

Behind a fluttering veil of trust: The dynamics of public concerns over farm animal welfare in Norway

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Abstract

Farm animal welfare has climbed on the public agenda over the last decades. However, while expectations of public engagement in animal welfare are high, the scholarly literature does not point out any clear dynamic behind public involvement. This article argues that people's trust in institutional actors is a key explanatory factor. Most people's connection to farm animals and farms is indirect and rather abstract. To paraphrase, people observe animal welfare through 'a veil of trust' in institutions. With dependence on the actions and information from institutional actors, the social dynamics of public concern are closely related to trust in these actors. Trust varies, depending on the social context. Based on a unique integration of Norwegian public opinion surveys conducted from 1997 to 2020, the article analyses how people's concerns and worries over animal welfare are linked to trust in the truth-telling of institutional actors. The generally high trust in institutions in Norway may therefore explain the continued low levels of public concern for animal welfare. But our analysis also shows that

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the ‘veil of trust’ in institutions flutters over time and between different categories of actors.

KEYWORDS

animal, concern, farm, public, trust, welfare

INTRODUCTION

This article asks how opinions on animal welfare have changed over the last decades based on a series of public surveys. We argue that a social dynamic between welfare concerns and trust in institutional actors is key to understand stabilities and changes in opinions.

Farm animal welfare has received considerable attention in recent years, giving good reasons for assuming that the public has become more concerned about living conditions for husbandry (Alonso et al., 2020; Bos et al., 2018; Miele & Bock, 2007; van Wessel, 2018). There has been a ‘dramatic expansion and diversification of knowledge, expertise and expectation associated with farm animal welfare’ (Bock & Buller, 2013, p. 390). This includes a revitalisation of public discourse and a mobilisation around the critique of modern rearing of farm animals, accompanied by philosophical arguments defending animal welfare and animal rights (Alonso et al., 2020; Regan & Singer, 1989). Some have linked this to a ‘foodie’ trend, with consumers of food becoming more concerned with the quality of food and how the food is produced (Baumann & Johnston, 2010). Along with social and political pressure for better standards in animal rearing, this has led to a significant reregulation, from ‘animal protection’ to ‘animal welfare’ (Pejman et al., 2019). Reregulation has entailed shifting divisions of responsibility, with market actors being expected to take a more active part in addressing animal care (Vogeler, 2019) and people being more responsible as consumers (Buller & Roe, 2014).

The reregulation is part of a more general political shift towards governance strategies emphasising sustainable and ethical consumption, engaging ‘consuming subjects and mobilizes the rhetorical figure of “the consumer”’ (Evans et al., 2017). The focus on so-called ‘welfare friendly food’ is part of and characterised by such a shift (Kjærnes et al., 2007). Different social roles are merged into a rather abstract citizen-consumer individual whose key function is as buyers of products and whose sovereignty is emblematic (Jacobsen & Dulsrud, 2007). These ideas have been criticised for being socially decoupled, ignoring the habitual and normative structures within which consumption of various kinds is embedded as well as the specific institutional and political systems that shape these structures (Chappells et al., 2004; Spaargaren, 2011). Consumption as well as governance are ‘situated’ in the shaping of markets, political discourses and citizen responses. We cannot assume a general diffusion of strategies emphasising consumer responsibility (Guthman, 2008; Kjærnes et al., 2013). More media and political attention do not translate into concern and action in a straightforward manner. Actors advocating (or playing down) needs for welfare improvements represent a variety of interests and promote a range of solutions (Kjærnes et al., 2007; Trentmann, 2006). Moreover, the publics are heterogeneous, representing a variety of practices and involved in a range of public discourses (Helliwell & Burton, 2021).

In analysing discourses—and opinions—on farm animal welfare, it is important to recognise the character of the industry. Modern animal production is a closed system with which few people have direct experience (Chiles, 2017). There is a lack of openness about how animals are de facto reared, and even less attention to complications, problems and challenges associated with

the rearing of husbandry (Napolitano et al., 2007). Regulations are often technical, referring to standardised monitoring systems. Few people meet farmers directly. For most people today, farm animal welfare remains a rather abstract term, encountered in public discourses and, perhaps, on product labels (Nocella et al., 2010; Velde et al., 2002). Therefore, assuming that animal welfare standards are satisfactory means trusting the actions of institutional actors within and outside the food industry. People outside the sector, be it as citizens and consumers or collective actors, have little insights into and control of the actions of these institutional actors. For most food issues, trust in institutional actors is found to be highly influential over the extent of public concern (Kjærnes et al., 2013; Miele & Evans, 2010), reflected even in animal welfare concerns (Ilbery & Kneafsey, 2000; Kjærnes et al., 2007; Nygård & Storstad, 1998). Inclinations to trust or distrust develop through basic socialisation and cultural adaptation as well as through fluctuations based on direct experience, institutional performance, media-mediated scandals and so forth (Bruegel, 2019; Kramer & Tyler, 1996; Misztal, 1996; Poppo et al., 2016; Vanneste & Yoo, 2020). Subsequently, the level of institutional trust (trust in institutional actors) is based on social as well as conditional elements and may represent one important reason why animal welfare concerns fluctuate and vary across countries (Kjærnes et al., 2007; Mann, 2019). Widespread consensus about the value of farm animal welfare has been observed across Europe, but the extent of worry varies significantly across regions (Eurobarometer, 2016; Kjærnes, 2013; Kjærnes & Lavik, 2007; Pejman et al., 2019). There are considerable disparities in institutional structures across Europe: markets, regulatory arrangements and civil society (Kjærnes et al., 2007; Mann, 2019). This article addresses the social dynamics between increased public concern for animal welfare and their generalised trust in the institutional actors that are responsible for animal welfare. Norway is selected as a case, allowing interpretations of such dynamics with reference to a specific political and institutional context and how that changes over time. More specifically, we ask whether publics' concern about animal welfare has changed over time by comparing two representative surveys of the Norwegian population conducted in 2005 and 2020. We also explored whether the population responded differently depending on social background, demographic factors, socioeconomic structures and place of residence in 2005 versus 2020. The next section presents the research design, the operationalised methodology and the sources of data in more detail. Thereafter follows a presentation of the empirical findings on trends over time and analyses of individual interconnections, with a subsequent discussion of the main findings and their implications.

RESEARCH DESIGN AND METHODOLOGY

A study of the dynamics between institutional context and public responses of concern and trust calls for a comparative design. The overall approach here is to compare and interpret survey data collected over a defined period according to individual and social variations among respondents as well as to relate these findings to what is already known about changes in the institutional context.

No prospectively planned data were available, and quantitative studies that could have been used to study shifts of opinion were not ample. Our institution, Consumption Research Norway (SIFO), Oslo Metropolitan University (formerly The National Institute for Consumer Research—SIFO), has, through a series of projects, been central in conducting population surveys with questions that may serve as indicators of public concern about farm animal welfare. A new survey repeated these questions. The time span was determined by the availability of relevant data, thus covering the period 1997–2020.

Data material

The selected surveys were population-representative and single-issue surveys that used standardised sampling procedures and questionnaires and were collected by polling agencies. While earlier interviews were conducted via telephone (computer-assisted telephone interviews [CATI]), the most recent involved a web-based panel survey. Together, these methods generated a unique mix of comparative survey data. More specifically, the following datasets were included:

1. On a mission from *The Information Office for Meat* (IOM), SIFO carried out surveys on meat and meat consumption over a period of 10 years (1997–2007; Lavik, 2008). The methodology was identical for all surveys: single-issue studies that included a large set of identical questions and answering categories, conducted with CATI by TNS Gallup Norway, using representative samples of the population 15 years and above. Our analyses here are based on surveys conducted in November/December, 1997; February/March 2000 and November 2007. The focus was not animal welfare per se, but two questions were selected to address concerns about meat generally and trust in the meat industry's concern for animal welfare in particular.
2. Population surveys were conducted in seven European countries (France, Hungary, Italy, The Netherlands, Norway, Sweden, UK) in February 2005. The survey was part of *Welfare Quality*, funded by the European Union's Sixth Framework programme (FOOD-CT-2004-506508; for details, see www.welfarequality.net/en-us; on methodology, Kjærnes et al., 2008). The questionnaire focused on the state of farm animal welfare and how concerns might be related to eating and purchasing practices, as well as the role of trust. The interviews were conducted with CATI among representative population samples in the selected countries, all co-ordinated by TNS Gallup London. For analysing the Norwegian responses, three sets of questions were selected, addressing concerns about the welfare of various farm animal species, optimistic/pessimistic views on changes in animal welfare over the last 10 years and trust in the truth-telling of various institutional actors in the case of a scandal concerning farm animal welfare.
3. The project *GoodAnimal*, funded by the Norwegian Research Council, studied the shifting Norwegian discourse on farm animal welfare over the last decades, drawing on a varied set of data sources. The project included a web-based survey conducted by TNS Gallup, with a population-representative sample of 18 years and above, drawn from their established panel. It was an active panel, recruited via random sampling. Representativeness was obtained using stratification based on age, gender and region. The sample size was 2036, constituting 94% of those who opened the invitation and 49% of all invitations. There was one reminder. The questionnaire was aimed at discerning perceptions of animal welfare among ordinary people, including questions repeated from the studies mentioned above. The selected questions are identical to the earlier surveys. The data were collected in February 2020.

Variables

The IOM surveys, with identical questions posed for more than 20 years, offer unique insights into shifting opinions. However, since some issues of current interest were not addressed in these surveys, we introduced questions and data from the Welfare Quality 2005 study (Table 1).

TABLE 1 Overview of variables on animal welfare concerns and trust

Repeated questions from the Information Office for Meat 1997, 2000, 2007 Good Animal 2020 surveys	
Question no.	Question (English translation)
1	<i>I will read four statements on meat and eating. Which of these statements will best express your opinion on meat eating?</i> – I have no concerns about my consumption of meat – I have some concerns about my consumption of meat, but I am not doing anything about it – I have some concerns about my consumption of meat, and I have therefore changed it
2	<i>I trust fully that the Norwegian meat industry provides meat from animals that have been treated well when alive</i> Answers: Fully agree, partly agree, neither agree nor disagree, partly disagree, fully disagree
Repeated questions from Welfare Quality 2005 survey and GoodAnimal 2020 survey	
Question no.	Question (English translation)
3	<i>In general, over the past 10 years, do you think that farm animal welfare has improved, is about the same or has gotten worse?</i> Answering categories: 'improved', 'about the same' and 'gotten worse'
4	<i>In your opinion, how well do you think the welfare conditions are for the following farm animals in Norway, on a scale from 1 to 5, where 1 is very poor and 5 is very good?</i> Questions on pigs, chickens and dairy cows
5	<i>Imagine a scandal concerning the welfare of chickens in Norway. Do you think that each of the following would tell you the whole truth, only tell you part of the truth, or would give misleading information?</i> Actors: press, television and radio; the food processing industry, food retailers, farmers or farmer organisations, animal protectionists, public food authorities, independent food experts Market actors: processing industry, farmers, retailers Civil society actors: Mass media, animal protectionists, experts

Unfortunately, we have not found more recent representative surveys on these matters that include Norway.

Socio-demographic questions varied somewhat from one survey to the next. They were, however, re-coded in order to obtain comparable categories. Still, this is one reason why the datasets were kept separate in the multivariate analyses. Indicators of social background included age, gender, educational level, income, urban/rural place of residence and household composition.

Methods of analysis

Descriptive and explorative analyses were used to answer our primary research question on change, comparing univariate distributions between the various datasets. The significance of differences was tested where relevant.

Multivariate and multiple linear regression analyses were conducted to, first, study the dynamic of welfare concerns and institutional trust, and second, explore socio-demographic variations in concerns—using trust as an intermediate variable. The dependent variable is an index measuring concern for animal welfare. The index is the empirical mean of questions on the welfare status of

TABLE 2 Multivariate linear regression. Dependent variable: Concern in animal welfare

Dependent: Concern	2005 (N = 1386)		2020 (N = 1493)	
	Coef.	p-value	Coef.	p-value
Trust in market (index)	-0.399	< 0.001***	-0.712	< 0.001***
Trust in food auth.	-0.070	0.063*	-0.099	0.006***
Trust in news media	-0.047	0.159	0.099	0.004***
Trust in experts	0.008	0.830	0.087	0.017**
Trust in animal welfare org.	0.083	0.006***	0.358	< 0.001***
Constant	3.427	< 0.001***	3.104	< 0.001***
Adjusted R-squared	0.06		0.26	

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

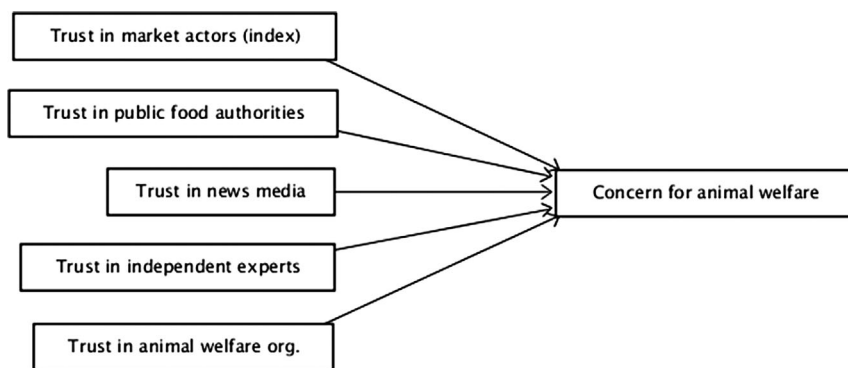


FIGURE 1 Path diagram structure of multivariate regression (Model 1)

different animal species (pigs, chickens and cows) in 2005 and 2020 (see Table 2, question no. 4). A higher mean score is related to being more concerned, that is, thinking that animal welfare is poor. For the index reliability test, Cronbach's alpha was calculated to be 0.75 for 2005 data and 0.84 for 2020 data, the overall Cronbach's alpha was 0.79. The focus was on whether social patterns of influence over concerns for animal welfare have changed. Questions from Welfare Quality and GoodAnimal were the most suitable. Different aspects of trust are measured with several variables. Trust in market actors is also measured by an index, which is the mean score of trust in the food industry, the supermarket chains and the farmers. Cronbach's alpha for the index in 2005 and 2020 was 0.68 and 0.75, respectively. The same regression analysis was applied for both years. Structural equation modelling with latent variables used instead of indexes was also attempted, with similar results (results are not shown since they did not add further insights). The structure of the regressions is given in the path diagram in Figures 1 and 2. Figure 1 shows a multivariate linear regression where trust variables are regressed on concern for animal welfare (index: see above). This regression equation is linear and estimated with ordinary least squares (OLS). In Figure 2, we have expanded the regression equation by including socioeconomic variables regressed on trust variables and concern for animal welfare. The trust variables act as mediators for socioeconomic variables. The regression equations in Figure 2 are estimated simultaneously with maximum likelihood and bootstrapped variance estimates. The regression analysis is not attempting to estimate average treatment effects; instead, it looks at the predictive power and associations between crucial variables and animal welfare concerns.

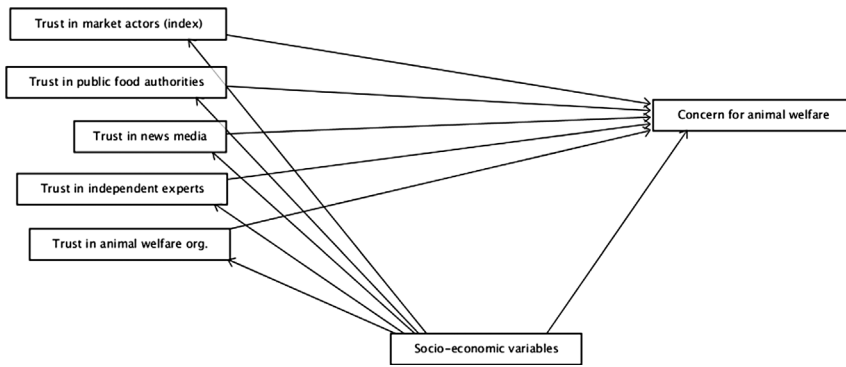


FIGURE 2 Path diagram of multiple regression with trust variables as mediators (Model 2)

RESULTS

First, we study the links between concerns about eating meat and trust in the meat industry, comparing IOM data with those from 2020. We then move on to direct indicators of welfare concerns, based on Welfare Quality data, presenting more specific analyses of changing patterns of concern and institutional trust. Third, we conduct multivariate analyses of shifting patterns of influence by institutional trust and socio-demographic indicators upon concerns for animal welfare.

Concerns about eating meat and beliefs in industry standards, 1997–2020

An open question about concerns over meat and meat eating has been asked repeatedly over a period of more than two decades. This is the longest period for which we can systematically monitor public attitudes towards meat in representative surveys in Norway. Figure 1 shows that, overall, the proportions of respondents who were concerned about eating meat have remained remarkably stable over this long period. Even the distribution between those doing something about their concerns and those who are not has changed very little. A stable low proportion of vegetarians is a feature of Norwegians' food habits seen in many studies and is thus not very surprising (Bahr Bugge & Alfnes, 2018).

A range of issues may cause concerns about eating meat, such as health, environmental issues, discomfort about killing animals and animal welfare. However, one question in this series of surveys addresses animal welfare, asking whether the respondent thinks that the Norwegian meat industry supplies meat from animals that have had a good life, on a scale from 'fully agree' to 'completely disagree'. Table 2 (column 'All') indicates that throughout the period, most Norwegians were not very concerned—only a minority disagreed. In the four first surveys, this stability held even for the overall distribution of answers. However, a shift can be observed in the 2020 survey, from agreeing fully to partly agreeing or neither agreeing nor disagreeing. This pattern may indicate increased uncertainty about the meat industry's attention towards animal welfare.

By combining this question with the one on concerns about eating meat, we investigated possible links between animal welfare issues and concerns about eating meat. Table 1 (column 'Conc.') shows responses to the question on animal welfare in the meat industry among those who had concerns about eating meat and had changed their diet. Overall, we can see that in this subgroup, throughout the period, many more were dissatisfied with welfare conditions in the meat industry.

Here, the disagreement that the industry treats animals well seems to increase somewhat after the turn of the century. In 1997, 23% overall disagreed that meat comes from well-treated animals, while 35% disagreed among those concerned about meat and had changed their diet. The corresponding figures for 2020 were 14% and 43%. This may, indirectly, signify that over the last couple of decades, animal welfare has become more significant as a motivation for concerns about eating meat, even though the overall proportion of those concerned (not only related to animal welfare) has not increased.

To conclude, we did not observe any clear trend when it comes to public concerns about meat eating. On the contrary, the data indicate a remarkable stability here as well as in views on animal welfare standards in the meat industry. Throughout the period, only a minority were sceptical about welfare standards in the meat industry. However, for those who *did* have concerns about eating meat, worry over animal welfare seemed to matter more in 2020.

Concerns about animal welfare standards, 2005 and 2020

In order to explore in more detail changes in people's evaluation of farm animal welfare, we turned to questions from the Welfare Quality survey from 2005, repeated in 2020. One question asked whether the respondent thought animal welfare had improved or gotten worse over the last 10 years. Figure 2 reflects Norwegians' optimism, showing that in both years, the majority thought conditions had remained about the same or had improved, with about the same low proportions in the two surveys (10% and 12%) saying that the trends were negative. However, we can see a shift from an optimistic attitude of improvement towards a more neutral view that little has changed in the last decade. One might describe this as a tendency of people having become somewhat more hesitant rather than clearly more worried and sceptical towards animal welfare standards in Norwegian husbandry.

Questions about how respondents judge welfare standards in different animal sectors may clarify this further. Table 2 shows how the respondents saw the status of welfare among dairy cows, chickens and pigs. The ranking of the species is generally in line with earlier studies (Skarstad et al., 2007). Overall, welfare was judged most positively for dairy cows; a large majority in both 2005 and 2020 viewed the situation for cows as good, but more people viewed the situation as poor in the 2020 material. While worries were greater for pigs, and even more so for chicken, changes over time were not very noticeable, except for lower proportions seeing chicken welfare as very poor. These trends are consistent with what was discussed above: a tendency of slightly more hesitation, perhaps some scepticism, and uncertainty. The proportions clearly stating worries over farm animal welfare are still quite limited, with unclear tendencies compared to the 2005 data. The mean values for each species reflect relative stability. Indexes based on mean values show no clear trends for each of the three species, and the overall mean is similar for the two years. The average value per observation across species was used as an index in the multi-variate analyses.

Responses to these two sets of questions suggest, overall, stable opinions about the state of farm animal welfare in Norway over this 15-year-period, thus lending support to the findings from the IOM survey questions. There are changes, but no clear trends. There might, however, be underlying tendencies when it comes to the social mechanisms that produce public scepticism and concerns or, on the contrary, optimism about the state of farm animal welfare.

The significance of trust

We suggest that institutional trust should be considered to understand the social dynamics of public welfare concerns. Our study included a Welfare Quality question about trust in the truth-telling

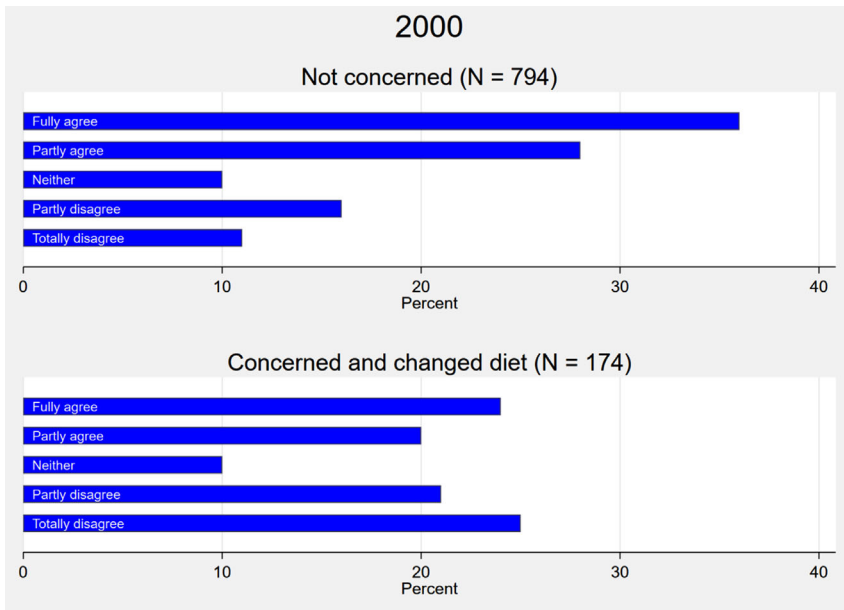


FIGURE 3 Answers to question: To what degree do you trust that the Norwegian meat industry delivers meat from well-treated animals. Separated by those who are not concerned and/or have not changed their diet and those who are concerned about their meat-eating habits and have changed their diet/are vegetarians. Data from 2000.

of institutional actors in the case of a scandal related to animal welfare. Figure 3 shows similar overall patterns in 2005 and 2020. Even though trust in various actors is correlated, there is a clear ranking order between them related to their societal roles. While experts are highly trusted to tell the truth, market actors are all met with scepticism. The manufacturing industry and retailers are ranked the lowest. Public authorities are highly trusted, nearly as much as experts. Compared to the 2005 survey, opinions seem to have changed 15 years later for some of the institutional actors. Trust in truth-telling is still low for all market actors, being further reduced for retailers. Public authorities are met with widespread trust, but with some reduction in the proportion of respondents expecting them to tell the whole truth. Changes are small for trust in the truth-telling of experts and mass media. However, scepticism has increased significantly when it comes to animal welfare non-governmental organizations (NGOs), where the proportion of respondents believing they give misleading information has doubled. The average distribution for all actors has changed very little over the 15-year-period (average value for all actors is 2.2 for both years), indicating that trust in institutional actors is quite stable regarding the issue of animal welfare (cf. Figure 4).

Concern and trust

Changes over time in trust in the truth-telling of various social actors may indicate institutional change and how ordinary people relate to institutional actors when it comes to concerns for animal welfare. Using linear regression and data from the Welfare Quality project and the GoodAnimal project, we conducted a descriptive analysis of how trust patterns are linked with concerns for animal welfare. The dependent variable was the overall index for concerns about

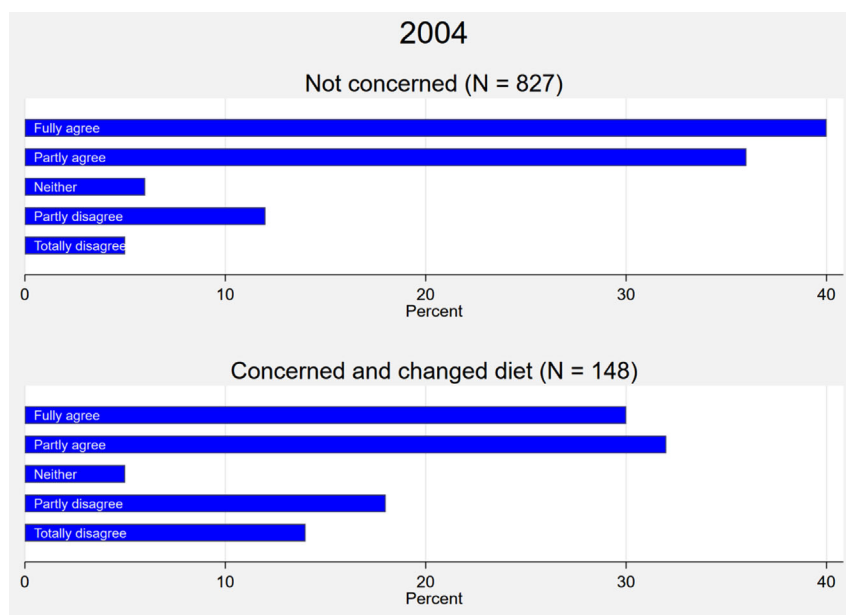


FIGURE 4 Answers to question: To what degree do you trust that the Norwegian meat industry delivers meat from well-treated animals. Separated by those who are not concerned and/or have not changed their diet and those who are concerned about their meat-eating habits and have changed their diet/are vegetarians. Data from 2004.

TABLE 3 Multivariate linear regression. Dependent variable: Concern in animal welfare

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Constant	3.427	< 0.001***	3.104	< 0.001***
Adjusted R-squared	0.06		0.26	

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

various animal species (Table 2). Table 3 shows that trust in the truth-telling of institutional actors is significantly correlated with the level of concern, most importantly trust in market actors. Thinking that market actors—retailers, the processing industry and farmers—give misleading information in the case of a scandal is linked to high levels of concern. The direction of causality may be both distrust leading to more concern and high concern leading to people questioning information from all or specific institutional actors. Comparing the analyses from the two datasets, we can observe that the correlation between trust in institutional actors and concerns for the welfare of pigs, chickens and dairy cows has become stronger. In 2020, trust in public authorities and civil society (news media, independent experts and animal welfare) actors matters more. Strong distrust in public authorities and market actors is associated with higher concerns. Our

interpretation is that people's worries about animal welfare are logically connected to their distrust in the actors who influence the treatment of farm animals directly. The effect is the opposite for civil society actors; trust in those actors is associated with higher concern for animal welfare, the interpretation being that worries about animal welfare are logically and positively linked to their trust in civil society actors and their efforts to mobilise. R^2 , indicating the explanatory power of the model, is not very high, but it has doubled over the period—trust has become more important despite quite stable levels of concern. This dynamic is further explored by bringing in socio-demographic background indicators.

Concerns, trust and social background

Concerns will vary socially. This analysis searched for underlying trends in the population, asking whether socio-demographic differences in concerns have changed over time. Our main interest was whether such changes may indicate underlying trends of concern and trust. Gender tends to matter for all food-related issues, but gender roles may change. The same goes for age, both as a matter of life-cycle influences and generational shifts. Did the young in 2005 nurture new views on animal welfare that they retained as they aged? The abstract relationship with farm animals and reliance on indirect information may mean that the well-educated are more prone to change. Furthermore, the increasing commodification of animal welfare may encourage those with higher purchasing power to become more engaged. A rural/urban distinction may reflect distance to animal farming as well as cultures of production and consumption. Trust represents links with institutional actors that affect concerns directly but may also have a mediating—or even augmenting—role in these social differences.

The linear regression model follows the same setup as for the analyses of trust, with the concern index as the dependent variable. The socio-demographic variables included age, gender, educational level, rural/urban place of residence, household composition and income level. The model included trust in institutional actors as an intermediate variable (see Figure 2).

Table 4 shows that trust is significantly associated with welfare concerns, even when controlled for socio-demographic background factors. The coefficients for the trust variables are about the same as in the model that includes only the trust variables (no background variables), with similar findings for both the 2005 and the 2020 data. Thus, variations in trust seem to operate mainly along alignments other than the included background factors—and this has not changed over time.

There is a significant effect of age, with the oldest age group being less concerned in both datasets. This suggests life-cycle effects rather than a generational shift over time. Norwegians seem to become more accepting of methods in animal farming as they grow older. Not surprisingly, there is a stable tendency of men to be less concerned, compared to women. While households with children generally tend to be more engaged in food issues, this does not seem to be the case for animal welfare concerns. Nor are single persons, who might be expected to be more involved in social activism, more concerned. The life-cycle effect is therefore not clearly linked to specific situations, such as student life or having children. On the other hand, socioeconomic differentiation has increased somewhat, but depending more on economic than educational resources. There is very little effect of education, a pattern that is consistent over time. Variations according to income level have increased over the 15-year-period, becoming significant in the 2020 data.

Interestingly, the effects of place of residence seem to grow over time. In 2005, people in rural districts, which are closest to farms, were clearly less concerned. In 2020, the contrast was between people living in large cities and those who do not. This may suggest that urbanisation effects

TABLE 4 Regression results with trust acting as mediator for socioeconomic variables, estimated as a linear structural equation model with maximum likelihood method (Stata 16)

Dependent: Concern	2005 (N = 1205)		2020 (N = 1359)	
	Coef.	p-value (bootstrapped)	Coef.	p-value (bootstrapped)
Trust in market (index)	-0.374	< 0.001***	-0.690	< 0.001***
Trust in food auth.	-0.092	0.035**	-0.112	0.001***
Trust in news media	-0.021	0.526	0.096	0.008***
Trust in experts	0.007	0.855	0.069	0.114
Trust in animal welfare org.	0.069	0.026**	0.323	< 0.001***
Age 0–29	(Reference group)			
Age 30–65	-0.093	0.121	-0.103	0.215
Age 66 and up	-0.251	0.003***	-0.230	0.006***
Elementary school	(Reference group)			
High School	-0.070	0.436	0.156	0.095**
Uni./College ≤ 4 years	-0.057	0.539	0.191	0.027**
Uni./College > 4 years	0.071	0.470	0.233	0.020**
City > 200,000	(Reference group)			
200,000 > City > 80,000	-0.007	0.937	-0.137	0.051*
80,000 > City > 20,000	-0.089	0.093*	-0.074	0.197
Rural Areas	-0.108	0.030**	-0.157	0.018**
Female	(Reference group)			
Male	-0.181	< 0.001***	-0.153	< 0.001***
Income (in 100 NOK)	< 0.001	0.947	-0.024	0.066**
Single and no child	(Reference group)			
Married/couple	-0.003	0.964	-0.019	0.699
Single with child	-0.081	0.385	0.034	0.735
Other or living with parents	-0.065	0.493	-0.065	0.499
Constant	3.697	< 0.001***	3.427	< 0.001***
R-squared (coefficient of determination)	0.08		0.31	

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

reflect more mechanisms than geographical distance. Looking at the whole model, the explanatory power for the 2005 data has not become stronger by including socio-demographic background factors; these factors add little to explain variations in concerns. In 2020, the R^2 is still not high, but it has more than doubled compared to 2005. This may suggest that the socio-demographic differentiation of opinions on animal welfare has increased somewhat over time.

Overall, the linear regression analyses of variations in animal welfare concerns indicate that trust in institutional actors is important for public concerns for animal welfare, especially distrust in market actors. This seems to be a direct link, and the significance of this effect on welfare concerns has increased over time. We found limited social differentiation in concerns in both datasets, with an urban/rural divide being most important. The contrast between large cities and the rest of the population has grown in 2020. Demographically, young urban women remain the most concerned.

DISCUSSION: PUBLICS' CONCERN AS A REFLECTION OF THEIR INSTITUTIONAL TRUST

Are concerns for farm animal welfare increasing among the publics? European surveys conducted in the 2000s found that opinions on farm animal welfare were positive, but their understanding of welfare improvement was nonetheless limited (Miele & Evans, 2010). Many have therefore assumed growing personal worry and engagement (Clark et al., 2017). Several reasons for how and why people become concerned have been suggested (Rovers et al., 2017). For example, some have underlined the increasing division and exclusion of consumers from modern animal production (Miele & Evans, 2010). Others have pointed to the ethical responsibility that individuals have, especially as buyers of food (Lund et al., 2021) and trends of 'foodism' (Baumann & Johnston, 2010). While such reasons may explain long-term trends, they are not easily applied to understanding regional and national variations and changes. In this study, we focussed on the institutional and practical relationship between citizens and the system of animal production (Alonso et al., 2020). We suggest that trust in institutions is a key factor for the dynamics of concerns, linked to specific societal roles and institutions. Civil society actors (experts, mass media, NGOs) are generally viewed as the most open, while opinions on public authorities are more divided. Many share the view that market actors may give misleading information in the case of a scandal (Kjærnes et al., 2007, 2013). Major industry actors are often seen as propagators of intensive production methods that are not good for the animals.

A study of public opinion surveys in Norway has allowed us to explore welfare concerns and institutional trust as a dynamic process over time. Our findings indicate that the level of public concern about animal welfare in 2020 is not distinctly different from the situation earlier (timespan from 1997 to 2020). Using several indicators of public concerns, the overall impression is remarkably stable low levels of concern. These trends appear whether the question refers to concerns about one's own meat-eating habits more generally, beliefs in the animal industry's efforts, judgements about changes in the animal sector over time or welfare standards for various animal species. However, while concerns about eating meat have not increased, worries about welfare standards in the industry seem to matter more for those with such concerns.

There are few other studies with which ours can be compared. Public opinion studies have, in recent years, focused primarily on engagement by purchasing 'welfare-friendly' animal products (e.g., see Lund et al., 2021). Such studies rarely question whether generally positive attitudes towards welfare issues are reflected in concern and engagement. More sweeping statements of increasing concerns seem to be based more on public discourses and collective mobilisation than on asking the general public—as citizens and consumers. Eurobarometer findings underline, first of all, the considerable variation across Europe in public opinions on farm animal welfare. Our analyses give support to earlier observations here as elsewhere of low welfare concerns and high institutional trust among Norwegians, compared to citizens of other countries.

The socio-demographic variations we observed are similar to those found by others (Clark et al., 2017; Cornish et al., 2016). Even here, we found considerable stability. Gender roles and expectations are persistent within this area, mirroring food as a female responsibility. This is somewhat surprising since the general division of labour with food has diminished in the Nordic countries over the last couple of decades (Holm et al., 2015). Likewise, the stability of age differences makes it questionable whether higher concern among the young is an indication of emerging trends among younger generations. Increased significance of income may, however, indicate a slight tendency

of higher consumer-related consciousness about animal welfare among Norwegian respondents, since buying more expensive welfare-friendly products requires purchasing power.

The continued, perhaps even strengthened, urban–rural divide underlines that distance from animal production—geographically and (probably) culturally—matters. In contrast to observations by others, there is limited influence of education (Clark et al., 2017). Being intellectually educated enough to process abstract information seems to matter less than being close to animal production. Apart from this geographical dimension, there is little evidence of growing polarisation on animal welfare issues in Norwegian society, with few signs of growing concern emerging among specific groups in the population. Stability dominates even for institutional trust. Compared to other European countries, Norwegians have had high trust, especially trust in public authorities and the State (Kjærnes et al., 2013). For the most part, we observed small changes over time.

Taken together, we find stable and low levels of concern, correlating with high trust in institutional actors. We interpret this as continued belief in the Norwegian system of animal production. This wide consensus is, however, built on rather abstract notions (Skarstad et al., 2007). A study of the discourse on sheep welfare found a somewhat romanticised and superficial public image of the status of welfare in animal production. Positive issues dominate over critique and the level of knowledge is low (Amilien & Kjærnes, 2017). Such abstract understandings and expectations may be associated with the typically Norwegian regulatory regime (Brunstad et al., 1997; Bullock et al., 2016; Espeli, 2008; Sorensen & Tennbakk, 2002). This regime is characterised by backstage decision-making involving producer organisations, experts and public authorities. The Norwegian food market has limited product differentiation, especially when it comes to ‘ethical dimensions’ such as animal welfare. Public discourse has been dominated by beliefs in universally acceptable standards of animal welfare (Marie, 2012; Sorensen & Tennbakk, 2002). The way of joint, consensual handling animal welfare issues seems to have continued support in Norway, with persisting low levels of concern.

Yet, the higher importance of trust for the level of welfare concerns in the 2020 data may indicate that opinions have become somewhat more concrete and conditional upon what the industry, the authorities and the NGOs say and do. Distrust in market actors, especially manufacturers and retailers, was observed throughout the observation period as in other studies (de Jonge et al., 2008; Rovers et al., 2017). However, in the most recent survey, it has become an even stronger factor for explaining strong concerns. Here, distrust in food authorities and civil society actors has also become more important. Noticeably, views on animal welfare NGOs have become more polarised over time. This may reflect a changing system, with more media attention and mobilisation against problems in animal production, new labeling initiatives and an emerging discourse on meat eating. Openly opposing the Norwegian system—by, for example, animal welfare organisations—is controversial. Such features have been prominent in many other countries for quite some time, where we also have seen more engagement among ordinary people (Parekh & Klintman, 2021). All along, critique has been expressed in Norwegian social media, but the audience and significance of this critique may be growing.

Asking about changes in opinion over time requires access to relevant data. This study was based on retrospective analyses of identical questions asked to population-representative samples in public opinion surveys over a period of 23 years. Rather than optimising the validity of the questions, we have had to adapt to those that are available. The results must therefore be interpreted as indications of public opinions on animal welfare rather than a full-fledged and validated model. Moreover, even though all the surveys addressed meat issues, their overall structure was not identical. Added to that, the most recent survey from 2020 was web-based instead of the CATI

used in the earlier surveys. The strengths of our method are the repetition of identical questions in the most recent survey and contextualised interpretations.

CONCLUDING REMARKS

The country case we present here allows an in-depth study of the dynamics between the publics' concern about animal welfare and their trust in the institutions in society that are responsible for animal welfare. Trust in these institutions has repeatedly been found to be high, compared to other Western countries (Kjærnes et al., 2007). The Norwegian 'system' is expected to ensure high welfare standards (Marie, 2012; Skarstad et al., 2007). Like most European countries, Norway has seen significant contextual and institutional shifts. Processes of urbanisation and agricultural intensification have continued. A new law on animal welfare from 2009 reflected the expanded visions for animal rearing (Forsberg, 2011; Stenevik et al., 2011). Market initiatives of using animal welfare in product differentiation and marketing have—slowly—emerged (Bahr Bugge & Alfnes, 2018). Climate change, including emissions from meat production, has climbed to the top of the agenda in public discourse. In addition, upsetting episodes on farms and in abattoirs have revealed abuse and blatant breaches of animal welfare standards. So far, there have been few reports on how the general public has responded to these changes. This article fills a knowledge gap by addressing the social dynamics between increased public concern for animal welfare and the publics' generalised trust in the institutional actors that are responsible for animal welfare (the publics' degree of 'institutional trust').

The legitimacy of the animal production industry has been questioned in recent years. People's responses to this have been variably characterised as overly concerned and activist and as taking on too little responsibility. In this article, the approach has been that concern and engagement in farm animal welfare among ordinary people is likely to vary, depending on time and place, focussing on institutional trust as an important mechanism. First, we asked to what extent societal changes over time have influenced Norwegian public opinions on animal welfare as suggested in academic and political discourses. Our findings indicate remarkable stability in Norwegians' opinions on these matters; welfare concerns continue to be low. Second, we asked to what extent opinions are interconnected with changes in institutional trust or distrust. We found close links between concerns and institutional trust, with trust in market actors being most important. Importantly, the significance of trust for welfare concerns has increased over time. Third, we asked whether people have responded differently over time, depending on social background. Here, too, we found only minor changes, with stable impacts of demographic factors, such as age and gender. There are some signs of a growing rural–urban divide.

All in all, trust in specific institutional actors seems to be key to understanding the dynamics of public concerns about animal welfare in modern production and provisioning systems. Contrary to assumptions in the literature, we found low levels of concern and engagement and few indications of change. The association between low concern and high trust in institutional actors is interpreted as widespread and stable beliefs that the Norwegian regulatory model of agriculture and husbandry ensures satisfactory standards. This regulatory model implies little information to and involvement of ordinary citizens in public discourse on farm animal welfare and as buyers of 'welfare-friendly food'.

To paraphrase, citizens are confronted with farm animal welfare indirectly through a 'veil of trust' to those institutional stakeholders that influence the state of farm animal welfare directly. The veil is fluttering in the sense that its transparency and acceptance may change over time

and may function differently for various institutional actors that are ‘behind the veil’. That may hold true even when it comes to transnational comparison and consequently also the potential for generalising our specific findings from Norway to other countries. Our findings are in line with earlier empirical studies that revealed differences between nations when it comes to publics’ generalised trust in their (nation-specific) institutions that are responsible for appropriate animal welfare standards (Kjærnes, 2008). Institutions matter for public opinions. This implies that our findings from Norway cannot be automatically generalised to other countries. The social dynamics between concern for animal welfare and trust in actors will unfold differently, in line with the core variables we have explored here. The idiosyncratic story to draw from the Norwegian case is that recent changes in trust in institutional actors have become more important for whether and how people are concerned about animal welfare or not. In the Norwegian case, this may reflect that animal welfare has become somewhat less abstract, being more thematised and problematised in public discourses. When confronted with these discourses, people’s responses are likely to depend on general social and political inclinations rather than experience-based insights. For instance, the growing importance of the urban–rural divide may lend support to this interpretation since those people living closer to farm animals tend to be less concerned than citizens living more distant from husbandry. It is insufficient to counter this situation by promoting ‘romanticised’ images of the living conditions of husbandry. It is up to further research to address animal welfare more explicitly from this ‘politicised’ perspective.

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CONFLICT OF INTEREST

The authors declare no conflict of interests.

DATA AVAILABILITY STATEMENT

Research data are not shared.

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