents claimed to have low or very low self-rated awareness in the final questionnaire (5% more) but mean actual awareness scores improved between the first and final sampling periods. Over half of the respondents maintained their belief that they had an above average awareness of animal production during the entire study. In other words, respondents did
deepen their knowledge during the study but this change was not consciously perceived by them. Resistance to the nature and presentation of the information could explain why respondents did not wish to admit to an increase in knowledge. Imploring people to reconsider their dietary choices based on ethical grounds has been shown to elicit defensive attitudes; after all, it is easy to ask people to criticize others for their behaviours but it is not so easy to encourage the same level of self-reflection. According to Bergmann and colleagues (2010), a significant segment of consumers grapple with the feelings of internal conflict associated with a mutual respect for animals and a desire to continue to eat meat. Consumers falling into this category often attempt to rationalise their behaviour through the maintenance of beliefs around the consequences of meat consumption and animal capacities (Bastian et al., 2011; Loughnan et al., 2014).

It is possible that respondents underestimated their knowledge because of the confusion they experience over animal welfare concepts — a salient finding from the questionnaire also discussed in the previous chapter. The importance of informative and understandable welfare labels was highlighted by Kehlbacher and colleagues (2012), who propose product labelling based on the segmentation of consumer demands and preferences to cater to different values and belief systems among consumers. Effective labels are frequently cited as a way to improve consumer knowledge (Humane Society International, 2010) which is highly relevant in this study. A lack of information was identified as a barrier in supporting higher welfare products.

Another explanation why self-rated knowledge was low among respondents could be due to the separation in modern society between consumers and farming. Only 12% of respondents in this study had experience with livestock which suggests alienation from the sector. Worsley et al. (2015) conducted a survey with over 1,000 Australian adults to assess their knowledge of agriculture and found that those who lived within cities and
urban locations reported more uncertainty in their responses than their rural counterparts. When consumers’ lifestyles are detached from farming, they are less likely to be aware of the welfare issues and solutions relevant to farming (Te Velde et al., 2002; Vanhonacker et al., 2010). The majority of respondents rated their farming and animal welfare knowledge as poor, which is consistent with similar research (Frewer et al., 2005; Heise & Theuvsen, 2017; Kanis et al., 2003).

There was a significant difference in the self-rated level of understanding of egg labels between pre- and post-intervention stages of the study. This is significant because it indicates the potential of information to make people lose confidence in their level of awareness. The information the respondents were given was the exact style of messaging they would encounter on animal welfare websites; it can be surmised that such messages are only making consumers more confused and lacking direction in how to support genuine high welfare products.

Almost a quarter of respondents in the final questionnaire reported low self-rated awareness scores and a further 35% reported ‘average’ levels; however, over 40% of respondents indicated they were satisfied with the availability of animal welfare information. There may be several reasons for this. It may be that consumers do not feel motivated to seek out further information, or are unconvinced that additional information would change existing behavioural patterns. Individuals experiencing cognitive dissonance are unlikely to seek out or accept information that conflicts with current beliefs (Gaspar et al., 2016). The European Commission’s (European Commission, 2016, p. 25) study of over 27,000 people found a similar result, with 37% disagreeing that “the EU should do more for animal welfare awareness”

When asked in the final questionnaire if respondents would prefer more information about animal welfare, over a quarter said no and almost a quarter (22.6%) was unsure. A similar
research question posed by the European Commission (2016) found that the majority of 64% of European respondents indicated a desire for further information on animal welfare. It is possible that after being made aware of information, some respondents may have realised how prevalent messages on animal-based foods are — between charities, supermarkets, politicians, the media, and food businesses — they are difficult to avoid.

Kehlbacher et al. (2012) determined the feasibility of the implementation of certified animal welfare labels to satisfy segments of consumers that prefer higher welfare products. The authors identified a lack of information as a major barrier for consumers who fall within the ‘concerned’ category, and information on food labels — recommended by respondents in the present study — is perceived by stakeholders in the food industry as an ideal way to drive the market of higher welfare animal products. However, the findings presented here do not indicate such a simple path to more ethical consumerism via the provision of information.

The findings resulting from this study corroborate the results of similar research others have conducted to examine consumer awareness. A study by Mesias et al. (2012) examined levels of knowledge, willingness to pay and consumption of organic tomatoes among Spanish consumers. The authors found an overall lack of knowledge and a considerable degree of confusion around label meanings. There was a positive correlation between levels of awareness and willingness to pay for organic produce thus highlighting the need for education programs and clear information on labels. Research conducted by Mesias and colleagues (2012) suggests the positive influence of information can be harnessed to drive the engagement of consumers with the issue of animal welfare and other impacts of animal production. The authors postulated that once consumers are engaged they may be more likely to identify alternatives that suit their lifestyle and preferences. It is important to continue to research the role of information provision and
awareness of animal production in order to increase consumer satisfaction and confidence in their buying decisions.

4.5.2 Attitudes and concern

There was no significant change in respondent attitudes between Questionnaires One and Five. This is expected because, although attitudes can change over time; experience, repetition and viable alternatives are often required to harness significant change. As one of the respondents stated after visiting the website, they would require the messages to be repeated over time before attitudes and behaviour were affected. Website content had no significant effect on attitude; attitudes therefore withstood the impact of both animal welfare, environment and health centred content. While the information presented to respondents elicited a range of reactions, the fundamental attitudes and therefore anticipated behaviour, remained unchanged. It is important to note that, while education through the dissemination of accurate information is important, individuals must be persuaded to change beliefs and subsequent behaviours (Coleman, 2010).

Ambivalent attitudes of consumers to animal welfare were highlighted by Te Velde et al. (2002), who conducted interviews with farmers and consumers. The authors found that, while farmers held more positive views of farm animal welfare overall, both groups show ambivalence around their perception of animal welfare and their behaviour relating to the consumption of animal products. While there are many indications that consumers hold positive attitudes towards the treatment of animals — and these attitudes may or may not directly translate into behaviours — there is a segment of consumers who will remain unengaged in the issue. For some segments of consumers, the consideration of animal welfare as a necessary product attribute must coalesce with the desired qualities of price, taste, healthiness, safety, among other qualities (Vanhonacker & Verbeke, 2014).
Research suggests that consumers want to know more. More than two-thirds (68%) of consumers asked to consider what they would like to know from farmers about food production that they currently do not know indicated they wanted to know more about ways farmers ensure animal care (Demeter Communications, 2010). More than half of respondents were satisfied with the availability of information.

In a questionnaire conducted by market researcher The Hartman Group (2015), 44% of respondents said they wanted to know more about how food companies treat the animals used in their products. Almost half of consumers (47%) said they support companies that avoid inhumane treatment of animals, a six point increase from a similar questionnaire conducted in 2013 (Group, 2015). In addition, 65% of respondents indicated they want animals raised in as natural environment as possible. What is of importance then is how to motivate consumers to align their preference for higher welfare animal-based foods with their desire to maintain a comfortable barrier between themselves and the knowledge they have of farming.

Graham and Abrahamse (2017) investigated the impact of information provision on attitudes to meat consumption. Their study focused on consumer awareness of impacts on climate change related to meat production. The study found that participants levels of concern and intention to limit meat consumption increased while positive attitudes towards meat consumption were maintained. Findings from their research reinforce the capacity for information to increase concern and highlight the need for customised messages and lengthy appeals to initiate changes in actual consumption behaviours.

In an effort to communicate with consumers about the inevitable suffering of farm animals implicated in modern, intensive farming systems, information is recognised by animal interest groups as being critically important; hence why educating consumers comprises a major strategy of many animal advocacy groups. Ensuring consumers have
access to adequate information on farming and animal welfare is understood to be a crucial step in encouraging the purchase of higher welfare products. A disappointing reality, which is indicated by the results of this quasi-experimental study, among others, is that consumers do not react equally to information on ethical purchasing options, and whether they trust the source of the information plays an important role in their receptivity (McKendree et al., 2014; Toma et al., 2010). Miele and Evans (2010) carried out focus groups with Italian consumers to investigate the impact of animal welfare information on purchasing decisions. They found that food labels informing consumers of welfare information revealed two groups of consumers — those who became engaged with the material and those who were unaffected by the information. The study demonstrates the potential for welfare information to allow some segments of consumers to translate their preferences for animal welfare into purchasing behaviours; whilst the same information will have a negligible impact on other consumer groups. Recommendations towards segmenting consumers based on their perceived importance of animal welfare was suggested by Vanhonacker and Verbeke (2007). Messages pertaining to animal welfare that are tailored to distinct consumer groups can help to overcome conflicting beliefs between groups whilst still promoting higher welfare practices.

There was not a significant change in attitude scores over time, with less than a full score in difference between Questionnaire One (47) and Questionnaire Five (47.671). Attitudes are not fixed and can change over time due to changes in beliefs arising from new information or from changes to social climate. In the wake of new information that may conflict with existing beliefs, as was the case with the present study, it is possible that individuals modify their attitudes to fit with their existing behaviours, which they are motivated to maintain. The state of cognitive dissonance may cause a change in attitudes towards certain behaviour in an attempt to reduce the feelings of unease associated with inconsistencies between attitudes or attitudes and behaviours (Festinger, 1957;
Rothgerber, 2014). For example, if an individual feels it is wrong to cause suffering to an animal for the sole purpose of acquiring meat from the animal and then they are made aware of implicit suffering in a certain practice, the individual may adjust their belief to "I am against causing suffering for food production but meat in Australia is produced using satisfactory welfare standards” or “animals are bred to be eaten anyway”. It is therefore possible that participants in this study did not intentionally maintain their attitudes but subconsciously adjusted their perception of the attitude statements to represent their beliefs without jeopardizing their behaviours.

Overall, the actual awareness scores and the attitudes were above average. The majority of respondents were satisfied with the amount of information accessible regarding animal welfare. Of the 40.6% of respondents who indicated that they would prefer to have more information available about animal welfare, the most preferred source of such information was at the point of purchase.

4.5.3 Perception of information on the impacts of farming

The pre-test post-test stage of the research — in which participants were exposed to information on animal production — allowed me to gain insight into why there was not a significant change in key variables between the initial and final stages of data collection. As stated in the results section, there was no effect of time or website visited on awareness or attitude score. This may be because awareness among respondents was already at a moderate level considering the mean score in Questionnaire Five was 65% correct answers. However, over half of respondents for each of the websites said the information contained was interesting, useful and had the capacity to change people’s behaviour.

The website reviews also provided an opportunity to identify barriers to behaviour change towards the consumption of higher welfare animal products. Several respondents referred to the importance of repetition in encourage a change in behaviour. As the website visit
was a brief, one-off opportunity, any motivation the respondents might have experienced to seek out more information, reflect on their attitudinal disposition and underlying belief systems, and contemplate a change in behaviour is likely to be fleeting.

Despite reporting concern for animal welfare and a preference for higher welfare food, many consumers do not act on such concerns. In this study, the majority of respondents did not have a desire for further information on animal welfare. An explanation could be found in ‘affective ignorance’ — a phenomenon in which individuals shift responsibility of (in this case) animal welfare to other parties or stakeholders. Avoidance of information among consumers can induce an uncomfortable feeling indicative of internal conflicts between attitudes and behaviours. Williams (2008) contextualises the strategy of affected ignorance whereby individuals may maintain current behaviours by electing to remain uninformed, unaware or in denial of the connections between their consumption choices and the moral dilemma their choices may pose to them. Te Velde and colleagues (2002) refer to the strategy as ‘functional ignorance’ whilst Wicks (2011) terms the collective strategy of ignorance the ‘sociology of denial’.

For attitudes to develop from a proposed behaviour into an actual behaviour, consumers must have knowledge of alternative behaviours and an understanding of why they are more suitable. Alternatives to intensively-produced meat and animal products are not easily identifiable — a problem identified in Chapter Three. Confusing labels and inconsistent messages about animal welfare do not help to further the cause and can in fact lead to consumers abandoning any thoughts of modifying behaviour. Truth in labelling laws are a priority issue for many animal welfare groups including Animals Australia, RSPCA, and Voiceless, among international organisations such as Humane Society International. While consumers state they want to know more and have access to greater transparency on animal welfare issues, they may avoid taking in much of the
information on food labels (Berning et al., 2008). ‘Information overload’ can overwhelm shoppers, and laws and regulations on truth in labelling could serve as a solution to this problem by allowing consumers to make informed choices without having to decipher a plethora of labels (Humane Society International Australia, 2017). In their study on superfluous labels on egg cartons, Heng and colleagues (2016) found consumers were selective in their valuation of labels, and cartons with over four labels inversely impacting consumer willingness to pay; thus highlighting the importance of succinct and accurate credence information on food packaging.

There is potential for consumers to change their attitudes regarding animal production when presented with new information. Ryan et al. (2015) found consumers’ support for certain farming practices decreased following exposure to information. Respondents in their questionnaire were asked to indicate their support for group housing, gestation stalls and other housing alternatives for pigs raised for meat. They found that after respondents gained an increased awareness, support for group housing increased by 70%; with the majority of respondents indicating a preference for farming systems that allow pigs to fulfil natural behaviours. The preferred format of information was video and images rather than through reading scientific papers and other material. The preference of consumers towards information presented in a visually appealing and convenient format — as opposed to that which requires arduous reading and intellectual processing — should be anticipated by relevant stakeholders (de Jonge & van Trijp, 2013).

4.5.4 Preference for product attributes

Respondents were asked to provide reasons for their most recent product purchases. A larger proportion of respondents in this study stated they prefer attributes such as price and convenience and gave reasons for purchasing certain products based on habit and for specific meals. This differs from the results of Chapter Three in which respondents stated
they value the humane treatment of animals and free range as highly important product attributes. This discrepancy could be because respondents were asked the question in this study in direct reference to products they had purchased rather than as a distinct and more hypothetical question.

Behaviour studies pertaining to food selection highlight the potential for unclear labelling to act as a barrier to label use and subsequent behaviour change. Besler et al. (2012) investigated the use of food labels and nutrition information by Turkish consumers and determined that a lack of understanding of label terms, inferior presentation, and uncertainty around the accuracy of information were all barriers to use of labels. Other studies support the need for informative labels on animal products. Mayfield et al. (2007) found the majority of respondents from Sweden, Italy, and the United Kingdom would use labels as a primary source of information if it was presented in that way. Several studies (Harper & Henson, 2001) found that consumers considered lack of information one of the main barriers to purchasing ‘animal-friendly’ products.

In this study, there were no significant changes in the reasons for selecting their products, although my research design did not allow for information on whether their purchases changed throughout the survey period. Price was the most important product attribute — followed by habit, experience, and whether they required a product for a specific meal. As indicated by research on the intention-behaviour gap (Bray et al., 2011), people often feel inclined to provide answers to surveys with answers representative of values and intentions they believe are expected of them. In the case of this research, the respondents did not hide the importance they place on value for money.

Almost half of the respondents agreed they would like increased availability of information about animal welfare, with most preferring to access information at the point
of sale when grocery shopping. Following information at the point of sale, respondents also agreed that the RSPCA is a trusted source of information. In addition to their information campaigns, the RSPCA’s Freedom Food scheme is recognised by many consumers as a credible certification scheme which strives to be transparent and honest in its focus and benefits (Pickett et al., 2014). Many studies have indicated that consumers want greater transparency from the retailers and food outlets they buy food from, not just from an animal welfare perspective but also concerning human health and the environment (Amos & Sullivan, 2017b; Frewer et al., 2005). Similar to the results of this study, the transparency report by the Hartman group found that 47% of consumers support companies that prioritise animal welfare and 44% would like more information from companies about their animal welfare policies. The transparency report found that consumers would like more information about hormones and the use of antibiotics which is important for a health perspective for many people. People place great emphasis on natural behaviours for animals; indicating, for example, the importance of cage free conditions (65%) and hormone and antibiotic-free products (63%).

Previous research on consumer knowledge of food production and farming suggests consumers lacking practical and contextual understanding to connect them to their food. For the livelihood of the current industry, which is likely to face ongoing issues with sustainability, political and social challenges, it is essential to ensure Australian consumers are given the resources to make informed decisions. This study indicates the enormous challenges that lie ahead of the livestock sector, producers of higher welfare products, and animal protection groups when attempting to change consumer behaviours, attitudes, and perceptions in a particular direction.
4.5.5 Barriers to behaviour change

Throughout this dissertation, I have identified potential barriers to behaviour change. Barriers to behaviour change have emerged in this chapter by the way of respondents’ reactions to information. While several emotive responses were recorded regarding shock and disapproval with current farming and labelling standards, many respondents commented on the poor presentation of information contained in the websites. Respondents also questioned the accuracy of information and the credibility of the source. It is important to reiterate the fact that all information included in the websites was accurate despite its sometimes emotive or confronting rhetoric. Information that has been sanctioned by trusted sources such as the RSPCA and independent scientific researchers may be readily accepted by consumers wishing to learn more about ethical food choices.

In the Humane Heartland national survey (American Humane Association, 2014), participants identified lack of availability as the biggest factor keeping them from buying humanely raised products, and almost 20% of participants identified cost as the biggest factor. It is therefore important for food businesses and special interest groups to encourage legislative change to make higher welfare products more affordable to concerned consumers. The inclusion of animal welfare within school curriculum could also foster more animal-friendly attitudes in the younger members of the population.

Consumers consider systems where outdoor access, stocking density, and day-night rhythm are enhanced to be the most animal-friendly farming methods. Differences between individuals based on the extent in which they believed the various farm management practices influenced animal friendliness were explained by their knowledge and familiarity with farming, degree of anthropomorphism, and their moral beliefs regarding animal welfare.
Toma et al. (2012) found a positive relationship between consumers’ access to information and their willingness to change shopping habits in order to purchase higher welfare foods. They determined the effect of increased access to information to have a flow on effect whereby the consumer felt more responsible for their purchasing choices and experienced a stronger perception of labels which culminated in a willingness to modify behaviours. However, the gap between behavioural willingness and actual behaviour would require further research in this regard. The attitudes and reported concern for the impacts of animal products did not change significantly in response to the provision of information in my study. This is in contrast to the finding by McEachern et al. (2007) that access to information on animal welfare stimulated moral concern for farm animals and impacted consumers’ motivation to make higher welfare food choices.

The study in this chapter and in the proceeding chapter both suggest confusion among consumers about the meanings behind product labels. Confusion on animal welfare meanings has been reported in other studies; a survey commissioned by the National Chicken Council in the US revealed extreme consumer confusion related to the meaning of common labelling claims on poultry. For example, 77% of respondents said they believe chicken meat contains added hormones and steroids, and 68% said they believe most chickens raised for meat are confined to cages (National Chicken Council, 2015).

### 4.5.6 Limitations

A limitation of the study was that the websites did not vary to a large degree; however, it is worth noting that overall, awareness and attitudes did not change, despite the strong reactions recorded by some respondents in reaction to the information they were exposed to through the website visit. It was the intention to maintain similarities between the two websites and instead allow for subtle differences in the content that was included. Further research could examine other variables that are likely to be impacted by increased
awareness, including actual behaviour and motivation for purchasing decisions. Future research could also screen participants based on their existing values and beliefs, and use information based on existing beliefs to suggest changes that could be made to their purchases.

A study was conducted by Rutsaert and colleagues (2015) to examine how consumers engage with information about the risks and benefits associated with red meat consumption beyond the basic level of information seeking. They found that the degree to which respondents deliberated over the supplied online material; that is, by asking questions, leaving comments and accessing definitions was correlated with their recall of the messages received. Furthermore, respondents who were led to believe the information was too complex remained unengaged with the issue. The findings of their research are relevant to my study in that it is important to distinguish between seeking or being receptive to information and actively engaging with available information. While the complexity of information was not mentioned in the qualitative responses to my study, there were numerous references to the format in which the information was presented. Respondents in Rustaert et al.’s (2015) study provided twice as many comments on the supplied material when it included a news article and a YouTube video.

Numerous studies have investigated the effect of information on consumer preferences and enjoyment of food items. A study by Napolitano et al. (2007) investigated the effect of information about animal welfare and nutritional attributes on consumer acceptability of meat from Podolian cattle. The researchers found that despite consumers’ actual liking of the meat being largely influenced by its sensory properties, positive information about animal welfare and nutritional value increased the degree to which they expected to enjoy the product. Therefore, information can encourage consumers to perceive the product in a more positive way and increase their meat acceptability. The findings of my study
demonstrate the potential for higher welfare animal products to differentiate themselves among competing products in terms of credence product attributes related to animal welfare and health. Food labels have the capacity to determine consumer expectations of a particular product which can, in turn, generate positive beliefs pertaining to product quality. Findings from Verbeke et al.’s (2012, p. 213) study indicated the importance in “generating awareness [around animal welfare] and favourable quality perceptions”. This would stimulate consumers’ interest in animal welfare and help them to acquire information about product attributes. Due to the relatively large proportion of respondents in my study who stated that their preferred venue for receiving animal welfare information was at the point of sale — which could be interpreted as through labels — considerable potential exists for product expectations and quality perceptions improvement through providing credence claims to animal products.

A number of respondents reported experiencing shock after visiting the websites in the third stage of the study. Shock is a very powerful emotion that can result in behaviour change for some people, while causing others to employ cognitive devices to deny or deflect feelings of discomfort. Tiplady et al. (2013) investigated the impact of the release of shocking footage of cruelty within the live export industry. Footage was aired of acts of violence against livestock through Australian media channels in 2011 and caused emotional reactions of despair, shock and sadness among the general public. However, less than 10% of respondents in the study contacted politicians or wrote to newspapers, and even fewer stopped eating meat or donated to an animal welfare organisation, indicating that the emotional response triggered by the exposure to the footage did not translate into the studied behavioural modification. An important finding of this study was that, although respondents reported strong emotional reactions to the cruelty, they felt it was important that they were aware of what was happening.
4.6 Conclusion

The study presented in this chapter was designed to pursue several lines of enquiry pertaining to the role of information in shaping attitudes about animal-based foods. Through a quasi-experimental research design, I was able to collect data on consumer concern, attitudes, and awareness on the environmental, human health, and animal welfare impacts of intensive animal production.

Respondents agreed that intensive farming and increases in the consumption of animal-products is associated with negative impacts. Certain aspects of farm animal welfare cause concern among consumers, and low levels of awareness about animal welfare issues can serve as a negative to producers, food businesses, and concerned consumers. The provision of information is an important and necessary factor in allowing people to translate their beliefs on how farm animals should be treated into purchasing behaviours. The findings from this research indicate the risks of providing information to consumers that can be interpreted as exaggerated, misinformed or without credibility.

The lack of awareness that consumers have of animal production and its impacts, despite exposure to information, indicates an opportunity for various stakeholders to improve communication. A major finding of the research was that there was no significant change in attitudes, awareness or concern between the pre and post samples of data collection. In the next chapter I discuss interviews I conducted with the aim of describing the varying perspectives of stakeholder groups.
CHAPTER FIVE

STAKEHOLDER VALUES AND PERSPECTIVES

5.1 Introduction

The previous chapters in this dissertation have examined consumer attitudes, concerns, and awareness surrounding the production of animal-based foods. I have shown through the quantitative research discussed in Chapters Three and Four that consumers care about farm animal welfare and are concerned about some aspects of modern production systems. The market share of higher welfare animal-based foods is relatively small, and this is partly due to limited knowledge among consumers about industry standards and initiatives to incorporate animal welfare as an indicator of food quality. With increasing concern among the public about animal welfare, it is important for relevant stakeholders in the food chain to communicate their perspectives and address what measures they take to alleviate consumer concerns. The stakeholders relevant to the issue of farm animal welfare include suppliers, producers and their representative organisations, retailers, government, animal protection and other non-profit organisations, researchers and consumer groups. Incorporating stakeholder attitudes enables shared values to be understood which aids in the development of tools to communicate about animal welfare standards and policies (Bergstra et al., 2017; Howell et al., 2016; Ventura et al., 2015).

Integrating stakeholder and consumer perspectives provides an understanding of how the expectations of various actors in the supply chain can be managed alongside growing demands for improved animal welfare (Bracke et al., 2005; Kjærnes et al., 2007).

The production of animal-based foods is influenced by political, social, and economic factors. Improvements to farm animal welfare fall under the responsibility of a number of stakeholders implicated in the supply chain beyond consumers themselves. Previously
considered the sole responsibility of policy-makers, producers and retailers play an important role in addressing economic and moral demands among consumers (Bracke et al., 2005; Cornish et al., 2016). As discussed in Chapter Two, opinions vary on who is responsible for guaranteeing animal welfare standards. Understanding the ways in which stakeholders communicate information about animal welfare is important to members of the food supply chain, as well as consumers (Blokhuis et al., 2008; Verbeke, 2009b). Furthermore, it is beneficial for stakeholders themselves to clarify their potential role in establishing animal welfare as part of their activities.

The ways different stakeholders conceptualise animal welfare varies due to differences in convictions, values, norms, knowledge, and interests in farming and its products — hence the seemingly large gap between the messages of producers, suppliers and retailers and those who are not economically involved in the industry (Vanhonacker et al., 2008). The initiatives, motivations and resources afforded by relevant stakeholders vary considerably; therefore, I expected that all stakeholders would have a distinct view of the importance of farm animal welfare and its relevance to consumers. The ways in which stakeholders vary in their conceptualisation of farm animal welfare depend on their ideological perspectives and economic role within the supply chain.

While my previous chapters explored how consumers respond to exposure to animal welfare information, this chapter seeks to add a further dimension to the research problem by considering the attitudes and perspectives of key stakeholders. Stakeholders are any individual or group who can affect or is affected by an organisation, system, or issue — in this instance, farm animal welfare (Greenwood, 2001; Mitchell et al., 1997). The motivations for investigating ways to improve farm animal welfare are likely to vary between stakeholder groups. Using the qualitative data gathered from the interviews presented in this chapter, I argue that animal welfare improvements can be beneficial to
all stakeholders, and highlighting consumer concerns can highlight opportunities for market differentiation and economic rewards for actors in the supply chain. While some studies have found that joint efforts like quality assurance schemes result in few improvements for animal welfare (Barnett et al., 2008), other research suggests that initiatives involving stakeholder collaboration are likely to result in superior animal welfare outcomes as opposed to when the responsibility is left solely to one stakeholder group (Bracke et al., 2005; Heerwagen et al., 2015; Ortega et al., 2015; Verbeke, 2009b).

The preceding chapters established that the issue of whether consumers are motivated to purchase animal-based food items produced under higher welfare standards is complex and affected by the direction of stakeholder groups. Based on insight gathered from the questionnaires and quasi-experimental study, I argue that information on farming practices, standards and labelling is of significance to consumers; however, many other factors impact the efficacy of consumer sentiment in driving improvements to farm animal welfare. It is important to investigate the ways stakeholders create a communal understanding of animal welfare and how they react to the public’s growing interest in farm animal welfare. Animal welfare legislation in Australia is inconsistent in how it is implemented and enforced. As discussed in the literature review (Chapter Two), animal welfare is considered a public good by many Australians, yet the high proportion of consumers who admit to being concerned about animal welfare, combined with growing interest in food business, indicate that current legislation is not adequate. An examination of stakeholder perspectives, and how various stakeholders are dealing with legislative inadequacies and inconsistencies, are significant to the objectives of this dissertation.

As societal concern surrounding the impacts of food production increases, economic stakeholders have had to formulate appropriate responses to maintain their credibility within the market. Furthermore, the acknowledgement of a foreseeable rise in consumer
concern for ethically sourced products may lead some stakeholders to proactively modify production standards to derive maximum economic benefits. To enhance effective communication and collaboration for the benefit of farm animals, it is important to understand the demands, concerns and abilities of all relevant stakeholder groups. Improvements to animal welfare, which lead to increased availability of higher welfare animal-based foods, can be initiated at several levels within the supply chain and are also influenced indirectly through the mainstream and social media (Tiplady et al., 2013; Verbeke & Viaene, 1999).

Beyond consumer interest, a number of organisations have the power to determine whether the issue of farm animal welfare is addressed in the public domain. For this reason, analysis of stakeholder relationships is important to understand the ways in which societal concern is addressed by the various stakeholders and the effect of the perceived importance of consumer awareness, concerns and attitudes (Figure 5.1). Furthermore, social marketing efforts to encourage behaviour change may be most effective when directed at stakeholders such as the media, producers, policy-makers, and retailers rather than limiting focus solely to consumers (Peattie & Peattie, 2009).
In the following section (5.2), I explain the aims of this chapter. This is followed by an explanation of the methodological approach including an overview of the sampling protocol, interviewees, and interview transcription and analysis (section 5.3). In section 5.4, I discuss the interviews and the various themes to emerge. Each theme forms a subsection which is discussed in the context of the research questions and how they advance my thesis. Finally, in section 5.5, I provide a summary and recommendations for future research.

5.2 Chapter aim

The aims of this chapter are to elucidate the perspectives of key stakeholder representatives using qualitative research methods. I expected to find different rhetoric employed by key stakeholders depending on their relationship with farming and the
economic dimension of animal farming in Australia. The interviews discussed in this chapter were conducted as a means of investigating the attitudes stakeholder groups hold towards farm animal welfare on an ideological and pragmatic level; and to postulate ways in which this knowledge can be used for joint benefit along the supply chain. This chapter provides a broader and more in-depth understanding of ethical purchasing choices, animal welfare, and the legal, social and economic framework in which the research problem exists.

I conducted nine interviews with representatives of key stakeholder groups including producers, industry representatives, retailers, animal protection groups and consumer advocates. Not all stakeholder groups were represented in the interviews; however, a vast collection of insights was collected and is presented in the following sections. The findings gathered from this research extend and deepen the insights gained from the online, mail and quasi-experimental research discussed in Chapters Three and Four.

I have structured this chapter according to the themes that emerged from the interviews and used the themes to guide a discussion of the role of stakeholders in improvements to farm animal welfare. The goal of this research was to collect data on stakeholder perceptions concerning the following six issues:

1. the role of particular organisations/stakeholders in ensuring farm animal welfare is at levels deemed acceptable by public authorities and consumers;
2. the importance of consumer awareness in reducing the suffering of farm animals;
3. the practical implications involved in the management of the stakeholders in question with regards to animal welfare issues;
4. relationships between stakeholder groups;
5. ways in which consumers play a role in animal welfare goals and outcomes; and
6. the role of government in providing high welfare standards for farm animal production.

5.3 Materials and methods

5.3.1 Background

Qualitative research methods are useful for understanding groups, organisations and the individuals within them in order to develop a deeper understanding of a research problem (Tracy, 2013). The addition of qualitative data is beneficial to the validity of the overall research design discussed in this dissertation because it provides an additional source of information and richness to the ways in which the research problems are addressed (Batson, 1990; Mason, 2002; Tracy, 2013).

Interviews are one of the most commonly used qualitative research methods because they allow the researcher to acquire a deeper understanding of the issue of interest and the perceptions and meanings prescribed by relevant individuals (Liamputtong, 2013). They also provide the opportunity for topics and ideas to arise that allow the interviewer to explore issues in great depth that might otherwise remain unexplored (Cooper & Schindler, 2003; Gray, 2014). The interviewee can explain key concepts and together with the interviewer new knowledge is generated through the analysis of rich data (Tracy, 2013). For this reason, interviews are useful for stakeholder analysis and form the basis for the methodology discussed in this chapter. Unlike the questionnaire format utilised in the previous chapters, interviews were ideal for the aims of this chapter because they allowed me to gather more detailed information about the dynamics of the supply chain implicated in animal farming systems in Australia.

Semi-structured interviews were selected as the mode of data collection because they are flexible and conversational in nature, allowing extensive discussion to take place while
still adhering to the key research interests set by the researcher (Becker et al., 2012; Cachia & Millward, 2011). This method of interviewing differs from structured interviews which are defined by their rigid nature and prone to a lack of flexibility and depth in responses; and unstructured interviews, which allow for the collection of more complex data but are subject to bias in terms of the questions and response format (Doody & Noonan, 2013).

The research methods discussed in the previous chapters were used to examine the ways in which consumers conceptualise animal welfare and how this impacts their purchasing behaviours. This chapter focuses on data gathered through semi-structured interviews from a range of stakeholders.

5.3.2 Interviewee selection

I wanted to obtain a sample of views from an array of stakeholder groups. I utilised purposive sampling, also referred to as non-probability or judgement sampling (Teddlie & Yu, 2007), because I required insight from a select group of stakeholder representatives whose perspectives could not be found through random sampling methods. In addition, a purposeful sampling method was desirable because the research design required interview data that specifically fitted the project’s goals and aims. I identified a range of organisations and stakeholder groups relevant to the research problem at each stage of the supply chain. I then emailed background information on the research and the purpose and structure of the interviews to the organisations. I invited the email recipient to nominate someone to represent the organisation in an interview.

5.3.3 Interviewee overview

A total of nine people agreed to be interviewed; eight interviews were conducted face-to-face and the ninth was conducted via email to maximise convenience for the respondent. I conducted the interviews in Melbourne, Sydney and Brisbane at locations suitable for
the interviewees. All interviewees signed a consent form and agreed to have their names and organisations published within this dissertation\(^3\). The consent form template is included in Appendix D. I categorised the interviewees according to the type of organisation they represented (Table 5.1). A brief explanation of the nine stakeholders and their respective organisations follows:

Animal Liberation — Chay Neal is the Queensland president of Animal Liberation which is a not-for-profit animal protection group that works towards increasing awareness of animal exploitation, particularly through their campaigns to encourage people to adopt a vegan diet.

Animals Australia — Glenys Oojes is the Executive Director of the animal protection group Animals Australia. Animals Australia represents 40 animal welfare organisations and lobbies on their behalf during national and state reviews of animal welfare laws and codes. They are also heavily involved in campaigning to increase community awareness of animal protection issues.

Australian Chicken Meat Federation — Andreas Dubs is the president of The Australian Chicken Meat Federation, an industry body that represents chicken meat growers and chicken meat processors. His second in charge, Vivian Kite, also participated in the interview.

Choice — Angela Cartwright is the campaigns director at this consumer advocacy organisation. Choice reviews products and services and makes the findings available to their 180,000 members and the general public.

Coles — Rob Cumine is the agricultural manager of Coles which is Australia’s second largest retailer behind Woolworths. It has over 750 stores and handles over 15 million

\(^3\) The representatives from each organisation held the position listed at the time the interviews took place.
transactions every week. Rob’s role as agricultural manager requires him to examine the standards, including those for farm animal welfare, which Coles’ suppliers adhere to and to ensure they are in line with consumer expectations.

Compassion in World Farming (CIWF) — Carole de Fraga is the Australian representative for this organisation. CIWF is a UK-based farm animal welfare charity that interacts with members of the supply chains such as farmers, suppliers and retailers to encourage improvements to farm animal welfare.

Free Range Egg and Poultry Association (FREPA) — Fred Wilson is the president of FREPA, a certification body for free range egg production in Australia. Fred is also a farmer with his own free range egg label.

PETA — Claire Fryer is the campaigns coordinator for PETA Australia. People for the Ethical Treatment of Animals (PETA) is an animal protection group that is well-known throughout the Western world for their stance that animals ‘are not ours to eat, wear, experiment on, use for entertainment or abuse in any way’ (PETA, 2017).

Voiceless — Elise Burgess is the head of communications at Voiceless, which is an Australian not-for-profit independent think tank based in Sydney. Their work focuses on increasing funding, research and legal reform in the areas of factory farming, truth in labelling, and the commercial slaughter of kangaroos.

Table 5.1 Description of interview participants

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Type of organisation</th>
<th>Interviewee name</th>
<th>Interviewee code</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Liberation</td>
<td>Animal protection organisation</td>
<td>Chay Neal</td>
<td>(AP)CN</td>
<td>President of Animal Liberation Queensland</td>
</tr>
<tr>
<td>Organisation</td>
<td>Role</td>
<td>Name</td>
<td>Position</td>
<td>Title</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>-------------------------------</td>
<td>--------------------</td>
<td>-------------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Animals Australia</td>
<td>Animal protection organisation</td>
<td>Glenys Oojes</td>
<td>(AP)GO</td>
<td>Executive Director</td>
</tr>
<tr>
<td>Australian Chicken Meat Federation</td>
<td>Representative industry body</td>
<td>Andreas Dubs</td>
<td>(P)AD</td>
<td>Director</td>
</tr>
<tr>
<td>Choice</td>
<td>Consumer advocacy organisation</td>
<td>Angela Cartwright</td>
<td>(CA)AC</td>
<td>Campaigns Director</td>
</tr>
<tr>
<td>Coles</td>
<td>Retailer</td>
<td>Rob Cumine</td>
<td>(R)RC</td>
<td>Agricultural Manager</td>
</tr>
<tr>
<td>Compassion in World Farming</td>
<td>Farm animal welfare organisation</td>
<td>Carole de Fraga</td>
<td>(AP)CD</td>
<td>Australian Representative</td>
</tr>
<tr>
<td>FREPA — Free Range Egg and Poultry Association</td>
<td>Free range accreditation board</td>
<td>Fred Wilson</td>
<td>(P)FW</td>
<td>President of FREPA and free range egg farmer</td>
</tr>
<tr>
<td>PETA — People for the Ethical Treatment of Animals</td>
<td>Animal rights organisation</td>
<td>Claire Fryer</td>
<td>(AP)CF</td>
<td>PETA Australia Campaign Coordinator</td>
</tr>
<tr>
<td>Voiceless</td>
<td>Animal protection think tank</td>
<td>Elise Burgess</td>
<td>(AP)EB</td>
<td>Head of Communications</td>
</tr>
</tbody>
</table>

### 5.3.4 Data collection

The nine interviews were semi-structured; the interviews were guided by a list of questions and topics that were to be addressed. When another topic, concept or explanation arose, the interviewee was invited to elaborate.

The core research interests are encapsulated in nine guiding interview questions:
1. What are the main ways in which your organisation attempts to reduce the suffering of farm animals?

2. How important is consumer awareness in reducing the suffering of farm animals?

3. How does your organisation try to raise awareness of intensive farming systems and their impacts on animal welfare?

4. In what ways does your organisation measure its success in raising awareness of issues associated with factory farming?

5. How do you see the efforts of your organisation in terms of animal welfare vs. animal rights?

6. Where do you seek advice on how to improve farm animal welfare?

7. How would you describe your relationship with the farming industry? (This question varied based on the interviewee i.e.; farming representative organisations/farming sectors).

8. If a farming representative — how would you describe your relationship with animal protection groups? Is it different between the RSPCA and other groups such as Animals Australia?

9. What role does authority (government) have in providing high welfare standards for farm animals in Australia?

Interviews lasted between 12 and 46 minutes; however, the two shortest interviews (with Fred Wilson and Rob Cumine) were preceded by a tour of the organisation’s headquarters. No recordings were made during these tours as they were offered with the intent to show me around the farm and head office, respectively. The tours assisted me to build rapport with the interviewees on these two occasions — a worthwhile exercise prior to commencing interviews (Liamputtong, 2013). These tours were informal in nature because they were not part of the structured interview process — notes were not taken.
during this time. I recorded the interviews using the voice recorder app on an iPhone 6 and transcribed them before commencing analysis of their content. Throughout the remainder of this chapter, the respondents are referred to by their interviewee code (shown on Table 5.1).

5.4 Analysis

I used a qualitative analytic approach that involved three stages. After transcribing the interviews, I used systematic content analysis methodology to highlight key ideas, concepts and meanings present within the data. Systematic content analysis is a commonly used approach to analysing qualitative data, including interview transcripts (Flick, 2013; Hsieh & Shannon, 2005). The content analysis of the interview transcripts was essentially an iterative process in which open coding allowed for the identification and conceptualisation of themes; thereby interpreting data and its meanings. Although I was particularly interested in the emergence of themes that were guided by the research questions — such as legislative standards, animal welfare research, consumer awareness and social issues — I was open to the appearance of novel categories from the data. I compiled a list of the categories that resulted from the open coding process and reduced them to remove duplications. From these categories, I identified five broad themes (Table 5.2) connecting each of the interview transcripts: legislation, codes and standards; animal welfare science and research; stakeholder perspectives, and consumer awareness. The last stage required use of examples from the transcript texts or outside literature to substantiate the inclusion of each code and its overarching theme into the analytic process.

5.5 Results and discussion

This section is organised around the four key themes that emerged from the interview data along with discussions on how they relate to the research aims. The main findings of this research emphasize the need for the incorporation of multiple stakeholder
perspectives when addressing the issue of farm animal welfare. Key issues addressed by the stakeholders included the adequacy and enforcement of farm animal welfare, transparency of the food production system and an agenda based on increasing consumer awareness. The four themes in Table 5.2 are presented from broad (legislation) to specific (consumer).

Table 5.2 Themes generated from the qualitative data

<table>
<thead>
<tr>
<th>Theme</th>
<th>Category</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legislation, codes, and standards (5.4.1)</td>
<td>Adequacy and consistency</td>
<td>I think there's a broader role in a democracy, in a community such as we have for governments, and industry for that matter, but particularly for governments to take into account reasonable standards and impose them across the board. AP(GO)</td>
</tr>
<tr>
<td>Consistency</td>
<td></td>
<td>Parker (2013)</td>
</tr>
<tr>
<td>Enforcement</td>
<td></td>
<td>I think there’s a key role for legislation. But I think the challenge is, there’s no point in having legislation without having enforcement. R(RC)</td>
</tr>
<tr>
<td>Animal welfare science and research (5.4.2)</td>
<td>Funding</td>
<td>There is a lot more funding for animal welfare research, both in Australia but around the world. And so, we see all those things as indicators at the higher interest and higher concern about animal welfare. AP(GO)</td>
</tr>
<tr>
<td>Five freedoms/ definition</td>
<td></td>
<td>The RSPCA believes that an animal’s welfare should be considered in terms of five freedoms which form a logical</td>
</tr>
</tbody>
</table>

176
and comprehensive framework for analysis of welfare within any animal use together with the steps and compromises necessary to safeguard and improve welfare within the proper constraints of an effective livestock industry\(^4\).

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Retailers</td>
<td></td>
<td>The power is with the supermarkets. They dictate what goes on. P(FW)</td>
</tr>
<tr>
<td>Producers/Farmers</td>
<td></td>
<td>The factory farming industry strives to maximise output while minimizing costs — always at the animals’ expense. AP(CF)</td>
</tr>
<tr>
<td>Collaboration</td>
<td></td>
<td>I’ve learned a lot here by talking to other growers, consultants, and nutritionists on the better way. P(FW)</td>
</tr>
<tr>
<td>Difficulties</td>
<td></td>
<td>It’s important that we have an open and respectful dialogue which can be hard at times on both sides. AP(EB)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consumer awareness (5.4.4)</th>
<th>Current consumer awareness</th>
<th>Consumers don’t know enough and there are a number of reasons for this. Either they don’t want to know or they’re not receptive to information about it. AP(CF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importance / relevance</td>
<td></td>
<td>If you’re talking about farm animals, we particularly try to raise awareness. That’s the key issue. AP(GO)</td>
</tr>
<tr>
<td>Challenges</td>
<td></td>
<td>I think we’re approaching a loss of confidence in the words ‘free range’ CA(AC)</td>
</tr>
<tr>
<td>Transparency</td>
<td></td>
<td>From my perspective it’s very important that information is available. P(AD)</td>
</tr>
</tbody>
</table>

\(^4\) Quote drawn from the RSPCA Australia website (http://kb.rspca.org.au/Five-freedoms-for-animals_318.html)
5.5.1 Legislation, codes and standards

The advancement and enforcement of legislation to protect animals in Australia falls under the responsibility of both the federal and state governments. Although there is federal legislation directly relating to animal care and management, as with the live export of animals and the slaughter of animals for export, there is no head of power in the Australian Constitution that solely addresses animal welfare (White, 2013). Beyond these measures, animal welfare protection falls under regulatory regimes set by the States and Territories, including through the adoption of Model Codes of Practice, which vary between jurisdictions according to whether they are fully or partially adopted, and, more recently, Australian Animal Welfare Standards and Guidelines.

Farm animals are generally exempt from cruelty prohibitions and duty of care obligations provisional upon compliance with the relevant codes of practice or standards and guidelines. This means that, in most circumstances, the regulatory standards governing the protection of farm animals lie within the codes of practice or standards and guidelines. The Model Codes of Practice developed by the Commonwealth Government address farm animal welfare for a number of species and include welfare guidelines for a range of species and for associated welfare areas such as transport. However, most Model Codes are not enforceable, and their application is left to individual States and Territories that often have different interpretations and applications (Ellis, 2010). Farm animal welfare is therefore not consistently managed or enforced across Australia.

5 The Model Codes of Practice can be found on the CSIRO website (http://www.publish.csiro.au/nid/22/sid/11.htm). Standards and Guidelines are being developed to replace Codes of Practice over time. Details can be found at Animal Health Australia (http://www.animalwelfarestandards.net.au/).

6 Transport is one of the few welfare topics already addressed in the new set of Standards and Guidelines and adopted by all jurisdictions (http://www.animalwelfarestandards.net.au/land-transport/).
The Australian Animal Welfare Strategy (AAWS) was implemented by the Australian Government in 2005 with the objective of ensuring that Australia’s animal welfare system is efficient and consistent between jurisdictions (de Witte, 2009). The strategy was a collaborative effort between the Australian Government, State and Territories and relevant Stakeholders, and an important objective was to review existing farm animal welfare codes, identify areas where they could be improved, and achieve nationally consistent implementation. The Australian Government defunded the AAWS in 2014, leaving the development of nationally consistent standards and guidelines reliant on self-directed State/Territory cooperation. Consumer attention has consistently affected the egg industry, with consumer advocacy groups and animal welfare organisations citing the highly ambiguous labels found on egg cartons as a significant source of confusion for consumers. In 2015 a new information standard was devised for eggs sold as ‘free range’ which allowed for stocking densities of up to 10,000 hens per hectare. As Carey and colleagues (2017), Parker & De Costa (2015), and Parker et al. (2017) argue, the new standard does not fulfil the demands of certain stakeholders and instead appeases the stakeholders with the strongest economic and political voices — retailers and the production industry. Given the mutually beneficial relationship that exists between the government, industry bodies, and major retailers, it is evident that consumer interests are not always accounted for in regulatory changes to farm animal welfare and food labelling policy.

A major drawback of the management of farm animal welfare is that it is not governed by statute. Suffering to farm animals can be excused as an offence against cruelty and duty of care offences if the relevant code of practice has been adhered to. This is because the codes of practice allow a range of cruel practices, particularly in the context of intensive farming (Cao & White, 2010).
The interviewees were asked to discuss their thoughts on the role of legislative authority in providing leadership in the area of farm animal welfare. By authority, I mean the bodies that govern the legal provisions concerning the treatment of livestock and also the legislative framework that determines how animal-based foods are produced, sold and marketed to consumers. This includes the provisions surrounding labelling, which emerged as a focal point of interest in several interviews.

**Adequacy and consistency of legislation**

A key area relating to the legal protections for farm animals that was discussed by interviewees was the current status of legislation relevant for the farming industry in Australia. As discussed in the introduction to this section, a major shortcoming relating to the animal welfare regulatory regime is a lack of adequate and consistent standards. The theme of regulatory consistency, or lack thereof, was addressed by one of the five animal protection stakeholders. The duty of care which must be shown to an animal is entirely dependent on the ‘use’ prescribed to it; it is therefore difficult to justify this inconsistency when some animals are allowed to undergo a larger degree of suffering because they are born into the food production industry. Several studies have established that humans hold different attitudes towards different species depending on whether they fall under the classification of companion animal, pest, or animal used for economic interests (Joy, 2009; O’Sullivan, 2011). However, the legal inconsistencies that reflect the preferential treatment of some animals depending on their relationship with humans, may not be so obvious to the average citizen. The limitations of the law to consistently protect animal welfare was articulated by Elise Burgess from Voiceless:

> Even within Australia, within every state there’s a code of practice on how you can treat a specific animal and the difference between what you can do to a dog and what you can do to a pig is one of those perfect sort of injustices that we see. For example,
pigs will often be castrated without pain relief, their teeth are clipped, and chickens are
deb-beaked which is where their beaks are sliced off, and all this can happen without
pain relief. Whereas if you did this to a cat or a dog it would be illegal. (AP)EB.

Sentience refers to an animal’s capacity to experience feelings based on their subjective
experience within their environment (Broom, 2016; Kirkwood, 2006). Feelings that can
arise may include pleasure, comfort, pain, distress, or hunger, and a sentient being will
form a behavioural or emotional response based on awareness and cognition of such
feelings and their impact (Turner & D'Silva, 2006). The above quote encapsulates the
argument for laws that account for an animal’s sentience and provides an explanation for
Voiceless’ focus on reforming and raising consumer awareness about farm animal
welfare legislation. The relationship between society’s views of animal sentience and the
ethics of intensive farming were discussed in Chapter Two.

There is also inconsistency in terms of codes of practice which act as guidelines for the
necessary or reasonable treatment of farm animals. The inconsistent use of the Model
Codes of Practice between jurisdictions makes it is difficult for the Federal Government
to represent Australia as having consistent animal welfare laws on a national level. Not
only do the codes vary in their content in terms of definitions and matters of interest, but
also the degree to which they are enforced, if at all. The specifics of codes of practice are
often the responsibility of industry members, so that subjective interests, swayed by
economic and political factors, are likely to be influential in determining their content. A
number of stakeholders addressed this issue in their interviews. For example, Angela
Cartwright from Choice stated:

I am convinced that state based legislation while welcome is not the solution because
the problem is you can’t enforce that for products from outside your state so even when
they (Queensland) had a 1,500 limit there’s plenty of eggs that are produced in
northern NSW that could be sold in the QLD market and producers in QLD were being held by a standard. So it’s absolutely critical in this issue that there is legislation but I do think it should be national legislation and the way to get that legislation is through a review of the model code so to make sure the standard is right. (CA)AC.

**Enforcement**

The issue of how legislation should protect animals arose in the interviews. As discussed in the previous section, the regimes that regulate the treatment of livestock animals are underpinned largely by voluntary guidelines and are not subject to enforcement measures. I previously stated my expectation that the viewpoints of stakeholder groups would differ. The two interview quotes below highlight the frustration felt by both retailers and animal protection organisations at Australia’s lack of a robust regulatory scheme for the protection of farm animals.

> I think there’s a key role for legislation. But I think the challenge is, there’s no point in having legislation without having enforcement. And so I think for certain parts of it there’s things like model code having been enforced and haven’t been, there isn’t consistency between states in terms of basic legislation, which just confused things. (R)RC.

Animals used for food in Australia have few legal protections. It is left to states to try to enforce their limited animal welfare laws, but this is difficult as the Primary Industries Ministerial Council has established a separate ‘voluntary’ code for the livestock industry. The recent government-commissioned report on live export found that “compliance with these codes is not mandated under legislation and they are generally written as guidelines, which are difficult to enforce”. (AP)CF.
All stakeholders, including the retail representative, argued that legislation is largely redundant without enforcement. Voiceless dedicates much of its work towards addressing the lax enforcement of existing codes. The failure to enforce codes of practice and the inconsistencies in their application, content and interpretation across Australian jurisdictions represents a major obstacle to meaningful improvement of farm animal welfare.

*Labelling*

Labelling standards were discussed by a number of interviewees, notably the consumer advocacy group, Choice, whose work focuses on ensuring consumers are not misled when selecting products. The ACMF representative felt that ‘more uniform and clear labelling’ would be well supported by industry members (P)AD. Competition between different suppliers was cited as a primary argument for the introduction of standardised and uniform labelling legislation. The term ‘free range’ may be used haphazardly to take advantage of growing consumer sentiment for products that promote a certain ethical virtue which has established itself as part of product identity in the last several years. Despite the argument by ACMF for more stringent legislation and enforcement, they admitted their role in misleading the public through incorrect product labelling in the case where the Australian Competition and Consumer Commission ordered them to pay $20,000 in penalties after two major chicken processors were found to have deceived consumers by engaging in conduct suggesting that chickens produced by them were ‘free to roam in large barns’.

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Due to a lack of legislation supporting a nationally recognised standard at the time the interviews were conducted, the term ‘free range’ has the potential to lose meaning entirely. As Angela Cartwright stated:

…the free range claim currently means something to consumers. They shouldn’t have to become an expert in questions of stocking density when choosing a product, they should simply be able to trust that the term ‘free range’ means something. The fact that the term has been adopted and applied to some products doesn’t mean consumers should become an expert. It means there should be effective and enforceable national standards and the standards should be enforced so consumers can be confident that the term free range means what they think and they can choose accordingly. (CA)AC.

All nine stakeholder representatives agreed that the legislative framework that supports farm animal welfare standards needs improvement in Australia to protect the interests of animals, consumers, producers and retailers. A number of limitations that make such changes difficult to implement were identified. Several of the animal protection groups spoke about the influence of industry on government decision-making and the reluctance of the state-level governments to communicate with animal protection groups other than the RSPCA. Standards and guidelines may be weakened or fail to improve animal welfare due to pressure from industry groups. Despite this, the production representatives agreed that consistent legislation and labelling laws are important for the interests of both consumers and farm animals.

5.5.2 Animal welfare science and research

The field of animal welfare science has developed on a global scale in recent years and the level of communication between researchers and other stakeholders, particularly retailers, producers, and policy-makers has increased concurrently. Funding towards
research into the environmental conditions that provide optimal welfare outcomes for farm animals has increased, and scientific attention and the message of animal sentience is spreading among consumers and citizens (Broom, 2011; Dawkins, 2006; Miele et al., 2011; Ohl & Van der Staay, 2012).

Research/funding

With the growing demand for animal-based foods — often to the detriment of animal welfare — comes a need for scientific research on the ways negative animal welfare impacts can be reduced whilst still ensuring consumer demand for affordable animal-based food is met. It was evident from the interviews that all stakeholders have a perspective on, and subjective definition of, animal welfare. The increase in funding for animal welfare research is perceived as one of many indications that interest and concern for animal welfare among the public is more widespread than ever before. This belief was elucidated in the interviews by an animal protection representative. While the increase in funding was perceived by Animals Australia as a generally positive move, Andreas Dubs from ACMF provided specific details on the research and development program within their organisation. However, there is concern among credible figures about the accountability and scientific objectivity of animal welfare science research. The co-regulatory model for animal welfare — whereby control is shared between government and industry — is cause for concern among animal protection organisations and some consumers. Animal welfare science research funded by the farming industry presents a conflict of interest to scientists, who may feel pressure to present only findings congruent with the interests of producers to protect the longevity of funding opportunities. Industry can also exert authority over research, with the objective of maintaining the financial viability of production methods, as opposed to a purely animal-centric approach (Phillips, 2013; Phillips & Petherick, 2015).
Outcomes

The practical outcomes of animal welfare research were discussed by a number of interviewees. The quote below from an animal protection representative highlights the link between science and perceptions of animal welfare:

Our other area is, because we’re a think tank we really look into research reports, scientific reports to basically try and underpin...like for so many years the science has almost been separating humans and animals where we have been working with a really excellent group of scientific experts from around the globe who research into farming practices and their impact on welfare some research into sentience. Really key things so that we can sort of create a stronger link between what people once saw as a pig who could just be lunch to an actual animal, a creature who feels the same pain and suffering as we do and that should be acknowledged in the laws and how we treat them.
AP(EB).

In addition to highlighting the link between science and perceptions of animal welfare, the above quote from the interview with Elise Burgess indicates the role of stakeholder collaboration in driving improvements to farm animal welfare. It is also apparent that the work of Voiceless as both a think tank and an advocacy organisation is to initiate a cultural shift in citizens’ conceptualisation of animal sentience as opposed to the pragmatic considerations of industry groups such as the ACMF:

Just to give a demonstration of that, the general public would focus on density of birds in the shed as that’s a major issue for them but they wouldn’t necessarily think of temperature control as major issue. In fact, from the bird’s perspective, temperature is probably at least as important as how many birds are in the shed. And so some things
don’t really rank, doesn’t even figure on the screen of the general public but are very important for the birds. P(AD).

Andreas’ quote (P(AD), above) outlines some of the direct benefits that result from research into animal welfare which may not be understood by the general public. This ties into the topic of consumer awareness and misconceptions, addressed in the section on consumers later in this chapter.

The five freedoms

The ‘five freedoms’ form a cornerstone of our modern understanding of animal welfare (as referred to in Table 5.2). They were originally developed in 1965 by the Brambell Committee in response to the need to address the rights of animals used for human benefit (Taylor, 2013). While the application of the five freedoms is primarily based on an acceptance of animals as a means to provide value to humans, they are intrinsic to the ideologies of a number of animal protection groups such as the RSPCA\(^8\) as well as the retail giant Coles. As the agricultural manager for Coles stated during his interview, the standards Coles adheres to for their high welfare products seek to “respect the five freedoms”. This is in part due to Coles’ collaboration with the RSPCA ensuring their endorsement on production standards for chicken, pork and egg products. The five freedoms have been expanded, discussed and analysed through a number of research endeavours since their inception. Given they focus on “freedom from”, there is a growing concern with including positive welfare states as worthy of consideration, rather than simply the exclusion of negative states (Appleby, 1996; Mellor, 2014; Ohl & Van der Staay, 2012). Surprisingly, the five freedoms were not discussed by any other interviewees. Stakeholders value animal welfare in various ways based on how their

\(^8\) The RSPCA identifies the five freedoms as part of their ideological framework (http://kb.rspca.org.au/Five-freedoms-for-animals_318.html).
group is impacted by improved animal welfare standards (Bracke et al., 2005; Verbeke, 2009b).

5.5.3 Stakeholder attitudes to animal welfare

As Bracke et al. (2005) noted in their qualitative stakeholder analysis, the perspectives of different stakeholder groups vary according to their role in the supply chain and this in turn impacts the feedback mechanisms and communication required to improve farm animal welfare. The interviews sought to establish the relevance of an improvement in farm animal welfare for the interests of the stakeholder groups, but also to ascertain the relationships both within and between stakeholder groups. While stakeholders differ in their approaches, motivations, and intentions to address animal welfare, there are clear overlaps where collaboration can be effective. It has also been shown that effective stakeholder collaboration can deliver optimal animal welfare outcomes through the shared responsibility and vision for animal welfare initiatives in the future. Within this section I discuss the attitudes of animal protection groups, retailers, and farmers/producers towards animal welfare and its importance. I also discuss the efficacy of collaboration between stakeholder groups as well as difficulties and tensions that arise when stakeholders have competing interests and motivations.

Animal protection groups

I obtained interview data from five representatives of the animal protection industry, who provided insight into how their respective organisations work towards increasing consumer awareness and improving farm animal welfare in Australia and on a global scale. All five interviewees from the animal protection field spoke to the importance of raising awareness of the animal farming industry. I ascertained that much of their work is underpinned by a belief that, if consumers knew more about animal farming, they would
be motivated to change their behaviour to be more in line with the beliefs of animal protection groups. Animal protection groups carry out their work in several ways which are summarised through the following interview excerpts:

We represent 40 animal welfare organisations. And so we lobby on their behalf and represent them on their behalf, particularly during national and state review of different animal welfare laws and codes and such things... We also work as a campaign organisation, so in other words, campaigns to particularly to raise community awareness and to lobby politicians and others to change laws but also particularly practices and attitudes and opinions. We conduct community awareness campaigns through advertising, but also through the free media, through information providers to supporters and such things. AP(GO);

And

One of the main ways that we’ve done for a long time and continue to do is vegan outreach so getting out in the public with printed materials and trying to educate people about where animals come from. Also trying to get the public to appreciate the truth about intensive farming these days. AP(CN).

PETA is well known throughout the world for its campaigns which are often controversial in nature and often use celebrities and public figures to raise awareness. For many people, PETA is associated with shocking images of animal suffering, and the animal rights organisation often attempts to diminish the public’s trust in certain brands and companies (Henard, 2002; Scuddler & Mills, 2009). In 2016, over US$16 million was spent on public outreach and education; this was more than any of their other operating expenses for the organisation on a global level (PETA, 2016).
PETA Australia works through public education, cruelty investigations, research, animal rescue, legislation, special events, celebrity involvement, and protest campaigns. AP(CF).

In comparison to PETA, Voiceless takes a more academic approach to promoting animal welfare issues. Rather than sharing graphic imagery, the organisation develops education toolkits, reports, and presentations as a means of providing credible information to the public (Voiceless, 2017).

Voiceless is a not-for-profit independent think tank. So, our focus is on animal protection and specifically on factory farming and the commercial slaughter of kangaroos [through legislative reform]. AP(EB).

Similarly to Voiceless, Compassion in World Farming aims to increase public knowledge of animal welfare issues alongside their work on undercover investigations, political lobbying, and collaborating with food businesses to improve welfare (Compassion in World Farming, 2017a)

[CIWF works by]… campaigning at ground level but by making consumers more aware and getting them to demand from their supermarkets for example to stock high quality products so that became increasingly important part of CIWF’s work and working also with producers and farm animal producer associations particularly in Europe and the EU. AP(CF).

From the above interview excerpts it is clear that animal protection groups have a strong focus on farm animal welfare and utilise multiple strategies to improve farm animal protection, including campaigning, lobbying, legal reform and consumer outreach. It is evident that successful animal protection organisations utilise strategic targeting of particular issues for maximum impact. For example, Compassion in World Farming’s
Food Business team works directly with retailers, suppliers, and food companies to improve standards for animal welfare along the supply chain. While recognising the importance of public awareness, the organisation has realised the potential of encouraging food businesses to engage in farm animal welfare issues, and this has benefited over one billion animals (Compassion in World Farming, 2017b). The animal protection organisations varied in the importance they assigned to a multidimensional campaigning approach (e.g., incorporating legislative change, market forces, and public engagement), however all five interviewees believed in the need for increased consumer awareness of modern farming methods.

Retailers

Large retailers such as Coles and Woolworths have not let the rise in consumer awareness and concern for animal welfare escape their attention. Collaboration between retailers and other stakeholders including suppliers and animal welfare organisations has shifted some of the onus of welfare assurance schemes and monitoring to the retailers, who set buying specifications based on welfare standards (Mench, 2008). Initiatives of this nature, where a deficiency in regulation is overshadowed by information provision, is economically advantageous for consumers wishing to put their dollar to good use (Parker et al., 2013). Elise Burgess from Voiceless spoke about the changing direction due to consumer pressure:

A perfect example of that is what we saw with Coles and Woolworths. The fact that Coles and Woolworths now, their own brand is free range only, for chicken eggs and pig meat; they would have done that because consumers were demanding it. And that alone is really significant. AP(EB).

The shift towards retail-driven regulation was also mentioned by Fred Wilson of the Free Range Egg and Poultry Association: “…of course, the power is with the supermarkets.
They dictate what goes on, if they say ‘well this is the standard we’ll put out’, somebody goes and produces them to their standards.”

Producers/Farmers

At the bottom of the food supply chain are the producers and farmers who operate under increasing pressure to supply vast quantities of consumers with quality, low cost food. As part of the interview process, I was afforded the opportunity to uncover the relationships between the stakeholders. An example of this is the expectation of Coles to set standards for its suppliers and the effect this may have.

But the farmers who work with us largely believe in what we’re doing. They have a choice at the end of the day, we’re not forcing farmers to become RSPCA-approved for chicken, so I think the suppliers [with whom] we have a close relationship are the ones that wouldn’t do it. R(RC).

The above interview quote signifies the perception retailers may hold of the farming industry; in that, although retailers may upgrade their standards for animal welfare, it is not necessary that the farmers agree to partake in the upgrade of welfare practices (Healy, 2017). The free range farmer, the representative of FREPA, and also the representative from the ACMF, all emphasised the importance of animal welfare to farmers from a personal and professional perspective. That is, “farmers of chicken meat actually have a very strong involvement with animal welfare because it’s their birds. They own the birds right from the start.” P(AD). This is in stark contrast to the perspective of Claire Fryer from PETA, who expressed concern that animal welfare is secondary to the economic interests of farmers and producers. By definition, producers must view their animals from a perspective based on productive capacity. FREPA’s statement that ownership of birds guarantees the protection of animal welfare requires validation; it also links to how FREPA defines animal welfare.
Collaboration

Several interviewees discussed scope for collaboration between stakeholders. As a consumer advocacy group, Choice is focused not on animal welfare, per se, but rather on ensuring that retailers accurately promote their products so that consumers are not misled about the production of certain food items; in particular, the terminology surrounding the free range label. The quote below indicates the strong role of collaboration in Choice’s work.

I think we don’t have a view of what free range should mean but we talk a lot with industry groups to try and understand their perspectives. We’ve had an interesting dialogue with the egg corporation…interest groups in different areas, [and other] companies to try and get their perspective(s). In the case of free range, we speak to RSPCA, Voiceless, humane society but we don’t necessarily endorse what any of the groups say. It’s really just for our own information and our interest is purely because our research has shown quite clearly that there is a consumer interest and beyond our research, the market itself says 40% of consumers are interested in the issue. So, in deciding what we advocate on, we essentially look for issues that we believe there is consumer detriment, whether [it] affects a substantial population of people, and if we have the opportunity to make a difference. CA(AC).

The animal protection groups reported a high level of communication and collaboration between groups when the goals of a specific activity are similar and would benefit from joining resources. As mentioned in the previous sections, Coles also collaborates with producers and the RSPCA to deliver free range meat and egg products to consumers.

Difficulties/Tensions between Stakeholder Groups
Difficulties in collaboration between the stakeholder groups are expected when goals and economic incentives do not align. The resulting tension between stakeholder groups was mentioned by several interviewees. In particular, communication difficulties stemming from the vastly different approaches between groups can encroach on the progress made by individual groups, as well as the wider progress that requires collaboration between these groups.

As a consumer advocacy organisation, Choice communicates directly with industry bodies to ensure that the general public are not misled about specific product attributes. A large part of Choice’s work in recent years has been a focus on examining the credence claims of producers of animal-based products, particularly poultry and eggs. To produce a number of reports on organic and free range eggs, Choice has consulted with numerous representatives from industry and animal protection groups.

Another source of tension or a lack of communication may arise between stakeholders when an organisation or a stakeholder representative perceives another group as being motivated by misguided beliefs. An example is Coles’ decision to collaborate with RSPCA for the labelling of certain animal-based foods. Coles acknowledges that it may be able to develop products that meet the standards of RSPCA “…whereas for other organisations, depending on their motives, [we] might not ever achieve their standard…”.

Similarly, Andreas Dubs from ACMF is dismissive of the messages sent out by certain animal protection groups:

In a sense our position is more difficult than the position of somebody like Animals Australia in that we can’t be emotive — we have to be factual (Miele & Evans, 2010). And so, it’s often more difficult to get messages across when you’re factual than when you can pick out a particular emotive theme and ignore the rest. That’s one of the
difficulties I suppose and that’s how we are different from the other side [(animal protectionists)] so to speak. (P)AD.

The above quote highlights the strained relationship that can exist between and production industry and animal protection organisations. Andreas’ remark indicates a discrepancy between what he believes the ACMF can do to promote their work (‘we have to be factual’) as opposed to ‘emotive’ strategies employed by groups such as Animals Australia. Te Velde and colleagues’ (2002) conducted in-depth interviews with livestock farmers and consumers, and found ambivalent attitudes towards animal welfare in both groups. The authors suggest farmers and consumers both employ various coping strategies to deal with uncomfortable feelings resulting from discrepancies between values and behaviours. Such strategies can include shifting responsibility and misrepresentation. It is possible that the defensive views of the Chicken Meat Federation reflect an attempt to shift responsibility onto animal protection organisations. Producers and consumers have a different frame of reference which can explain why their perceptions differ (Aarts, 2002; Vanhonacker et al., 2008). It is important to recognise the shared values and beliefs between producers and other stakeholders, and develop a strategy to overcome problematic variations in beliefs.

5.5.4 Consumer awareness

As presented in the Literature Review (chapter 2), it is well established that consumer demand is increasingly a driver of changes in the market share of higher welfare animal products. Consumer awareness and knowledge of farming systems, labelling standards, legislation and product options were widely discussed in the interviews. As guided by the interview questions, interviewees considered consumer awareness in the context of importance and relevance. They were invited to share strategies for increasing awareness that their organisation may employ including marketing, use of social media and
lobbying. Interviewees also discussed the ways greater transparency in farming systems may alleviate problems associated with consumer trust and concern for animal welfare.

The value of transparency as a tool for improved consumer trust was agreed by the represented stakeholder groups, and has been acknowledged widely in reviews on stakeholder attitudes. This view is underscored by a need for transparency in the farming industry and an assurance that credible information be made available to all who seek it.

**Current consumer awareness**

Several interviewees referred to the fact that Australian consumers are generally out of touch with modern farming systems and this can act as a barrier to encouraging behaviour change. Carol de Fraga from Compassion in World Farming stated:

> Consumers don’t know enough and there are a number of reasons for this. Either they don’t want to know or they’re not receptive to the information about it, about farm animals. Although there are a lot of people who do take notice but I think they could know more. Then it’s difficult to get the info to them because the producers don’t want to be too honest, governments are not going to do anything so it’s up to animal welfare organisations that are then criticized by producers. (AP)CD.

This statement encapsulates a number of issues that will be explored in this section; however, it begins with the important acknowledgement that consumers do not have a strong connection with the food production system (Ryan et al., 2015; Vecchio & Annunziata, 2012; Xie et al., 2015). Glenys Oojes from Animals Australia shared this sentiment:

> We don’t believe that most community members, certainly most consumers, know how agricultural products are produced; that is, know how animals are farmed and sorted. And so we feel we need to first increase awareness, increase knowledge in the
community and then therefore have consumers make more compassionate choices, kinder choices through knowledge. We’ll also extend on that to talk with retailers, with animal producer groups, farmers directly, and with the representative bodies and with government. AP(GO).

Not only does the above quote encapsulate the recognition that consumers require more awareness about farming, it also affirms the diverse strategies employed by Animals Australia and the importance of stakeholder engagement. It is not just animal protection groups who share the belief that consumer awareness is lacking. Andreas Dubs from ACMF stated that:

…we tend to overestimate what people actually know about the industry. I think it’s pretty basic that the general public, not everybody, but the majority of people don’t think much about what we’re doing and when they do they have very little idea about what we are doing and what is important. Whether an increase in awareness would have a negative effect on the public’s perception of farming may be a point of difference between the farming industry and its representatives and the animal welfare organisations who work to increase awareness from the perspective of improving animal welfare and labelling standards. (P)AD.

Two interviewees commented on a rising interest in animal welfare issues among consumers. Fred Wilson from FREPA commented that people are becoming more aware of the “factory farm” model and this will drive a demand for more humanely produced products. Glenys Oojes from Animals Australia also agreed that more people are becoming aware of modern production systems, and this heightened awareness is creating a shift in consumer preferences.

*Importance of consumer awareness*
All interviewees strongly agreed that consumers should have an adequate understanding of food production and the meanings behind product labels. Below is a collection of direct quotes from each of the interviewees summarising their perception of the importance of consumer awareness.

From my perspective, it’s very important that information is available. To have it clearly on the website so if people want to know what free range is and what this is people can find it on our website. P(AD).

Consumer pressure will drive the ethical treatment of animals. P(FW).

Consumer awareness is, it’s key to us making, you know, making part of the decisions. Part of the decisions we make because it’s the right thing to do, but one of the reasons we will do it as well is, customers actually want to buy products that are more ethically and responsibly sourced and our research has shown us that customers want to do that, they expect us to do it as well. As a large organisation and brand there’s an expectation that we’re doing the right things and we’re not misleading customers. R(RC).

I think it’s fair to expect that consumers who are buying free range products are primarily motivated by the welfare of the animals. CA(AC).

If you’re talking about farm animals, we particularly try to raise awareness. That’s the key issue. AP(GO).

Consumer education is vital if we want to have that long-term change because the consumer dollar is all powerful really. If consumers are demanding free range or better welfare standards, industry, retailers, government are going to have to supply it because it’s supply and demand. AP(GO).

More and more people are discovering the benefits of a compassionate, plant-based diet as they choose not to support the horrors of factory farming. AP(CF).
I think that’s [consumer awareness] the most important. AP(CN).

I think [consumer awareness] is extremely important because without consumer awareness and consumer driven demand, producers have no real incentive to raise the conditions. AP(CF).

The reasons given for why consumer awareness is important varied between the stakeholder representatives; however, interviewees often noted that improvement in animal welfare goes beyond making ethical choices based on animal welfare information. Compassion in World Farming believed that consumer driven demand is necessary in order to prompt producers to improve farming. Other stakeholders discuss the complexity of how improvements can be brought about beyond the limited framework that producers currently work within. That is not to discredit Compassion in World Farming’s view that, without the demand for higher welfare products, food production will subsist on the most economically viable option, which is often at the expense to animal welfare. To demonstrate the power that consumers hold in the food system, Compassion in World Farming cited the voluntary phasing out of sow stalls in Australia, which “was due primarily to lobbying organisations and consumer demand”. Fred Wilson from FREPA shared strong views on consumer influence on the supply chain. He stated that consumer awareness could potentially see the end of the factory farm model. A difficulty is encountered when the label does not match the consumer expectation of what that label should represent. Fred’s experience as a free range egg producer has made him aware that consumers are “starting to wake up that they’re being duped”; that is, although they are concerned and engaged in the issue, they have encountered problems in trusting that product labels are accurate.

Elise Burgess from Voiceless also spoke about the power of consumer awareness through their capacity to figuratively vote with their dollar. As she put it: “consumer education is,
I think, vital if we want to have that long term change because…the consumer dollar is all powerful really. If consumers are demanding free range or better welfare standards, industry, retailers, government are going to have to supply it because it’s supply and demand.”

Angela Cartwright, from Choice suggested that consumers are becoming more aware and are therefore making purchasing decisions based on their awareness and subsequent concern for animal welfare.

I think 40% of the market, so 40% of consumers, are trying to buy these eggs predominately for welfare reasons and I think we can all agree, well we might disagree on what standards should be but the main purpose for having the standards and having meaning in the word free range is consumers being informed and confident in the meaning of those terms and I think animal welfare groups work on the condition that with standards and consumers continuing to purchase these products there will be better outcomes for the chickens. CA(AC).

Cartwright highlights that in order for people to change their behaviours they must first become aware of the issues before deciding to change their consumption habits. The power of consumers to demand foods that are produced with higher welfare standards was recognised by all stakeholders, including Andreas Dubs of ACMF. In her interview, Cartwright explained: “Free range has increased from 2–3% four or five years ago to about 15% or possibly more than that now. That’s entirely driven by consumer demand, I mean it wasn’t driven by the industry”.

Similarly, Rob Cumine from Coles recognised the power of consumer awareness as a key determinant in dictating what products Coles’ stocks and the welfare standards it expects of its suppliers. Rob stated the intention of the retail giant to avoid the endorsement of unnecessary suffering and maintain traceability throughout the supply chain. The
relationship between retailer and consumer is important and involves mutual expectations, particularly with regards to ensuring options are available for “ethically and responsibly” sourced products.

Major retailers in Australia are investing in research into consumer preferences and concerns as well as the practical ways in which animal welfare science and collaborations with groups such as the RSPCA can be used to provide consumers with high welfare options and build awareness of farm animal welfare issues. Elise Burgess from the animal protection group Voiceless believes that consumer awareness of farming practices is “absolutely critical”:

Voiceless hasn’t had a major consumer focus aside from our reports or our media work but I think essentially a lot of the change is going to come from consumers. A perfect example of that is what we saw with Coles and Woolworths. The fact that Coles and Woolworths now, their own brand is free range only, for chicken eggs and pig meat; they would have done that because consumers were demanding it. And that alone is really significant. AP(EB).

All interviewees agreed that it is critical that consumers have adequate access to information on farming practices; however, there was no consensus on how important that information is for behaviour change by consumers in purchasing animal-based foods. There are multiple challenges to allowing consumers greater access to information on farming practices, and additional barriers to enacting behavioural change by consumers. The subject of these barriers were raised by several interviewees. Subsequent sections in this discussion deal with the problems that arise when consumers lose trust in labels and the integrity of claims made by various stakeholders within the supply chain. This includes challenges, transparency, and consumer trust.

Challenges
An important issue explored in the interviews was the limited effect of consumer awareness in bringing about improvements to farm animal welfare. A number of reasons were cited by the stakeholders for why consumers may not want to become more involved with the issue and why their concern may not translate directly to the animals involved.

Chay Neal from Animal Liberation QLD expressed frustration that although 95–98% of consumers are against animal cruelty, the percentage of people who follow a vegan diet is less than 1%. "It’s getting people to bridge that gap and say, ‘well you’re against animal cruelty but you pay for animal cruelty to be committed basically’". This sentiment is predicated on a view that eating any animal-based foods is in direct support of animal cruelty.

Trust in the meanings of labels is also an important issue when it comes to understanding consumer decision-making. Coles measures consumer trust because it is an important factor in how they evaluate their success with consumers. Consumer access to information on Coles animal welfare policies is important to the reputation of their brand. When this trust is missing it leads consumers to shop elsewhere, as Fred Wilson from FREPA described:

I do farmers’ markets and that’s where I get some good feedback because I actually speak to the consumers more so than when we put them on the supermarket shelf. The feedback I get there is that most people don’t believe the propaganda. They tell me that they won’t buy eggs from the supermarket...they buy them from the farmers’ market but there’s not enough of us small farmers around to supply the numbers. (P)FW.

Choice shares the sentiment that consumers should be able to trust in the ideals that animal-based foods promote through their labels and packaging. As noted above in a different context, Angela Cartwright stated:
...the free range claim currently means something to consumers, they shouldn’t have to become an expert in questions of stocking density. When choosing a product they should simply be able to trust that the term ‘free range’ means something; the fact that the term has been adopted and applied to some products doesn’t mean consumers should become an expert. (CA)AC.

Simply increasing the availability of information and launching appeals to increase awareness does not guarantee that consumers will change their buying behaviours to support higher welfare products. Carol de Fraga suggests that the effect of providing animal welfare information is limited by consumer receptiveness; consumers are resistant to taking on information that could cause an internal conflict resulting from dissonance between attitudes and behaviours. This phenomenon has been widely reported, and is not solely applicable to consumers. Producers and farmers may also reject or avoid information that contradicts their beliefs (Te Velde et al., 2002; Williams, 2008).

Another issue that arose from the interviews was how consumers conceptualise animal welfare information. Much of the content of livestock standards and accreditation schemes is guided by animal welfare science, which some stakeholders feel is a difficult subject for everyday consumers to adequately understand. Andreas Dubs from ACMF says “those [who] want to know should be able to get hold of that information so I think it’s really important to have clear labelling... It’s probably a minority of people who will want to make a judgement and a decision based on that sort of information”. Overall, however, Andreas was quite dismissive of the need for consumers to be made aware of minor details regarding farming practices. Beyond this, Andreas claimed that:

To say we would all be better off if everybody knew everything is probably not necessarily true. I mean, most of us drive cars and haven’t got a clue how a car is put together. It makes no difference I mean peoples’ lives are no better or worse for that.
There’s a tendency for everybody whichever industry they are in to think that everybody ought to know the good or important things we do. I don’t think that’s realistic. P(AD).

So, while the position of ACMF is that it is important for information on labelling and production standards to be easily accessible, Andreas believes the majority of consumers will not care nor be in a position where they can comprehend the information. Furthermore, Andreas spoke about animal welfare issues in the context of ‘real’ issues as opposed to those that have entered the public’s consciousness. Overall, Andreas’ input suggests that consumers do not know enough but even if they did have an increased awareness it might not change behaviour on a fundamental level.

Chay Neal from Animal Liberation commented on the discrepancy between the general public’s objection to cruelty and their reluctance to adopt a vegan diet, and to some the gap between this attitude and vegan behaviour is a significant cause for concern. Glenys Oojes from Animals Australia expressed the view that if consumers knew the truth about farming practices, they would be morally obligated to not support those practices:

I don't think most people, sorry, I do know most people don't know a lot about agriculture. It's interesting that some agriculture industry leaders think that lack of knowledge by city people, by metropolitan people, by urban people, is something that they need to address as well. But I think that they'll be sadly mistaken if they think that community members will then support many of the practices if they do know about them. So, I think there's misunderstanding there, you know you could speak to agricultural leaders and they will tell you they think that urban people need to also be better informed. I think there’s a surprise if they were, then they'd be less likely to support many practices. (AP)GO.
Glenys’ thoughts highlight the contrast between the views of Animals Australia and those of the industry body ACMF. It also reiterates the need for cooperation and communication between stakeholders and within subsections of the supply chain. However, the views of different stakeholders may be irreconcilable. As has been addressed in other studies, the information that consumers have available to them is shaped by a number of issues and is subject to a conflict of interest between stakeholders (Bergstra et al., 2017; Bracke et al., 2005; Miele et al., 2013).

Transparency

Transparency in farming was cited by a number of interviewees as not only a fundamental objective for their organisation, but also an ongoing process and part of their core ideology. Voiceless’ general mission statement encapsulates, stating they aim to “create an informed world where animals are treated with respect and compassion and consumers have a real transparency with the way food is produced” (voiceless.org.au).

All the respondents cited a lack of awareness as negative, and emphasised the importance of increased consumer understanding of farming systems given that much of existing consumer awareness is built on false or misunderstood information. Andreas Dubs, from ACMF, and his second in command, Vivien Kite, discussed the prevalence of myths or misconceptions regarding broiler welfare. As an example of a common misconception, Andreas Dubs explained that the majority of people believe cages are used in broiler chicken systems when in fact they are not used at all. For example:

So, I suppose there is a great deal of misunderstanding of what actually is happening and when you talk about consumers being confused; I’ve had people call me up and say ‘I will never buy conventional chicken I will only buy organic because I don’t want chickens from a cage’ now there are no cages for chicken so that’s certainly not
a reason to buy organic. There may be other reasons to buy organic but that’s not [one of them] ...(P)AD.

The above quote signifies the measures some consumers may use to indicate their discomfort with a piece of information, whether true or not, regarding the treatment of farm animals. This feedback is important because it indicates that consumers are willing to not only change their behaviours based on information, but they will also communicate their choices with others and spread their disapproval of such industry standards and practices. For the producers, farmers, and industry bodies such as ACMF, this may create work to correct these misconceptions whilst promoting their welfare research and desired improvements. However, based on current knowledge on the attitude-gap it is evident that how people respond to information is not necessarily indicative of how they behave as consumers. Andreas’ views regarding chicken stocking density suggested one area requiring improved understanding. He felt consumers overlook or remain unaware of some measures to ensure the welfare of chickens while remaining focused on other issues that are equally, if not less, important.

The rights of consumers and the relevance of transparency as an animal welfare issue (Hoogland et al., 2005) were discussed by Angela Cartwright from Choice. Choice is an important organisation involved in the debate because it engages with the government, media, other advocacy groups, and consumers, thereby acting as a hub for unbiased information on products, services, and advocacy issues. Of notable relevance to animal welfare awareness is Choice’s work on free range labelling of chicken and egg products in Australia⁹. Choice conducted a members’ survey in 2012 that established consumers as very interested in buying free range eggs (CHOICE, 2012). The findings of this survey corroborated views shared by Andreas Dubs of ACMF, who believed that consumers

⁹ See also related research findings by Vecchio & Annunziato (2012).
have little understanding of the spatial requirements and preferences of laying hens. Despite 65% of respondents of the Choice survey claiming to not know the desirable stocking density of hens, “virtually no one thought it should be 10,000 or 20,000” (CA(AC)). Although Andreas maintains that information on animal welfare issues such as stocking density is available, he acknowledges that it can be difficult for consumers to understand the information. Andreas offers an example:

We had a court case where learned people looked at things like density and they had terrible trouble understanding. We talk about density in terms of kg per square metre because obviously if you have little chicks, 20 of them on a square metre, they have lots of space but if they are 3kg they don’t have much space. So obviously it makes sense to look at them as weights. Lawyers had terrible trouble getting their mind around this concept. (P)AD.

Andreas also stated that consumers may fail to recognise the different ways in which producers accommodate farm animal welfare. For example, in the case of chickens raised for their meat, there are benefits to intensive farming systems that may not enter the consciousness of the average consumer because they are not featured in marketing material set out by animal protection groups.

**Consumer trust**

There is some overlap between consumer awareness and the labelling issues addressed earlier in this discussion. That consumers are losing trust in a number of stakeholders’ credence claims is increasingly apparent, and this lack of confidence could potentially seriously compromise demand for high welfare products. The term ‘free range’ has been scrutinized heavily in the media in recent years. Numerous studies have indicated a widespread plague of confusion among consumers, many of whom pay premium prices for animal products based on a desire to support high welfare products (Brom, 2000;
Jokinen et al., 2012). Angela Cartwright from Choice claims “we are approaching a loss of consumer confidence altogether in the words ‘free range’”.

5.6 Limitations and future research

There are two main limitations associated with this study. As there were only nine interviewees, the discussion and conclusions drawn from their analysis is based on perspectives from a small sample size. Of the nine interviewees, five were representatives of animal protection groups. Future research may benefit from the perspectives of a larger and more diverse sample, including multiple representatives from the separate stakeholder groups. This would allow insight into the variance within stakeholder groups as well as between groups. While the number of people interviewed was sufficient for the purpose of this dissertation, expanding the number and type of interview subjects to include insight from policy makers, government, and additional farming bodies would allow for more diverse viewpoints and a more in depth understanding of the subject.

5.7 CONCLUSION

Considering investor’s perspectives and understanding of factory farming is important in the light of the current knowledge gap among investors about the potential risks of factory farming. A report by the Farm Animal Investment Risk and Return Initiative (FAIRR) identifies a strong case for why the investor community should consider the many risks associated with factory farming, with particular emphasis on animal welfare, governance, and environmental issues (FAIRR, 2016). Despite the limitations identified, the findings in this chapter were important for my thesis. Four key themes were identified - legislation, codes, and standards; animal welfare science and research; stakeholder attitudes to animal welfare; and consumer awareness. Examination of each of these themes indicates opportunities for increased awareness and support for animal welfare improvements enacted by the farming industry. The issues identified can impact the food sector at all
stages of the food chain and the financial effects are likely to be further enhanced alongside the rise in consumer interest in farming.
6.1 Introduction

In this dissertation, I have discussed the results of three inter-related studies I conducted to examine consumer attitudes to and awareness of farm animal welfare. Having an understanding of consumer attitudes is important for developing product options that align with the preferences and expectations of the general public. The implementation of improved animal welfare standards — either through enhanced government regulation or through product certification schemes — relies on an appreciation of how consumers perceive farming and whether there are areas of concern that can be addressed.

In response to existing consumer concern for animal welfare there is an emerging market for higher welfare animal-based products. It is important to know whether consumers are aware of such products and if they are motivated to make an informed choice when selecting foods that align with their values. In this dissertation I have collected, analysed and discussed empirical consumer data and this has allowed me to make recommendations based on my findings. Of course, consumers do not make purchasing decisions independent of social, political, and legislative influences. For that reason I interviewed key stakeholders to gather insight into their motivations and role in creating higher welfare animal-based food options available to the public. In this chapter I present an overview of my findings (section 6.2) and discuss their implication for theory (6.3) and practice (6.4). I also elaborate on potential limitations (6.5) of the research I carried out and identify opportunities for future research (6.6).
6.2 Main findings

This dissertation was designed to address the following five research questions through quantitative and qualitative data collection methods:

1. What level of awareness do consumers have of animal production and animal farming?
2. What attitudes do consumers hold towards the treatment of farm animals in Australia?
3. What are the relationships between consumers’:
   a. Behaviour (in the form of diet and product choices)
   b. Concern for animal welfare
   c. Awareness of animal welfare
   d. Attitudes
   e. Social environment and perceived behavioural control
4. What effect does the provision of information have on consumers’ awareness, attitudes, and behaviours?
5. What are the attitudes of relevant stakeholders to farm animal welfare?

Whilst each research question was considered separately in the dissertation’s introduction, the data placed the concept of consumer awareness and attitudes within the broader context of the social, economic, political, and ethical milieu in which all food choices are made. In the remainder of this section I summarise the main research findings and this is followed by implications for theory and practice in Australia and abroad.

The questionnaire discussed in chapter three was designed to gather quantitative data on the attitudes among Australian consumers towards animal production. Overall, I found consumers considered animal welfare an important issue given society’s acceptance of meat, dairy, and eggs as staple food items. Despite the concern for certain animal welfare
issues, responses indicated low levels of awareness of animal production, both self-rated and actual. There is evidence of a consensus that some aspects of intensive production have negative impacts on the wellbeing of farm animals, yet an understanding of how to translate such concerns into purchasing decisions is lacking.

In chapter four, I utilised a quasi-experimental research design to evaluate the role of information in shaping consumers attitudes, awareness, and perceptions of intensive animal production. While based on a separate cohort of participants to the previous study, the participants were again in agreement that they would like to see farm animals treated well. However, the impact of receiving information about the animal welfare, human health, and environmental impacts related to intensive farming did little to modify perceptions of farming. Unsurprisingly, there were polarised views on information about how chicken meat, pork, and eggs are produced. There were also ambivalent attitudes towards the large inconsistencies in regulation for product labels. Reactions such as shock, and resolutions to change eating behaviours were juxtaposed with dismissing the information as inaccurate, inflammatory, or exaggerated. Overall, however, the majority of respondents did agree that information has the potential to change behaviour and is useful to some degree.

Having determined through the studies discussed in chapters two and three that Australians are in agreement that the welfare of the animals we raise for food is important, yet information alone is not likely to initiate change, I used stakeholder interviews to understand the research problem in its wider context. Interviews with key stakeholders reiterated the notion that effective animal welfare creates a challenge for communication between producers, retailers, advocacy groups, and consumers. Based on my findings I posit information needs to be clearly understood, repeated in various formats, and originating from trustworthy sources. Labelling standards play an important role in
consumer perceptions of animal welfare credence claims. Australia has only recently formalised a legal definition of free range for egg products, and there is still a considerable distance to travel before we can anticipate the wider food industry existing without such ambiguity. The interviews I conducted made it clear that economic stakeholders are attempting to maintain consumer trust and deliver high welfare products without expenditures and little monetary exchange for animal welfare improvements.

With a shift towards market-based improvements to animal welfare as opposed to legislative measures, producers and retailers are presented with responsibility and opportunity in implementing improvements to animal welfare along the supply chain. However, conflicts of interest and power imbalances between stakeholders’ impact on the success of welfare improvements. The duopoly of supermarkets in Australia wield significant pricing power over suppliers and farmers whilst trying to appease a growing portion of concerned consumers.

Overall, there was an optimistic view of the current directions that animal welfare and consumer awareness are headed. Several stakeholders agreed that consumers are becoming more aware of animal welfare issues and the level of dialogue on the issue has grown immensely in the last decade. The interviews provided an opportunity for important stakeholder groups to elucidate their perspectives on key concepts and issues that drive the consumption of higher welfare animal-based food products whilst highlighting barriers to changing consumer behaviour. As similar studies have shown, the perceptions of stakeholder groups toward farm animal welfare vary according to their role in the supply chain (Coleman, 2008; Harper & Makatouni, 2002; Vanhonacker et al., 2008; You et al., 2014). These different perspectives are not only evident through the information provided in the interviews but also the language and terminology used to discuss animal welfare.
A common theme that emerged from the interviews was the importance of communication between stakeholders and the provision of accurate information to consumers. Research suggests that animal welfare groups and consumer advocacy groups wish to increase awareness whilst stakeholders with a market share in animal products prefer the status quo (Luhmann & Theuvsen, 2016). However, representatives from Coles and the Chicken Meat Federation expressed a belief that increased transparency could help alleviate consumer concerns about animal welfare issues. Given the conflict of interest inherent in agricultural and farming legislation in Australia, one might question why such critical responsibility is placed on the consumer to select the ‘right’ product. As we have seen in decisions pertaining to stocking density of hens, consumer preferences for higher welfare farming systems is easily thwarted by collaboration between economically-invested stakeholders. Animal welfare is a public good, and therefore government regulation should be informed by animal welfare science and public attitudes. Education about farm animals, animal welfare, the environment and human health can then be developed as part of a healthy society rather than a primary motive for creating behaviour change in the population.

6.3 Implications for theory

This dissertation drew upon a number of theoretical frameworks and models to inform the research design and interpretation of results. The field of human-animal studies is still relatively young and its multidisciplinary nature allowed me to approach the issue using attitudinal and social psychology research frameworks. Although actual behaviour was not measured in my study, Ajzen’s theory of planned behaviour was used as a platform on which to base the variables included for measurement and analysis. The findings of my study allow for an enhanced understanding of the role of awareness in attitudes and indirectly behaviour.
Purchasing decisions made by consumers were assumed to be rational and motivations for purchases were determined by a number of factors. However, as the focus of my research was consumer attitudes, I examined the level of awareness consumers have. In chapter three I determined a significant correlation between attitudes to animals and awareness of animal welfare. As well as awareness, other factors including socio-demographics were related to attitudes. Consumer awareness is largely overlooked in consumer studies and would be beneficial to include in future studies as part of the theoretical basis for examining attitudes in the context of support for higher welfare products.

The theory of cognitive dissonance (Festinger, 1957) is relevant to the findings presented in this dissertation. The qualitative responses provided by respondents regarding their perception of information, coupled with the strong stated preference for higher welfare products which is not reflected in sales figures indicates the theory holds true for Australian consumers. Considering the limited change in awareness and awareness observed in the quasi-experiment, it can be stated that consumers employ tactics associated with cognitive dissonance to preserve their current behaviours in the wake of information that contradicts their stated beliefs. Some respondent reactions to information on the impacts of animal production were dismissive of the information. This could be a sign of adjusting beliefs to suit the maintenance of current behaviours. My findings could impact the interpretation of cognitive dissonance theory and highlight the need for any information that is designed to change behaviours be as accurate and credible as possible. Alternative behaviours (i.e., higher welfare animal-based foods) should be presented as an easy to acquire option. This would eliminate the need for consumers to change their beliefs — rather they would change their behaviours to suit their existing beliefs that it is ethical to purchase higher welfare products.
6.4 Implications for practice

It is likely that engaging consumers with animal welfare and increasing awareness of the negative impacts of intensive animal production would have a flow on effect whereby demand for intensively-produced animal products would drop while consumers’ preferences would shift towards higher welfare products. The results of my study suggest that any changes to awareness, preferences, attitudes or behaviour would not result from isolated incidents of information provision, but rather an ongoing campaign. The various perspectives and motivations of the affected stakeholder groups should be considered to enact change. The meaning behind labels such as free range, cage-free, bred free-range and organic should be made clearly available to the public and included on product packaging to ensure welfare is an attribute that can be accessed in a meaningful way at the point of purchase. Such transparency is critical to effectively engaging consumers, and maintaining their trust and confidence in a product.

Campaigning efforts should target consumers who are concerned about animal welfare to help them translate their concern into action. The studies conducted for this dissertation have shown that many concerned consumers are willing to adjust their behaviour to purchase higher welfare products but do not know how to effectively do this. If this proportion of consumers could be encouraged to engage with animal welfare through their purchases, and communicate with their social networks about their knowledge, it would help to create a social environment in which the importance of higher welfare products would be a more universally-shared value.

The research findings presented in this dissertation are relevant beyond the Australian context. Much of the literature that informed the research design originated in Europe, where citizen concerns for the environment, human, and animal health are widely acknowledged within the agrifood chain. The interplay of concerns and attitudes between...
retailers, animal advocacy groups, and producers is not unique to Australia. Critical evaluation of the responsibility of legislation in protecting the welfare of farm animals is required throughout developed economies rather than a sole focus on consumer awareness. There are consumers with positive attitudes to farm animals and a concern for their wellbeing throughout the world; research implications for practice are therefore relevant on a global scale, including in poorer countries where animal intensification is in its early stages. Incorporating the perspectives of various stakeholders is a necessary measure when exploring the impacts of intensive animal farming.

6.5 Limitations

Several limitations associated with this dissertation are important to address beyond those discussed in the previous three chapters. Generalizability of the results to Australians as a whole and to consumers of other countries should be done so cautiously. The sample of respondents used in chapter three was drawn largely through my university networks which likely skewed the data. Attempts to counter the sample of online respondents with a sample of randomly selected respondents proved largely futile because a considerably smaller sample was obtained with the latter method of recruitment. Similarly, the results of chapter four were sourced from an online panel provider which is associated with issues of generalizability, particularly considering the underrepresentation of older participants. People with livestock and farming experience were also underrepresented in both chapters three and four.

Another limitation of this dissertation was that actual behaviours were not included in the variables analysed. Although I attempted to acquire insight into actual purchasing decisions, I deemed the data to be too ambiguous to qualify for further analysis. I therefore had to rely on other variables such as reasons for purchase.
6.6 Future research
Animal welfare is becoming an increasingly important topic for consideration by the general public, policy-makers, retailers, producers, and animal welfare scientists. Future research in this field would benefit enormously from studies that incorporate actual behaviour into the variables of interest. Exploring the connection between stated attitudes, concern and awareness and how they translate into behaviours at the point of purchase would contribute to the development of the high welfare food market. The role of social norms and perceived behavioural control should also be explored further. It would be ideal for researchers within the social psychology field to undertake studies into how best to bolster the belief that animal welfare is an important product attribute for consumers.

While this research was informed from a range of theoretical perspectives, its main contribution is to practice. Concerns about animal welfare, the environment, and human health provide an opportunity to all stakeholders within the food system to increase transparency, investigate sustainable alternatives, and offer market solutions.

Finally, further research into the impact of information on consumer attitudes and purchasing decisions is needed. Consumer behaviour studies to assess the perception and potential for change of a variety of modes of information from varying sources would allow all stakeholders to benefit.
Survey 3 This survey has been developed in order to investigate consumer behaviours, attitudes, and preferences with regards to animal-based food products.

**Background to the Research**

This study will examine Australian consumers’ preferences for animal-based food products as well as consumption behaviours and attitudes towards animals.

**What you will be asked to do**

If you choose to participate in this study, you will be asked to complete an online questionnaire. The questionnaire will include questions on the above issues as well as some basic demographic characteristics such as age, gender, occupation and experience with animals. The questionnaire should take approximately 15 to 20 minutes to complete. No personal identification information will be requested and your responses will remain anonymous and confidential.

**The basis by which you were selected to partake in the research**

The study is open to anyone over the age of 18 years of age.

**The expected benefits of the research**

This research will gather information on the current levels of understanding that Australians have of common animal production systems. This research will add to existing knowledge on consumer preferences with regards to animal-based food items.

**Incentive**

In appreciation of your time you will be invited to enter the draw to win a $100 Coles Myer Gift Voucher upon completion of the survey. If you wish to enter the draw you will
be asked to provide your e-mail address at the conclusion of the survey. Your e-mail address will be submitted separately from your survey responses.

**Risks to you**

We do not anticipate any risks to you as a consequence of participating in this study. However, if you do experience distress you may wish to contact a counsellor at Lifeline on 131114. This service may be contacted without the need for prior or special approval.

**Your confidentiality**

Should you choose to participate in this study, you will not be made identifiable by your responses. Responses are anonymous and will be analysed and reported in aggregate. Survey responses will be stored on a password protected computer in a locked university office.

**Your participation is voluntary**

Your participation in this research is entirely voluntary. You have the right to withdraw from this study at any time. There will be no penalty incurred or loss of any benefits by choosing to withdraw.

**Your consent**

Completion and submission of the questionnaire will be deemed as consent to your participation in this research.

To obtain further information regarding this study, please contact either Dr Leah Burns at leah.burns@griffith.edu.au or Ms Sally Healy at sally.healy@griffithuni.edu.au.

**The ethical conduct of this research**

Any research performed at Griffith University is conducted in accordance with the National Statement on Ethical Conduct in Human Research. If you have any concerns or
complaints about the ethical conduct of the research project, you can contact the Manager, Research Ethics on 3735 5585 or research-ethics@griffith.edu.au.

Privacy Statement

Your personal information will be treated as confidential information and will not be disclosed to third parties without your consent, except where Griffith University is permitted to disclose the information by law or required by law to disclose the information to meet government, legal or other regulatory authority requests.

There are 39 questions in this survey

Behaviour

1 How often do you eat meat (including poultry and seafood)?

Please choose only one of the following:

- 15 + times a week
- 8 - 14 times a week
- 4 - 7 times a week
- 1 - 3 times a week
- Occasionally (less than once a week)
- Never

2 How often do you eat dairy products (e.g. milk, cheese, yoghurt, eggs)?

Please choose only one of the following:

- 15 + times a week
- 8 - 14 times a week
- 4 - 7 times a week
- 1 - 3 times a week
- Occasionally (less than once a week)
- Never

3 Do you avoid eating any meat, dairy, or egg food items?
Please choose only one of the following:

- There are no animal-based foods that I avoid eating
- I don't consider myself vegetarian but I avoid certain types of meat
- I consider myself vegetarian and eat limited types of meat (e.g. fish)
- I consider myself vegetarian and avoid eating meat
- I consider myself vegan and avoid eating all animal products

4 What reasons are you vegetarian or vegan?

Only answer this question if the following conditions are met:
° Answer was 'I consider myself vegan and avoid eating all animal products' or 'I consider myself vegetarian and avoid eating meat' or 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' at question '3 [con]' (Do you avoid eating any meat, dairy, or egg food items?) and Answer was 'I consider myself vegan and avoid eating all animal products' or 'I consider myself vegetarian and avoid eating meat' or 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' at question '3 [con]' (Do you avoid eating any meat, dairy, or egg food items?) and Answer was 'I consider myself vegan and avoid eating all animal products' or 'I consider myself vegetarian and avoid eating meat' or 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' at question '3 [con]' (Do you avoid eating any meat, dairy, or egg food items?)

Please choose all that apply:

- Health
- Concern for the environment
- Concern with the way animals are treated
- Animal rights
- Religious beliefs
- Upbringing
- Other:
5 When buying eggs, which of the following labels do you look for?

Only answer this question if the following conditions are met:
° Answer was 'There are no animal-based foods that I avoid eating' or 'I don't consider myself vegetarian but I avoid certain types of meat' or 'I consider myself vegetarian and avoid eating meat' or 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' at question '3 [con]' (Do you avoid eating any meat, dairy, or egg food items?) and Answer was 'There are no animal-based foods that I avoid eating' or 'I don't consider myself vegetarian but I avoid certain types of meat' or 'I consider myself vegetarian and avoid eating meat' or 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' at question '3 [con]' (Do you avoid eating any meat, dairy, or egg food items?) and Answer was 'There are no animal-based foods that I avoid eating' or 'I don't consider myself vegetarian but I avoid certain types of meat' or 'I consider myself vegetarian and avoid eating meat' or 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' at question '3 [con]' (Do you avoid eating any meat, dairy, or egg food items?) and Answer was 'There are no animal-based foods that I avoid eating' or 'I don't consider myself vegetarian but I avoid certain types of meat' or 'I consider myself vegetarian and avoid eating meat' or 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' at question '3 [con]' (Do you avoid eating any meat, dairy, or egg food items?)

Please choose all that apply:

☐ Free-range
☐ Barn-laid
☐ Organic
☐ Biodynamic
☐ Caged
☐ None
☐ Not applicable
☐ Other:

6 When buying meat, which of the following labels do you look for?
Only answer this question if the following conditions are met:
° Answer was 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' or 'I don't consider myself vegetarian but I avoid certain types of meat' or 'There are no animal-based foods that I avoid eating' at question '3 [con]' (Do you avoid eating any meat, dairy, or egg food items?) and Answer was 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' or 'I don't consider myself vegetarian but I avoid certain types of meat' or 'There are no animal-based foods that I avoid eating' at question '3 [con]' (Do you avoid eating any meat, dairy, or egg food items?) and Answer was 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' or 'I don't consider myself vegetarian but I avoid certain types of meat' or 'There are no animal-based foods that I avoid eating' at question '3 [con]' (Do you avoid eating any meat, dairy, or egg food items?)

Please choose all that apply:

☐ Free-range
☐ Grain-fed
☐ Grass-fed
☐ Bred free-range
☐ Organic
☐ Biodynamic
☐ None
☐ Not applicable
☐ Other:

Knowledge

7 How would you rate your level of understanding of modern animal-based food production practices?

Please choose only one of the following:
8 Please respond to the following statements as either being true (yes) or false (no) based on your understanding of animal production systems in Australia. If you do not know the answer please select "Uncertain".

Please choose the appropriate response for each item:

- Female pigs are routinely kept in narrow crates throughout their pregnancy
- Beak trimming in laying hens is permitted without pain relief
- Labels for animal-based foods (e.g. free range) are defined in legislation
- Chickens raised for meat are selectively bred to reach slaughter weight at an accelerated rate
- Hormones are added to chicken feed
- Producers of eggs must state the production system used (e.g. free range, caged)
- Chickens raised for meat have approximately one square metre to move around in
Pigs raised intensively spend the majority of their lives indoors  

Battery cages for hens are legal  

Pigs are tethered to prevent them escaping their enclosure  

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<tr>
<th>Question</th>
<th>Yes</th>
<th>Uncertain</th>
<th>No</th>
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<td>Pigs raised intensively spend the majority of their lives indoors</td>
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<td>Battery cages for hens are legal</td>
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<tr>
<td>Pigs are tethered to prevent them escaping their enclosure</td>
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9 Which of the following practices are permitted on Australian livestock?  

Please choose all that apply:  

- Hens - beaks trimmed  
- Hens - forced molting (starvation for up to 14 days to make the hens lay eggs again)  
- Piglets - tails clipped  
- Piglets - castration  
- Piglets - teeth clipped  

10 Please select whether the following are true (yes) or false (no) with regards to the natural behaviours of pigs and chickens. If you do not know please select "Uncertain".  

Please choose the appropriate response for each item:  

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>Uncertain</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pigs can exhibit fixed repetitive actions if they are denied natural light and surroundings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pigs are largely inactive and spend most of their time sleeping</td>
<td></td>
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<tr>
<td>The bond between mother and piglet is very strong</td>
<td></td>
<td></td>
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<tr>
<td>Female pigs make a nest for their young using natural materials before giving birth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chickens form social groups and communicate through sounds, posture and visual displays</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
The natural lifespan of a chicken is 2-3 years

Chickens spend most of their time foraging for food and scratching at the ground

**Attitudes and preferences**

11 Please mark the following statements according to whether you strongly agree, agree, are undecided, disagree, or strongly disagree.

Please choose the appropriate response for each item:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
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<tbody>
<tr>
<td>Humans have a right to use animals as food</td>
<td>〇</td>
<td>〇</td>
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<td>Intensive factory farming is not necessary in today’s world</td>
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<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
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<tr>
<td>The regulations around humane</td>
<td>〇</td>
<td>〇</td>
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<td>〇</td>
<td>〇</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>Agree</td>
<td>Undecided</td>
<td>Disagree</td>
<td>Strongly disagree</td>
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<tr>
<td>----------------</td>
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</tr>
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</table>

killing and abattoirs are not strict enough in Australia

I would be willing to pay more for "animal welfare friendly" products (e.g. eggs, meat)

Live transport of animals over great distances should be banned

Live transport of animals overseas is an acceptable source of income

Hunting is an extension of natural processes and is therefore acceptable

It is cruel to keep birds in cages to mass produce eggs
<table>
<thead>
<tr>
<th>Statement</th>
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<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hunting for financial profit is morally wrong and should be stopped</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modern methods of &quot;factory farming&quot; to produce eggs, milk, and meat are cruel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is acceptable to use native Australian animals such as Wallaby and Kangaroo as food</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>The meat production and processing industries can be trusted to ensure the safety of the meat product</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Animals should have the same moral rights as human beings</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
12 Of the following attributes, select the five most important to you when purchasing eggs and rank them from 1 - 5, with 1 being the most important.

Only answer this question if the following conditions are met:
° Answer was 'I consider myself vegetarian and avoid eating meat' or 'I don't consider myself vegetarian but I avoid certain types of meat' or 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' or 'There are no animal-based foods that I avoid eating' at question '3 [con]' (Do you avoid eating any meat, dairy, or egg food items?)
° Answer was 'I consider myself vegetarian and avoid eating meat' or 'I don't consider myself vegetarian but I avoid certain types of meat' or 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' or 'There are no animal-based foods that I avoid eating' at question '3 [con]' (Do you avoid eating any meat, dairy, or egg food items?)
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Please number each box in order of preference from 1 to 14

Absence of genetic modification
Absence of hormones/antibiotics
Appearance
Australian in origin
Brand
Concern for environment
Humane treatment of animals
Free-range
Packaging
Price
Produced locally
Quality
Size
Shelf-life

Of the following attributes, select the five most important to you when purchasing pork and rank them from 1 - 5, with 1 being the most important.

Only answer this question if the following conditions are met:
° Answer was 'There are no animal-based foods that I avoid eating' or 'I don't consider myself vegetarian but I avoid certain types of meat' or 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' at question '3 [con]' ( Do you avoid eating any meat, dairy, or egg food items? ) and Answer was 'There are no animal-based foods that I avoid eating' or 'I don't consider myself vegetarian but I avoid certain types of meat' or 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' at question '3 [con]' ( Do you avoid eating any meat, dairy, or egg food items? ) and Answer was 'There are no animal-based foods that I avoid eating' or 'I don't consider myself vegetarian but I avoid certain types of meat' or 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' at question '3 [con]' ( Do you avoid eating any meat, dairy, or egg food items? )

Please number each box in order of preference from 1 to 14

Absence of genetic modification
Absence of hormones/antibiotics
Appearance
Australian in origin
Brand
Concern for environment
Humane treatment of animals
Free-range
Packaging
Price
Produced locally
Quality
Size
Shelf life

14 Of the following attributes, select the five most important to you when purchasing chicken and rank them from 1 - 5, with 1 being the most important.

Only answer this question if the following conditions are met:
° Answer was 'There are no animal-based foods that I avoid eating' or 'I don't consider myself vegetarian but I avoid certain types of meat' or 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' at question '3 [con]' (Do you avoid eating any meat, dairy, or egg food items?) and Answer was 'There are no animal-based foods that I avoid eating' or 'I don't consider myself vegetarian but I avoid certain types of meat' or 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' at question '3 [con]' (Do you avoid eating any meat, dairy, or egg food items?)

Please number each box in order of preference from 1 to 14

Absence of genetic modification
Absence of hormones/antibiotics
Appearance
Australian in origin
Brand
Concern for environment
Humane treatment of animals
Free-range
Packaging
Price
Produced locally
Quality
Size
Shelf life

15 How would you rate your understanding of the labelling used on animal-based foods?
Please choose only one of the following:

○ 1
○ 2
○ 3
○ 4
○ 5

1= Extensive understanding
5= No understanding

16 How much time do you put into examining the labels of animal-based foods when you are grocery shopping?
Please choose only one of the following:

○ Considerable time
○ Some time
○ Not much time
○ No time at all

17 How concerned are you regarding the treatment of farmed animals in Australia?
Please choose only one of the following:

○ Extremely concerned
○ Quite concerned
○ Neutral
18 For me to purchase animal-based foods that promote acceptable treatment of animals is
Please choose only one of the following:
- Extremely important
- Quite important
- Neutral
- Slightly important
- Not important at all

19 For me to have information on animal production systems is
Please choose only one of the following:
- Extremely important
- Quite important
- Neutral
- Slightly important
- Not important at all

20 For me to identify animal-based foods that promote acceptable treatment of animals is
Please choose only one of the following:
- Extremely easy
- Somewhat easy
- Neutral
- Somewhat difficult
- Extremely difficult

21 Most people who are important to me think that buying animal-based foods that promote acceptable treatment of animals is something I should do
Please choose only one of the following:

- Strongly agree
- Agree
- Neutral/ Undecided
- Disagree
- Strongly disagree

22 Whether or not I consume animal-based foods that are produced using methods that promote acceptable treatment of animals is completely up to me

Please choose only one of the following:

- Strongly agree
- Agree
- Neutral/ Undecided
- Disagree
- Strongly disagree

23 Most people make an effort to buy animal-based foods that promote acceptable treatment of animals

Please choose only one of the following:

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

24 Did your family keep pets when you were growing up?

Please choose only one of the following:

- Yes
- No
25 What is your experience with having animals as pets?

26 Please describe whether you have ever owned a pet, and if so, what types of animals you kept.

Only answer this question if the following conditions are met:
° Answer was 'Yes' at question '24 [exp pets ]' ( Did your family keep pets when you were growing up? ) and Answer was 'Yes' at question '24 [exp pets ]' ( Did your family keep pets when you were growing up? )

Please write your answer here:

27 Have you ever lived on a livestock farm?

Please choose only one of the following:

☐ Yes
☐ No

28 What, if any, is your experience with livestock animals?

29 Please describe if you have been involved in the livestock industry or have experienced information about it from the news, friends etc.

Please write your answer here:

Socio-demographics

30 What is your age?

Please choose only one of the following:

☐ Under 18
☐ 19-24
☐ 25-34
☐ 35-50
☐ 50-65
☐ Over 65
31 What is your gender?
Please choose only one of the following:
☐ Male
☐ Female

32 What is your postcode?
Please write your answer here:

33 What is your occupation?
Please write your answer here:

34 What is the highest level of education you have completed?
Please choose only one of the following:
☐ Did not complete year 10
☐ Year 10
☐ Secondary School
☐ Trade qualification
☐ TAFE or other vocational qualification
☐ Bachelor degree
☐ Postgraduate degree

35 Do you have any children under 18 years of age?
Please choose only one of the following:
☐ Yes
☐ No

36 Which group best describes your racial or ethnic heritage?
Please choose only one of the following:
☐ White, Caucasian or European
37 What is your religion?

Please choose only one of the following:

- No religion
- Christian
- Buddhist
- Hindu
- Jewish
- Muslim
- Sikh
- Other (please specify in comments section)

Make a comment on your choice here:

38 What was your individual income for the last 12 months?

Please choose only one of the following:

- Less than $10,000
- $10,001 to $30,000
- $30,001 to $50,000
- $50,001 to $70,000
- $70,001 to $90,000
- $90,001 to $120,000
39 Are you affiliated with animal protection groups? E.g. RSPCA, Animals Australia, Voiceless, Animal Liberation. If so, please specify which organisation/s in the comment box.

Please choose **only one** of the following:

- Yes
- No

Make a comment on your choice here:

"Affiliation" implies being an employee or volunteer (either currently or in the past), holding a membership, or **having made a donation**

Thank you for your participation in this survey. If you would like to enter the draw to win a $100 Coles Myer gift voucher, please follow the below link. To maintain confidentiality, your responses to this survey will be separate from your e-mail address supplied when you enter the draw.

Clink on the below link to enter the draw:


Please submit by 15.05.2013 – 00:00

Submit your survey.

Thank you for completing this survey.

This survey has been developed in order to collect opinions and responses regarding a website on the health and environmental impacts of farming in Australia.

To allow participants to provide feedback on the design, layout, and content of a website
QUASI-EXPERIMENT Surveys 1 and 5

This survey has been developed in order to investigate consumer behaviours, attitudes, and preferences with regards to animal-based food products.

Background to the Research

This study will examine Australian consumers’ preferences for animal-based food products as well as consumption behaviours and attitudes towards animals.

What you will be asked to do

If you choose to participate in this study, you will be asked to complete an online questionnaire on a total of five occasions. The first and final questionnaires will include questions on the above issues as well as some basic demographic characteristics such as age, gender, occupation and experience with animals. It will be helpful for you to have the receipt from your most recent grocery shopping trip available for all surveys. The researchers are interested in the chicken, pork, and egg products you most recently purchased.

The questionnaire should take approximately 15 to 20 minutes to complete. The second, third, and forth questionnaires will be shorter in length and only include questions on recent purchases. No personal identification information will be requested and your responses will remain anonymous and confidential.

The basis by which you were selected to partake in the research

The study is open to anyone over the age of 18 years of age.

The expected benefits of the research
This research will gather information on the current levels of understanding that Australians have of common animal production systems. This research will add to existing knowledge on consumer preferences with regards to animal-based food items.

Risks to you

We do not anticipate any risks to you as a consequence of participating in this study. However, if you do experience distress you may wish to contact a counsellor at Lifeline on 131114. This service may be contacted without the need for prior or special approval.

Your confidentiality

Should you choose to participate in this study, you will not be made identifiable by your responses. Responses are anonymous and will be analysed and reported in aggregate. Survey responses will be stored on a password protected computer in a locked university office.

Your participation is voluntary

Your participation in this research is entirely voluntary. You have the right to withdraw from this study at any time. There will be no penalty incurred or loss of any benefits by choosing to withdraw.

Your consent

Completion and submission of the questionnaire will be deemed as consent to your participation in this research.

To obtain further information regarding this study, please contact either Dr Leah Burns at leah.burns@griffith.edu.au or Ms Sally Healy at sally.healy@griffithuni.edu.au.

The ethical conduct of this research

Any research performed at Griffith University is conducted in accordance with the National Statement on Ethical Conduct in Human Research. If you have any concerns or
complaints about the ethical conduct of the research project, you can contact the Manager, Research Ethics on 3735 5585 or researchethics@griffith.edu.au.

Privacy Statement

Your personal information will be treated as confidential information and will not be disclosed to third parties without your consent, except where Griffith University is permitted to disclose the information by law or required by law to disclose the information to meet government, legal or other regulatory authority requests.

There are 39 questions in this survey.
1 Are you responsible for the grocery shopping in your household?

Please choose only one of the following:

○ Yes

○ No

○ Sometimes

○ I only purchase food for myself

○ It is shared between household members

2 Do you avoid eating any meat, dairy, or egg food items?

Please choose only one of the following:

○ There are no animal-based foods that I avoid eating

○ I don't consider myself vegetarian but I avoid certain types of meat

○ I consider myself vegetarian and eat limited types of meat (e.g. fish)

○ I consider myself vegetarian and avoid eating meat

○ I consider myself vegan and avoid eating all animal products

○ Other

3 What reasons are you vegetarian or vegan?

Only answer this question if the following conditions are met:

° Answer was 'I consider myself vegan and avoid eating all animal products' or 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' or 'I consider myself vegetarian and avoid eating meat' at question '2 [con]' (Do you avoid eating any meat, dairy, or egg food items?) and Answer was 'I consider myself vegan and avoid eating all animal products' or 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' or 'I consider myself vegetarian and avoid eating meat' at question '2 [con]' (Do you avoid eating any meat, dairy, or egg food items?) and Answer was 'I consider myself vegan and avoid eating all animal products' or 'I consider myself vegetarian and eat limited types of meat (e.g. fish)' or 'I consider myself vegetarian and avoid eating meat' at question '2 [con]' (Do you avoid eating any meat, dairy, or egg food items?)
and avoid eating meat' at question '2 [con]' (Do you avoid eating any meat, dairy, or egg food items?) Please choose all that apply:

- [ ] Health
- [ ] Concern for the environment
- [ ] Concern with the way animals are treated
- [ ] Animal rights
- [ ] Religious beliefs
- [ ] Upbringing
- [ ] Other: ________________________________

Q4

Please complete the following table for chicken, pork and egg products based on your most recent shopping experience. Please include as much information as possible.

For example:

1 x Woolworths Select Free Range Eggs 12pk, Woolworths
100g pork sausages, local markets
2 x Coles Brand Bacon Australian Short Cut Rindless 200g

<table>
<thead>
<tr>
<th>Item 1</th>
<th>Quantity</th>
<th>Brand</th>
<th>Product</th>
<th>Store purchased from (e.g. Woolworths)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 2</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Item 3</td>
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<td>Item 4</td>
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<td>Item 5</td>
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<td>Item 6</td>
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<td>Item 7</td>
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<td>Item 8</td>
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<tr>
<td>Item 9</td>
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<tr>
<td>Item 10</td>
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</tr>
</tbody>
</table>
Q5

Please select up to five of the products you listed in the previous question and provide a brief explanation for your choice. If you have consumed some of this item, please also provide an overall rating for how much you enjoyed it, with 1 being 'not at all', and 5 being 'very much'.

Leave the responses blank if you did not purchase any relevant items.

For example:

Item 1: Inexpensive, Australian made; 5
Item 2: I always buy this product; 4
Item 3: It caught my eye, inexpensive, I liked the label; 5
Item 4: It was the only one available; 2

<table>
<thead>
<tr>
<th>Item</th>
<th>Reason 1</th>
<th>Reason 2</th>
<th>Reason 3</th>
<th>Reason 4</th>
<th>Enjoyment Rating (1-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 1</td>
<td></td>
<td></td>
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<tr>
<td>Item 5</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Knowledge

6. How would you rate your level of understanding of modern animal-based food production practices?

Please choose only one of the following:

- Excellent
- Moderate
- Average
- Low
- No understanding
- Unsure

7. How satisfied are you regarding the availability of information on farm animal welfare in Australia?

Please choose only one of the following:

- Very satisfied
- Satisfied
- Neutral
- Slightly unsatisfied
- Very unsatisfied

8. Please respond to the following statements as either being true (yes) or false (no) based on your understanding of animal production systems in Australia. If you do not know the answer please select "Uncertain".

Please choose the appropriate response for each item:

Yes  Uncertain  No

Female pigs are routinely kept in narrow crates throughout their pregnancy

Beak trimming in laying hens is permitted without pain relief

Labels for animal-based foods (e.g. free range) are defined in legislation
Chickens raised for meat are selectively bred to reach slaughter weight at an accelerated rate

- [ ]

Hormones are added to chicken feed

- [ ]

Producers of eggs must state the production system used (e.g. free range, caged)

- [ ]

Chickens raised for meat have approximately one square metre to move around in

- [ ]

Pigs raised intensively spend the majority of their lives indoors

- [ ]

Battery cages for hens are legal

- [ ]

Pigs are tethered to prevent them escaping their enclosure

- [ ]

Free range chickens (meat and egg) must have access to outside areas

- [ ]

The majority of chickens raised for meat consumption are kept in cages

- [ ]

Pigs who undergo castration must be provided anaesthetic

- [ ]

9 Which of the following practices are permitted on Australian livestock?

Please choose all that apply:

- [ ] Hens - forced molting (starvation for up to 14 days to make the hens lay eggs again)

- [ ] Hens - beaks trimmed

- [ ] Piglets - tails clipped

- [ ] Piglets - castration

- [ ] Piglets - teeth clipped
Please select whether the following are true (yes) or false (no) with regards to the natural behaviours of pigs and chickens. If you do not know please select "Uncertain".

Please choose the appropriate response for each item:

<table>
<thead>
<tr>
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</table>

- Pigs can exhibit fixed repetitive actions if they are denied natural light and surroundings 0 0 0
- Pigs are largely inactive and spend most of their time sleeping 0 0 0
- The bond between mother and piglet is very strong 0 0 0
- Female pigs make a nest for their young using natural materials before giving birth 0 0 0
- Chickens form social groups and communicate through sounds, posture and visual displays 0 0 0
- The natural lifespan of a chicken is 2-3 years 0 0 0
- Chickens spend most of their time foraging for food and scratching at the ground 0 0 0
# Attitudes and preferences

11 Please mark the following statements according whether you strongly agree, agree, are undecided, disagree, or strongly disagree.

<table>
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<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please choose the appropriate response for each item: agree</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>The regulations around humane killing and abattoirs are not strict enough in Australia</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I would be willing to pay more for &quot;animal welfare friendly&quot; products (e.g. eggs, meat)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Live transport of animals over great distances should be banned</td>
<td>○</td>
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</tr>
<tr>
<td>Hunting for financial profit is morally wrong and should be stopped</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Modern methods of &quot;factory farming&quot; to produce eggs, milk and meat are cruel</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>It is acceptable to use native Australian animals such as Wallaby and Kangaroo as food</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
The meat production and processing industries can be trusted to ensure the safety of the meat product.

Animals should have the same moral rights as human beings.

12 How would you rate your level of understanding of the labelling (e.g. free-range, organic, breed freerange) of the following foods?

Please choose the appropriate response for each item:

<table>
<thead>
<tr>
<th>Food</th>
<th>Extensive</th>
<th>Moderate</th>
<th>Average</th>
<th>Low understanding</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicken</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pork</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Eggs</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

1 = Extensive understanding
5 = No understanding
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
</table>
| **13 How much time do you put into examining the labels of animal-based foods when you are grocery shopping?** | ○ Considerable time  
○ Some time  
○ Not much time  
○ No time at all  
○ Unsure |
| **14 How concerned are you regarding the treatment of farmed animals in Australia?** | ○ Extremely concerned  
○ Quite concerned  
○ Neutral  
○ Slightly concerned  
○ Not concerned at all |
| **15 How concerned are you regarding the environmental impacts of animal farming in Australia?** | ○ Extremely concerned  
○ Quite concerned  
○ Neutral  
○ Slightly concerned  
○ Not concerned at all |
16 How concerned are you regarding the health impacts of consuming animal-based foods (meat, dairy and eggs)?

Please choose only one of the following:

- Extremely concerned
- Quite concerned
- Neutral
- Slightly concerned
- Not concerned at all

17 For me to purchase animal-based foods that promote acceptable treatment of animals is

Please choose only one of the following:

- Extremely important
- Quite important
- Neutral
- Slightly important
- Not important at all
- Unsure

18 For me to have information on animal production systems is

Please choose only one of the following:

- Extremely important
- Quite important
- Neutral
- Slightly important
- Not important at all
- Unsure
19 For me to identify animal-based foods that promote acceptable treatment of animals is

Please choose only one of the following:

- Extremely easy
- Somewhat easy
- Neutral
- Somewhat difficult
- Extremely difficult
- Unsure

20 Whether or not I consume animal-based foods that are produced using methods that promote acceptable treatment of animals is completely up to me

Please choose only one of the following:

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly disagree
- Unsure

21 Most people make an effort to buy animal-based foods that promote acceptable treatment of animals

Please choose only one of the following:

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree
- Unsure
### 22 Most people who are important to me think that buying animal-based foods that promote acceptable treatment of animals is something I should do

Please choose **only one** of the following:

- [ ] Strongly agree
- [ ] Agree
- [ ] Neutral
- [ ] Disagree
- [ ] Strongly disagree
- [ ] Unsure

### 23 Have you ever lived on a livestock farm?

Please choose **only one** of the following:

- [ ] Yes
- [ ] No

### 24 Did your family keep pets when you were growing up?

Please choose **only one** of the following:

- [ ] Yes
- [ ] No
25 What is your experience with having animals as pets?

Please describe whether you have ever owned a pet, and if so, what types of animals you kept.

Only answer this question if the following conditions are met:
° Answer was 'Yes' at question '23 [exp pets]' (Did your family keep pets when you were growing up?)
and Answer was 'Yes' at question '23 [exp pets]' (Did your family keep pets when you were growing up?)

Please write your answer here:

26 What, if any, is your experience with livestock animals?

Please describe if you have been involved in the livestock industry or have experienced information about it from the news, friends etc.

Please write your answer here:

27 Please select from the following regarding your interactions with animal farming

Please choose all that apply:

☐ I own a farm

☐ My parents own a farm (either currently or in the past) ☐ My grandparents or other family members own a farm

☐ I have friends/acquaintances who own a farm
☐ I visit a farm from time to time

☐ I have no association with animal farming

28 What is your age?

Please choose only one of the following:

- Under 18
- 18-24
- 25-34
- 35-50
- 51-65
- Over 65
- Choose not to answer

29 What is your gender?

Please choose only one of the following:

- Male
- Female
- Transgender
- Choose not to answer
### 30 What is the highest level of education you have completed?

Please choose **only one** of the following:

- Did not complete year 10
- Year 10
- Secondary School
- Trade qualification
- TAFE or other vocational qualification
- Bachelor degree
- Postgraduate degree
- Choose not to answer

### 31 What is your postcode?

Please write your answer here:

[ ]

### 32 What is your occupation?

Please write your answer here:

[ ]

### 33 Do you have any children under 18 years of age?

Please choose **only one** of the following:

- Yes
- No

### 34 What is the total number of persons in your household (yourself included)?

Please write your answer here:

[ ]
35 Which group best describes your racial or ethnic heritage?

Please choose **only one** of the following:

- White, Caucasian or European
- Aboriginal or Torres Strait Islander
- Asian (e.g. Japanese, Chinese, Indian)
- African
- Polynesian, Pacific Islander, Maori
- Middle-Eastern
- Other
- Choose not to answer

36 What is your religion?

Please choose **only one** of the following:

- No religion
- Christian
- Buddhist
- Hindu
- Jewish
- Muslim
- Sikh
- Other
- Choose not to answer
37 What was your individual income for the last 12 months?

Please choose only one of the following:

- Less than $10,000
- $10,001 to $30,000
- $30,001 to $50,000
- $50,001 to $70,000
- $70,001 to $90,000
- $90,001 to $120,000
- $120,001 to $150,000
- Over $150,000
- Choose not to answer

38 Please rank your current living environment based on whether it is urban (city) or rural. The lower the number, the more you feel that your living environment is urban. The higher the number, the more you feel that you live in a rural environment.

Please choose only one of the following:

- Urban
- 2
- 3
- 4
- 5
- 6
- Rural
- Choose not to answer
39 Please complete the same ranking as in the previous question but select the option that describes the living environment you grew up in.

Please choose only one of the following:

- Urban
- Rural
- Choose not to answer

Please submit by 23.05.2013 – 00:00

Submit your survey.

Thank you for completing this survey.

APPENDIX C.

WEBSITE REVIEW SURVEY

Background to the Research

This survey aims to collect feedback on a website that has been designed for a general audience that overviews some of the health and environmental impacts concerning farming in Australia.

What you will be asked to do

If you choose to participate in this study, you will be asked to visit a website and provide feedback and points for improvement. The website has been designed to provide a brief overview of some issues relevant to the consumption of animal-based foods.
The website review and questionnaire should take approximately 20 to 25 minutes to complete. You are encouraged to spend as much time perusing the website as you wish.

**The basis by which you were selected to partake in the research**

The study is open to anyone over the age of 18 years of age.

**The expected benefits of the research**

This research will gather information on ways to improve the website and therefore communicate important information to consumers.

**Risks to you**

We do not anticipate any risks to you as a consequence of participating in this study. However, if you do experience distress you may wish to contact a counsellor at Lifeline on 131114. This service may be contacted without the need for prior or special approval.

**Your confidentiality**

Should you choose to participate in this study, you will not be made identifiable by your responses. Responses are anonymous and will be analysed and reported in aggregate. Survey responses will be stored on a password protected computer in a locked university office.

**Your participation is voluntary**

Your participation in this research is entirely voluntary. You have the right to withdraw from this study at any time. There will be no penalty incurred or loss of any benefits by choosing to withdraw.

**Your consent**
Completion and submission of the questionnaire will be deemed as consent to your participation in this research.

To obtain further information regarding this study, please contact either Dr Leah Burns at leah.burns@griffith.edu.au or Ms Sally Healy at sally.healy@griffithuni.edu.au.

**The ethical conduct of this research**

Any research performed at Griffith University is conducted in accordance with the National Statement on Ethical Conduct in Human Research. If you have any concerns or complaints about the ethical conduct of the research project, you can contact the Manager, Research Ethics on 3735 5585 or research-ethics@griffith.edu.au.

**Privacy Statement**

Your personal information will be treated as confidential information and will not be disclosed to third parties without your consent, except where Griffith University is permitted to disclose the information by law or required by law to disclose the information to meet government, legal or other regulatory authority requests.

There are 8 questions in this survey

**Website Review**

Please follow the link to the website 'Your Food, Your Health'

http://animalproducts.site90.com/c122/

Spend as long as you like perusing the website, paying special attention to content, layout, formatting, and how the information might impact you as a consumer.

Once you have examined the website, please complete the following questions.

1 **How would you rate the presentation of the website?**

Please choose only one of the following:

- 1
- 2
2 In what ways do you think the website could be made more visually appealing?

Please write your answer here:

3 How would you rate the readability of the website?

Please choose only one of the following:

○ Very good
○ Good
○ Average
○ Poor
○ Very poor

How clear and easy to understand is the page?

4 What were your first impressions of the content of the website?

Please write your answer here:

5 Did you find the content interesting?

Please choose only one of the following:

○ Yes
○ No

6 Did you find the content useful?

Please choose only one of the following:

○ Yes
○ No

7 Do you think the information contained in the website has the potential to change people's behaviour?
Please choose **only one** of the following:

- Yes
- No

8 Please elaborate on your reasons for your response to the previous question

Please write your answer here:

Explain why or why not the information contained in the website may influence people's behaviour

Please submit by 30.10.2013 – 00:00

Submit your survey.

Thank you for completing this survey.
APPENDIX D.

INTERVIEW INFORMATION SHEET

Australian consumers' knowledge of animal agricultural practices: the relationship between knowledge and consumer behaviour

INFORMATION SHEET

Protocol Number

ENV/34/11/HREC

Chief Investigator

Dr Leah Burns
School of Environment
Griffith University
(07) 373 53649
Leah.burns@griffith.edu.au

Student Investigator

Sally Healy
School of Environment
Griffith University
(07) 373 56567
s.healy@griffith.edu.au

Background to the Research

You are invited to participate in a study conducted to meet the requirements of the Doctor of Philosophy programme undertaken by Sally Healy. This study will examine Australian consumers' knowledge of common animal agricultural practices as well as consumption and purchasing behaviours of animal products and attitudes towards animals.

What you will be asked to do

If you choose to participate in this study, you will be asked to participate in a semi-structured interview for 30-45 minutes. The purpose of the interview is to understand the ways in which your organisation perceives issues on farm animal welfare.

Your identity as a participant will not be disclosed to any unauthorized persons. Only the research team will have access to the research materials, which will be kept on a locked computer in a secure room. Your name will not be used in any published results unless you agree to this on the consent form.
The basis by which you were selected to partake in the research

The study is open to representatives from the animal protection sector, the farming industry and retailers.

The expected benefits of the research

This research will provide information on the ways in which animal protection groups attempt to improve the wellbeing of farm animals in Australia. This research will aid in the development and marketing of food items that place significant weighting on animal welfare in their production techniques.

Risks to you

We do not anticipate any risks to you as a consequence to participating in this study. However, if you do experience distress, you may wish to contact a counsellor at Lifeline on 131114. This service may be contacted without the need for prior or special approval.

Your confidentiality

Should you choose to participate in this study, you will not be made identifiable by your responses unless you provide permission to the researcher.

Your participation is voluntary

Your participation in this research is entirely voluntary. You have the right to withdraw from this study at any time. There will be no penalty incurred or loss of any benefits by choosing to withdraw.

Your consent

Your consent will be indicated by you signing and returning the attached consent form.

Questions/further information

To obtain further information regarding this study, please contact either Dr Leah Burns or Ms Sally Healy using the contact details provided on the first page of this document.

The ethical conduct of this research

Any research performed at Griffith University is conducted in accordance with the National Statement on Ethical Conduct in Human Research. If you have any concerns or complaints about the ethical conduct of the research project, you can contact the Manager, Research Ethics on 3735 5585 or research-ethics@griffith.edu.au.

Feedback to you
You will be invited to indicate to the researcher if you would like to receive the published results of this study during the interview.

Privacy Statement

Your personal information will be treated as confidential information and will not be disclosed to third parties without your consent, except where Griffith University is permitted to disclose the information by law or required by law to disclose the information to meet government, legal or other regulatory authority requests.
APPENDIX E.

INTERVIEW INFORMATION SHEET

Australian consumers’ knowledge of animal agricultural practices: the relationship between knowledge and consumer behaviour

CONSENT FORM

Chief Investigator
Dr Leah Burns
School of Environment
Griffith University
(07) 373 53649
Leah.burns@griffith.edu.au

Student Investigator
Sally Healy
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s.healy@griffith.edu.au

By signing below, I confirm that I have read and understood the information package and in particular have noted that:

- I understand that my involvement in this research will include participation in an interview
- I have had any questions answered to my satisfaction;
- I understand the risks involved;
- I understand that there will be no direct benefit to me from my participation in this research
- I understand that my participation in this research is voluntary
- I understand that if I have any additional questions I can contact the research team;
- I understand that I am free to withdraw at any time, without comment or penalty;
• I understand that I can contact the Manager, Research Ethics, at Griffith University Human Research Ethics Committee on 3735 5585 (or research-ethics@griffith.edu.au) if I have any concerns about the ethical conduct of the project; and

• I agree to participate in the project.

<table>
<thead>
<tr>
<th>Name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td></td>
</tr>
</tbody>
</table>

• I agree to have my name and the name of the organisation I am representing included in the publication of these interview responses:
  □ Yes  □ No

I would like to be sent the results of this study

  □ Yes  □ No


Cherry, C., Davies, P., Deen, J., & Sampedro, F. (2013). Do Alternative Livestock Production Systems Yield Safer Food?


FAO. (2016). The State of Food and Agriculture: climate change, agriculture and food security Rome: FAO.


Loughman, S., Haslam, N., & Bastian, B. (2010). The role of meat consumption in the denial of moral status and mind to meat animals. *Appetite, 55*(1), 156-159. doi: 10.1016/j.appet.2010.05.043


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WHO. (2011). Tackling antibiotic resistance from a food safety perspective in Europe


