



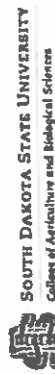
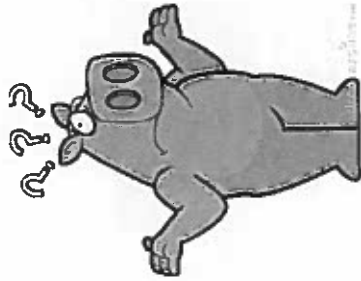
Literature Cited

- Heemstra, J. & T. Bass. (2015). Developing an Environmental Policy Statement for a Farm or Ranch Curriculum Materials. Livestock and Poultry Environmental Learning Center. Accessed at: <http://articles.extension.org/pages/33198/developing-an-environmental-policy-statement-for-a-farm-or-ranch-curriculum-materials>
- NRC (2012). Feed Management. Technical Note 8. Natural Resources Conservation Service. Accessed at: https://efotg.sc.gov.usda.gov/references/public/VT/TechNote8_FeedManagement.pdf
- O'Connor, A. M., Auvermann, B., Bickett-Weddle, D., Kirkhorn, S., Sargeant, J. M., Ramirez, A., & Von Essen, S. G. (2010). The Association between Proximity to Animal Feeding Operations and Community Health: A Systematic Review. *PLoS One*, 5(3). doi: ARTN e953010.1371/journal.pone.0009530
- Parker, D. B. (2011). Effectiveness of a Manure Scraper System for Odor Control in Tunnel-Ventilated Swine Finisher Barris. *Transactions of the ASABE*, 54(1), 315-324.



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PUBLIC ATTITUDES PREDICT COMMUNITY BEHAVIOURS RELEVANT TO THE PORK INDUSTRY

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Background

There is a complex set of economic, political, social and personal factors which impact on livestock production and marketing. Facets of public perception, which impact on livestock production practices, and on consumer and other behaviours, need to be understood to ensure industry sustainability. In particular, the attitudes of the general public to pig welfare, meat quality, health risks, environmental factors and farm intensification may affect future pork production practices directly through consumer buying behaviour and indirectly through public and consumer influences on regulatory legislation. This, in turn, may impact on international trade policy set by governments, and the standards set for the product by processors and retailers. Many of these influences currently are outside the control of the livestock industries.

While public concerns about animal welfare are well documented worldwide (e.g. European Commission, 2007; Parbery and Wilkinson, 2012; Gracia, 2013; Coleman *et al.*, 2015), the impact of these concerns for the livestock industries is unclear because there is limited evidence to directly attribute purchasing behaviour to public attitudes about animal welfare. In fact, there has been a small but consistent increase in pig meat consumption internationally over the years 1964 to 2015, with per capita consumption rising from 9.1kg to 15.3kg. However, most of this increase can be attributed to China, with the rest of the world remaining static over this entire period but showing some decline over that past 20 years, falling from 11.3kg in 1984 to 9.9kg in 2015 (Bruinsma, 2016). While many consumers report thinking about animal welfare when they purchase meat and meat products (European Commission, 2007; Department for Environment Food and Rural Affairs, 2011), concerns about welfare do not appear to be major drivers of those purchasing decisions (Coleman *et al.* 2005; Coleman and Toukhsati 2006).

There is accumulating evidence that public attitudes to animal welfare may be more relevant to community behaviours that potentially impact the livestock industries



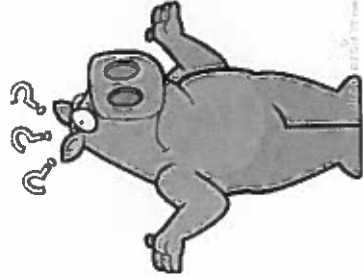
Literature Cited

- Heemstra, J. & T. Bass. (2015). Developing an Environmental Policy Statement for a Farm or Ranch Curriculum Materials. Livestock and Poultry Environmental Learning Center. Accessed at: <http://articles.extension.org/pages/33198/developing-an-environmental-policy-statement-for-a-farm-or-ranch-curriculum-materials>
- NRC (2012). Feed Management. Technical Note 8. Natural Resources Conservation Service. Accessed at: https://efotg.sc.gov.usda.gov/references/public/VT/TechNote8_FeedManagement.pdf
- O'Connor, A. M., Auvermann, B., Bickett-Weddle, D., Kirkhorn, S., Sargeant, J. M., Ramirez, A., & Von Essen, S. G. (2010). The Association between Proximity to Animal Feeding Operations and Community Health: A Systematic Review. *Plos One*, 5(3). doi: ARTN 9553010.1371/journal.pone.0009530
- Parker, D. B. (2011). Effectiveness of a Manure Scraper System for Odor Control in Tunnel-Ventilated Swine Finisher Barns. *Transactions of the ASABE*, 54(1), 315-324.



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There is accumulating evidence that public attitudes to animal welfare may be more relevant to community behaviours that potentially impact the livestock industries

than they are to purchasing and consumption behaviours. According to Coleman and Toukhsati (2006, p.21) "community behaviours that do not require public expression or public identification" are common in relation to livestock issues and "involve taking advantage of situational opportunities to express an attitude through action". These behaviours (e.g., signing petitions, donating money, speaking to colleagues about animal welfare issues) and the public opinions driving them can have a considerable influence on how Governments either react to publicised 'animal welfare events' or regulate contentious management practices in industry. This is especially the case when concerns are expressed by non-governmental animal welfare or rights organisations. The 'Save Babe' campaign is one such example where community pressure, harnessed by animal welfare/rights organisations, has led to changes in the Australian pork industry. In 2006, Animals Australia, a federation of animal welfare groups in Australia, launched the 'Save Babe' campaign to agitate against and raise public awareness about the containment of sows in farrowing crates (Animals Australia, 2016). This campaign and the community pressure that followed, led directly to industry changes whereby the revised Australian Code of Practice has included changes to the duration that gestating sows can be housed in stalls. Further to this, Coles, a major chain of supermarkets in Australia, subsequently announced that Coles Brand fresh pork products will come from sow stall free farms. This practice was subsequently extended to all pork products including bacon and ham (Coles, 2016).

Not only do community concerns and behaviours impact on how governments react to animal welfare events but they also impact more broadly on the livestock industry's social licence to practice. Animal welfare issues together with issues relating to climate change, water scarcity, and declining biodiversity all threaten farmer's social licence to farm. Social licence to farm is defined by Martin and Shephard as "...the latitude that society allows to its citizens to exploit resources for their private purposes" (2011, p. 4). Social licence is granted when industries behave in a manner that is consistent, not just with their legal obligations but also with community expectations (Gunningham *et al.*, 2004; Williams *et al.*, 2007; Arnot, 2009). Failure to fulfil the obligations inherent to social licence can lead to increased litigation, increased regulations, and increasing consumer demands all of which hamper the success of industries (Arnot, 2009). According to Martin and Shephard (2011), working with the community, understanding their opinions towards important issues like animal welfare and the environment and in a manner indicative of cooperation rather than working against them in a defensive manner, is the most successful means to addressing threats to social licence. In this light, exploring public opinions towards the livestock animal industry is an important first step to engaging with the community.

Within the community there is some evidence to suggest that *opinion leaders* may lead debate on social issues and provide a conduit for information from various sources to reach their social groups. Berkman and Gilson (1986) suggest that information received from opinion leaders is perceived by the public as more credible

The aim in this paper is to describe results from some of our research into the relationships between public attitudes and self-reported pork consumption and community behaviours.

Study 1

The first study (Coleman *et al.*, 2005) used a random telephone survey to Australian residents comprising of 691 respondents of whom 481 were females and 208 were males. Of these, 125 were interviewed at the point of sale to assess their actual pork purchases. Shoppers were informed that participation involved the completion of a two-minute assessment of their pork purchases ('Point of Sale' aspect) to be followed by a more detailed survey at a later date. Where shoppers acquiesced, they were asked a series of questions regarding their pork purchases. The main questionnaire assessed attitudes to animal welfare, some aspects of livestock farming and meat (Table 1).

Table 1. Example questions from Study 1.

Attitude component	Example questions
Knowledge of farming procedures in agriculture	Indicate which of the named practices are carried out in agriculture
Attitudes to meat as healthy	"Meat is healthy", "Meat is part of a balanced diet"
Attitude to animal welfare	"Free range food tastes better than intensively farmed food", "Farm animals have the same right to life as humans"
High score = high agreement	"How often do you hunt for ducks?", "How often do you hunt for rabbits?"
Frequency of hunting activity	"Meat is high in cholesterol", "Meat is high in fat"
Beliefs that meat is fatty	"The welfare of farm animals is an important consideration to me", "The welfare domestic pets is an important consideration to me"
Importance of animal welfare	Expressed dissatisfaction with livestock farming by signing a petition, written to a newspaper...
Behaviour to oppose farming	Expressed support of livestock farming by signing a petition, written to a newspaper...
Behaviour to support farming	Expressed willingness to oppose livestock farming by signing a petition, written to a newspaper...
Willingness to engage in welfare activist activities	"Humans should not eat meat", "No animal should die so that I have food"
Concerns about animals as food	"Concerned about pigs raised in pens", "Concerned about intensive egg farming"
Concerns about intensive housing	Concerned about "Free range egg farming", "Free range pig range"
Concerns about free range	Concerned about "Care of zoo animals"
Concerns about care of	

Pork is fatty	"Pork is high in cholesterol", "Pork is high in fat"
Pigs treated humanely	"Pigs have the same right to life as humans", "Pigs have the same feelings as domestic animals"
Pork is healthy	"Pork is a healthy food.", "Pork is part of a balanced diet"
Importance of promoting welfare	"All people should encourage their friends to support animal welfare causes", "It is important to me to be actively involved in the promotion of farm animal welfare"

In addition, respondents were asked about their engagement in activities in support of, or in opposition to, the pork industry.

Study 2

In the second study (Coleman *et al.*, 2016), a total of 479 participants (228 males, 251 females) were randomly selected from all states and territories within Australia. In this study the questionnaire assessed attitudes, behaviours to express dissatisfaction with the Australian livestock industries, the frequency with which respondents consume pork, the frequency with which they access or distribute livestock animal welfare information and the extent to which they trust various sources of livestock animal welfare information (Table 2). In addition, respondents were asked about their engagement in activities in opposition to the livestock industries. The questionnaire was different from that used in the earlier study, but there was some overlap (Table 2).

Table 2. Example questions from Study 2.

Attitude component	Example questions
Attitudes to livestock welfare	Livestock animals have the same right to life as humans People should do whatever is necessary (legal or illegal) to stop animals being used in livestock production Meat is part of a balanced diet Meat is a healthy food Livestock animal welfare standards in Australian abattoirs are very high * The standards of livestock animal welfare on Australian farms need to be improved * Increased regulation of the treatment of livestock animals is needed
Attitudes toward eating meat	I trust those responsible for transporting livestock animals by land to properly care for their animals I trust livestock animal handlers to properly care for their animals
Attitudes toward the livestock industries	Beef (meat) Sheep (meat) Pigs (meat) Dairy cows (producing milk) Sheep (wool) Goats (meat) Laying hens (producing eggs)
Trust in people involved in the livestock industries	
Ratings of livestock welfare	

Trust in available information

Radio
Television (e.g., TV news, documentaries)
Print media (e.g., magazines, newspapers, journal articles)

Accessing information on livestock welfare

Read livestock animal welfare related print media (e.g., newspapers, magazines, scientific papers)
Read or watch livestock animal welfare social network sites, related social media (e.g., Facebook, YouTube, Twitter)

Perceived knowledge

Read labels (product label)
The sheep (meat) industry
The beef industry
The sheep (wool) industry
The pork industry
The egg industry
Left to themselves, most livestock farmers would protect the environment.
I trust farmers in the livestock industry to protect the environment.

Attitude towards the livestock industries and the environment

Results

Consumption of pork

In Study 1, self-reported purchases were 1.8kg per month. Of the respondents who were surveyed at a point-of-sale, the average amount purchased per person on a single occasion was slightly above 220gms. Self-reported consumption correlated significantly ($r = 0.39, p < .001$). In the second study, amount of pork consumed was not measured, but 72% of the sample reported consuming pork products, at least once a week, with 31% consuming pork at least once a week.

In Study 1, a number of variables correlated significantly with self-reported total pork purchases. Concerns about 'animals as source of food', concerns about 'intensive housing', beliefs about the importance of 'animal welfare' and beliefs about the importance of 'promoting welfare' all correlated negatively with total pork purchases ($r = -0.11, -0.15, -0.12, -0.09$). All correlations were small, but significant. The belief that 'pork is a healthy food' correlated positively with self-reported pork purchases ($r = 0.20$) as did the belief that 'activists should not be involved in farming issues' ($r = 0.13$) while belief that 'pork is high in fat' and 'cholesterol' correlated negatively with such purchases ($r = -0.12$). When included in a regression equation, five variables (number of dogs and cats in the household, concerns about intensive housing of pigs, beliefs that activists should not be involved, beliefs that pork is healthy and willingness to engage in welfare activist activities) accounted for 8% of the variance in self-reported monthly pork consumption ($F_{(5, 489)} = 8.96, p < .01$).

In Study 2, self-reported frequency of pork consumption correlated negatively with attitudes towards livestock welfare ($r = -0.21, p < 0.01$) and positively with attitudes towards eating meat ($r = 0.27, p < 0.01$), attitudes towards the livestock industries

($r = 0.24, p < .01$), trust in people involved in the livestock industries ($r = 0.21, p < 0.01$), and ratings of livestock welfare ($r = 0.26, p < .01$). Multiple regression analysis showed that being male and holding positive Attitudes towards eating meat, and positive Ratings of livestock welfare significantly predicted self-reported pork consumption, accounting for 11% of the variance.

Community activities

The frequencies with which respondents reported being engaged in community behaviours in opposition to the livestock industries are given in Table 3. There was an increase in engagement in these activities between Study 1 (2005) and Study 2 (2014). Most respondents engaged in at least one community behaviour.

Table 3. Percentages of community behaviours in opposition to the livestock industries.

	Written to a politician		Called a radio talk back		Attended a public rally		Signed a petition		Donated money to animal welfare organisation		Volunteered services to animal welfare organisation		Spoken to colleagues, family or friends		Written to a newspaper	
	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2
	4.5%	9.4%	1.6%	2.3%	3.1%	7.5%	25.6%	36.3%	35.6%	46.6%	3.0%	11.7%	30.1%	55.3%	2.2%	4.0%

In Study 1, attitude variables accounted for 23% of the variance in self-reported community behaviours ($F_{(5, 489)} = 30.519, p < .001$). The only demographic predictor was the number of 'cats' and 'dogs' owned ($\beta = 0.15$). Amongst the generic attitude variables, belief in the importance of 'promoting animal welfare', belief in the 'importance of animal welfare' and attitude towards 'meat as healthy' made significant contributions to the prediction of community behaviours ($\beta = 0.21, 0.22$ and $\beta = -0.14$, respectively). The coefficients for the first two of these predictors were positive but the latter was negative indicating that people who believed that meat is healthy were less likely to engage in community behaviours. Those who thought pork to be 'high in cholesterol' were more likely to engage in community behaviours ($\beta = 0.08$).

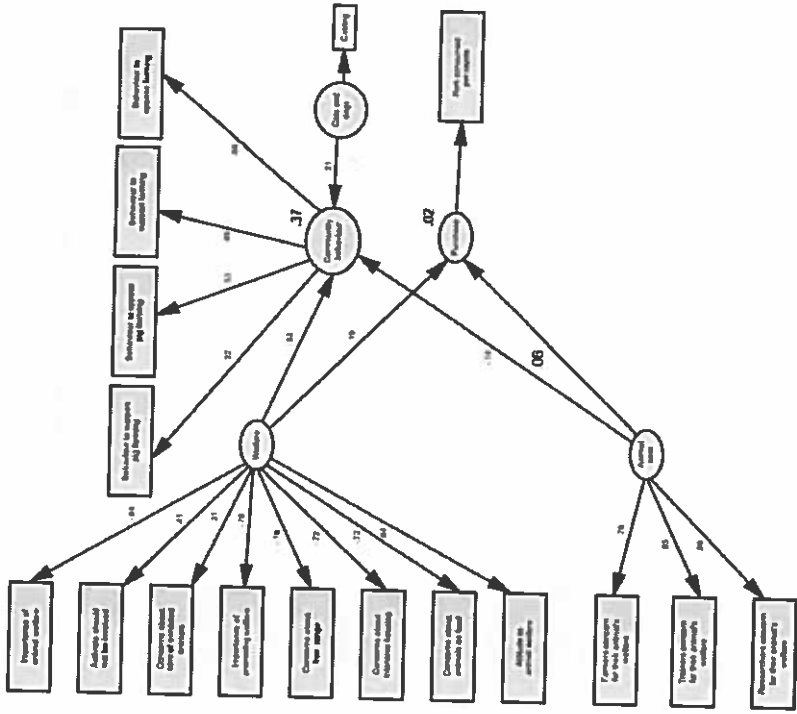
In Study 2, regression analysis identified seven variables (accessing information on livestock welfare, trust in available information, positive attitudes of livestock welfare, membership of an animal welfare group, positive attitudes to livestock welfare, income and attitudes towards the livestock industries and the environment) that independently explained 44% of the variance in community behaviours.

The regression results for both studies were then combined and summarised into a structural model using AMOS (Arbuckle, 2014; Figures 1, 2). Structural equation models are used to incorporate both latent (unobserved) variables and observed variables into a hypothesised causal model. Observed variables are represented by rectangles and latent variables by ellipses. Arrows from latent variables to observed variables point to the observed variables that are influenced by the latent variables. Arrows between latent variables depict a causal path. Numbers above the latent variables reflect R^2 (the proportion of variance explained), numbers above the arrows

between latent variables and observed variables reflect loadings for latent variables and numbers above the arrows between latent variables reflect regression coefficients for these hypothesised causal relationships. Goodness of fit of the model to the data is reflected in Cmin/df which measures the discrepancy between the observed covariance matrix and the covariance matrix predicted by the model. An acceptable value is < 3.0 . RMSEA is a measure of absolute fit and should be $< .05$.

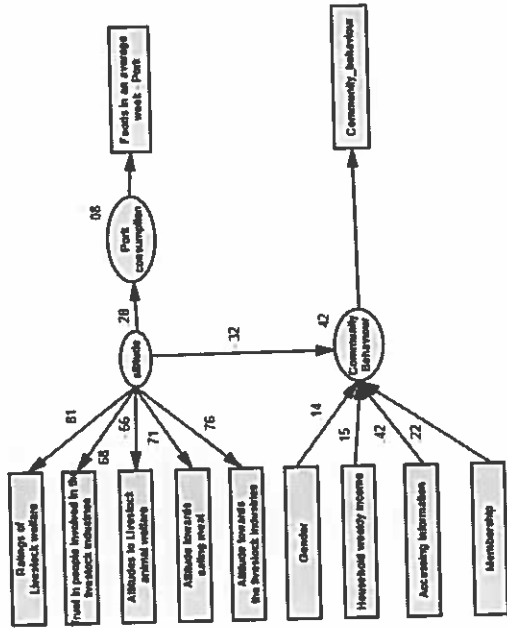
Both consumption and community behaviours were incorporated into this model; attitude variables were combined into a single latent attitude variable and the demographic variables of gender, income, accessing information on animal welfare and membership of animal welfare organisations were included as separate variables.

Figure 1. Structural model of the relationships between attitudes, demographic variables and self-reported consumer and community behaviours in Study 1. Cmin/df=2.10, RMSEA=0.047.



For Study 2, the model provided a good fit to the data ($C_{min}/df = 1.85$, $RMSEA = .042$). In this combined model, 8% of the variance in consumption and 42% of community behaviour were accounted for (Figure 2).

Figure 2. Structural model of the relationships between attitudes, demographic variables and self-reported consumer and community behaviours. $C_{min}/df = 1.85$, $RMSEA = 0.042$.



In Study 2, people were identified as opinion leaders based on their responses to three questions. The first item asked respondents to indicate, during the last six months, how many people they had told about Australian livestock animal welfare (1=Told no one, 5=Told a number of people). The second item asked respondents to rate the likelihood, compared to their friends, of being asked about Australian livestock animal welfare (1=Not at all likely to be asked, 5=Very likely to be asked). The last item asked respondents to, overall, indicate in all their discussions, with friends and family whether they were used as a source of advice on Australian livestock animal welfare (1=Not used, 5=Often used). Of the 479 respondents, 74 were identified as opinion leaders and they were characterised by a greater proportion that never ate pork compared with the rest of the sample, more concern about welfare issues, greater likelihood of being a member of a welfare organisation, and being engaged in many more community behaviours than did the rest of the sample (Mean = 3.5 vs 1.8). While there was no difference between opinion leaders and others with respect to actual knowledge of livestock husbandry practices, opinion leaders perceived their knowledge of the livestock industries to be greater than that of the remainder of the sample ($p < 0.01$).

Discussion

The findings showed that while animal welfare attitudes predicted self-reported pork consumption, the amount of variance accounted for was relatively small, being 8% in Study 1 and 10% of the variation in Study 2. These results are consistent with those reported in previous research (Coleman *et al.*, 2005) and with McCarthy *et al.* (2004) who found that, while welfare was a significant predictor of pork consumption, the main predictors were health, eating enjoyment and safety. The structural model for Study 1 showed a higher R^2 for predicting community behaviour than did the regression (37% for the model compared to 23% for the regression equation) but a lower R^2 for predicting pork purchasing (2% for the model compared to 8% for the regression equation). This suggests that the model was not a good representation of the data. However, the model for Study 2 did align quite well with the regression results.

In both studies, about three-quarters of the sample engaged in at least one of the 13 community behaviours to express their dissatisfaction with the way livestock animals are treated. Speaking to colleagues, family members, or friends and donating money to an animal welfare or animal rights group were the most frequent behaviours. In Study 2, respondents were more likely to speak to friends and colleagues (55.3%), sign petitions (36.3%) and volunteer at a welfare organisation (11.7%) than in Study 1 (30.1%, 25.6% and 3.0% respectively), but were equally likely to engage in community behaviours that do not require public expression or which involve substantial public exposure. These data indicate that community behaviour patterns are changing, due to actual increases in proactive behaviours such as volunteering and petition signing. These may reflect an escalation in community activities that may impact on the livestock industries. Altogether, substantially more variation in community behaviours could be accounted for by a combination of demographic, attitude and trust variables compared with pork consumption. Interestingly, in Study 2, actual knowledge of the livestock industries was not correlated with community behaviours.

While it was possible to identify a group of people (opinion leaders) who reported being used as a source of animal welfare information by those around them, age was the only demographic variable that distinguished this group, with younger people more likely to be opinion leaders. Membership of an animal welfare group was also an identifying characteristic. Opinion leaders were otherwise discriminated from non-leaders by their attitudes towards the livestock industries and their perceived, but not actual, knowledge of the livestock industries.

When asked which, if any, animal welfare or rights organisation people engaged with, the Royal Society for the Prevention of Cruelty to Animals (RSPCA) was the most common response. This may reflect an awareness of the role that the RSPCA has in monitoring animal welfare. It also indicates that people are more engaged with an animal welfare organisation rather than organisations that focus on animal rights. Opinion leaders, as a sub-sample, also nominated the RSPCA as the most trusted source of information (25.7%), with government and industry sources nominated as the most trusted source 12.2% of the time. Animal rights groups received no first nominations by opinion leaders.

Given that attitudes have been shown in this survey to be correlated with meat consumption and community behaviours, opinion leader attitudes clearly are important. However, opinion leader attitudes reflected a less positive view of the livestock industries and lower trust. Importantly, opinion leaders did not appear to be better informed about livestock husbandry practices than the general community, despite believing that their knowledge was high. In order that any discourse about licence to farm be well informed and rational, this group should be engaged in dialogues about pork production.

Conclusions

The results of this study show that community attitudes strongly predict engagement in community behaviours related to opposition of the livestock industry, and to a lesser extent, to consumer behaviours such as pork consumption. Approximately 15% of the sample was identified as opinion leaders, who tended to eat less pork, held less positive attitudes towards the livestock industry and engaged in a many more community behaviours. While these data may be somewhat more representative of the views of older, more educated Australians, they do suggest that future research is needed to advance understanding of opinion leaders and ways of engaging them in dialogue about pork production.

Acknowledgment

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References

- Arbuckle, J. (2014). Amos, Version 23.0. Chicago: IBM SPSS.
- Animals Australia SaveBabe Campaign. (2016). Retrieved from: https://secure.animalsaustralia.org/appeal/save_babe/. October 2016.
- Arnot, C. (2009). Protecting our freedom to operate: Earning and maintaining public trust and our social license. Paper presented at The Southwest Nutrition and Management Conference, Arizona, US.
- Berkman, H. and Gilson, C. (1986). ED, Consumer behavior: Concepts and strategies. Thomson South-Western.
- Bruinsma, J. (2016) World agriculture: towards 2015/2030 an FAO perspective. Retrieved from <ftp://ftp.fao.org/docrep/fao/005/y4252E/y4252e.pdf>. November, 2016.
- Coleman, G. J., Rohlf, V., Toukhsati, S.R. and Blache, D. (2017) *Animal Production Science* (Submitted)
- Coleman, G., Rohlf, V., Toukhsati, S. and Blache, D. (2015). Public attitudes relevant to livestock animal welfare policy. *Farm Policy Journal* 12, 45-57
- Coleman, G., Hay, M., & Toukhsati, S. (2005). Effects of consumer attitudes and behaviour on the egg and pork industries. *Report to Australian Pork Ltd and Australian Egg Corporation Ltd.*
- Coleman, G., & Toukhsati, S. (2006). Consumer attitudes and behaviour relevant to the red meat industry. *North Sydney NSW: Meat and Livestock Australia Limited.*
- Coles Responsible Sourcing. (2016). Retrieved from: <https://www.coles.com.au/corporate-responsibility/responsible-sourcing/responsible-sourcing>. October 2016
- Department for Environment Food and Rural Affairs. (2011). Attitudes and behaviours around sustainable food purchasing. London: Department for Environment, Food and Rural Affairs.
- European Commission. (2007). Attitudes of EU citizens towards animal welfare Special Eurobarometer (Vol. 270/Wave 66.1).
- Gracia, A. (2013). The determinants of the intention to purchase animal welfare-friendly meat products in Spain. *Animal Welfare*, 22, 255-265.
- Gunningham, N., Kagan, R. and Thornton, D. (2004). Social license and environmental protection: why businesses go beyond compliance. *Law & Social Inquiry*, 29(2), 307-341.
- Martin, P., & Shephard, M. (2011). What is meant by the social license? In J. Williams & P. Martin (Eds.), *Defending the Social License of Farming: issues, challenges and new directions for agriculture* Collingwood VIC Australia: CSIRO Publishing
- McCarthy, M., O'Reilly, S., Cotter, L. and de Boer, M. (2004). Factors influencing consumption of pork and poultry in the Irish market. *Appetite*, 43, 19-28.