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Local People Standings on Existing Farm Animal Welfare Legislation in the BRIC Countries and the USA. Comparison with Western European Legislation

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ABSTRACT



This study explored the demand for improved farm animal welfare (FAW) legislation in the BRIC countries and the USA. Results are discussed in comparison to Europe. Interviewees ranked their willingness to support or oppose introduction of more FAW-friendly laws in their country. A multinomial logistic regression was fit to the data ($p < 0.001$), with the parameters “country \times gender” ($p < 0.001$) and “country \times age” ($p < 0.001$) found significant. Americans, Russian women, and older Brazilian men are very supportive. The age effect is also felt in India, where older people are more supportive. Chinese, American men, and younger Indians are less supportive. Russian males are the group that oppose the most, followed by younger Brazilians and Indians. The law and its application vary a lot between countries. Nevertheless, the societal willingness to improve FAW legislation is high in all countries. The willingness is higher in Europe. The different cultural backgrounds, the socio-economic factors, and the social, economic, and environmental sustainability are enough reasons to create barriers to policy harmonization in the global trade of farm animal products.

KEYWORDS

Animal welfare law; BRIC countries; USA; Western Europe; farm animal trade

Introduction

The first piece of national legislation related to animal welfare is reported to have been passed by the Irish Parliament in 1935 and refers to the “Act against Plowing by the Tayle and pulling the Wooll off living sheep” (Lane, 2011). In 1641, the Puritans of the Massachusetts Bay Colony have also legislated “The Body of Liberties” with liberty 92 forbidding the cruelty to animals (AWI, Animal Welfare Institute, 1990). The Cruelty to Animals Act was passed in Britain in 1876. In 1966, the USA passed The Animal Welfare Act, which was amended in the following decades. In Europe, several countries have also passed legislation that was amended over time. The EU took the lead in the legal recognition of animal sentience in 1999 through the Treaty of Amsterdam, which was later complemented with a protocol on protection and welfare via the 2007 EU Treaty of Lisbon, adopted in 2009, and entering into force with a 2010 Directive (EU Parliament and Council of the EU, 2010). This recognition has been replicated in many other parts of the world (e.g., Canada, Colombia, New Zealand, Switzerland, Turkey, Ukraine, and USA) (Blattner, 2019). Article 13 of the Treaty on the Functioning of EU stipulates that, “as sentient beings, full regard should be paid to animals’ welfare

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requirements” (EU, 2012). The five freedoms are contained in the Council of Europe’s Convention for the Protection of Animals kept for Farming Purposes since 1976 (CE, Council of Europe, 1976).

At a global level, UNESCO issued The Universal Declaration of Animal Rights in 1978. More recently, 180 countries adopted the OIE Global Animal Welfare Strategy 2017, including the recognition of animal sentience, and up to 46 countries are supporting the UN to issue the Universal Declaration on Animal Welfare (Mellor, 2019).

The five well-known freedoms were coined by the Farm Animal Welfare Advisory Committee (later the Farm Animal Welfare Council) in Britain, in reaction to the Brambell report of 1965. The Brambell report was itself also a reaction to the public wake up call caused by the Harrison’s Animal Machines book, published for the first time in 1964. This chain reaction is the cornerstone of modern animal welfare science, advocacy, and legislation. Only vertebrates have been considered in animal welfare acts; however, recently in the UK, octopuses, crabs, and lobsters were recognized as sentient, which extends the Animal Welfare (Sentience) Bill (DEFRA, 2022). The Western European countries lead in animal rights recognition and in advancing legislation on animal welfare.

Animal welfare science has a relatively short history; however, it is in the present time an established discipline. Advances in the study of the physiological and affective states of the farmed animals have contributed to the identification of anthropogenic suffering in animals, or the suffering caused in animals by the human intervention. As a result, animal welfare advocacy, consumer demand, and legislation have followed the scientific achievements (Buller, Blokhuis, Jensen, & Keeling, 2018).

People in different countries of the world have different views and perceptions regarding animal welfare advances as well as legislative implementations. The globalized trade is facing challenges, with consumers in different countries perceiving animal welfare differently. The countries known by the acronym BRIC (Brazil, Russia, India, and China) together with the EU and the USA are the main international traders of animal products (EU 22%, USA 15%, Brazil 9%, China 4%, India, and Russia 3% each). The BRIC countries accounted for 40% plus of the world population and more than 50% of the world’s gross agricultural production in 2018 (Ren, Li, Wang, & Zhang, 2020).

The NGO World Animal Protection developed the Animal Protection Index as a tool to assess the animal welfare policies and legislation in countries around the world. This Index uses a scale A to G (better to worse) to rate the countries. The BRIC countries, the USA, and Western European countries have different overall rates, with Western European countries leading (UK, France, Sweden, Denmark, Switzerland, Austria, Netherlands all rated B and Spain, Italy, Germany, Italy all rated C). India (C) follows, USA, Russia, and Brazil, are in between (D) and China (E) has a low rate. Relative to the legislative component of this rate and specifically regarding legislation protecting the animals used in farming, this index rates European Countries (B, C, and D), Brazil (D), the USA and India (E), and Russia together with China (G) have the worst rate.

Legislation, norms, or standards in different countries vary, and the extraterritorial consequence is the likelihood of being disputed at international level (Mercier, 2019). The World Trade Organization (WTO) has a dispute settlement body that may impose penalties on countries legislating against international agreements of free trade. Disputes arise with regard to animal welfare legislation once this may be perceived as protectionism by exporting countries, while seen as an ethical issue by the importing country. Under article XX of the General Agreement on Tariffs and Trade (GATT) a country is allowed to impose international trade restrictions with basis on ethical reasons, namely animal health.

The first objective of this study is to explore the demand for improved legislation on farm animal welfare in the BRIC countries and in the USA. The second objective is to explore and discuss the scope to improve legislation in comparison to Western European standards. The discussion of differences and demands for changes in animal welfare legislation, is a valuable contribution to the debate of national and international policy harmonization, and this is the main aim of this study.

Material and methods

Source of data

The data was sourced by Faunalytics after the conduction of an exploratory study of attitudinal and behavioral differences among people in the “BRIC” countries (Brazil, Russia, India, and China) plus the United States (Anderson, 2018).

Data were collected by YouGov® in May and June of 2018. The Brazilian, Russian, and Indian samples were representative of adults in urban areas. The Chinese sample was representative of adults online. The USA sample was nationally representative of adults. The sampling effort is about 1000 interviewees per country.

Data collection

Data were collected in the BRIC countries and the USA through questionnaires carefully translated into the local languages. The translation was performed by two bilingual individuals and these two versions were compared and revised for alignment of discrepancies.

The surveyed items were carefully designed and subjected to an expert consultation phase prior to translation, per standard recommendations for cross-cultural surveys. A back-translation procedure was then used to maximize equivalence between countries and languages. Recommendations for keeping the wording as simple and direct as possible were also followed, using symmetrical response scales and using both positively and negatively framed items. Data included demographics (age, gender) and nine survey items, four of which are part of the present study. Interviewees were asked, “To what extent would you oppose or support a law in (Country) that would require animals used for food to be treated more humanely?” Where country reads Brazil, Russia, India, China, or the USA depending on where the survey is taking place.

A five-level Likert scale was used to capture the information: 1 strongly oppose, 2 oppose, 3 neither oppose nor support, 4 support, 5 strongly support. The option “don’t know” was also available.

Statistical analysis

The original dataset was explored for the existence of outliers and as a result 31 observations were removed from the analysis. The method used in the identification of the outliers was the Tukey’s method, with the production of boxplots. Relatively to the question posed, 272 individuals answered, “don’t know” and were also eliminated from the statistical model fitted to the data and were analyzed independently. To investigate the opposition/support to the question posed, the response scale was used as a dependent variable and entered a multinomial logistic regression, function of the demographic variables age, gender, and country. The significance of the model was assessed with the $-2 \log$ likelihood chi-square test. The significance of the parameters was tested via Wald chi-square test.

The assumptions for the chosen model were evaluated as follows:

- (1) The dependent variables must be measured at nominal level with at least three values. This is straightforward once the dependent variables are defined in the five levels of the used Likert scale;
- (2) The independent variables can be continuous, ordinal, or nominal (including dichotomous). Ordinal variables need to be treated as continuous or categorical. The variables in this study are ordinal treated as continuous (age), and nominal, both for gender (dichotomous, male, or female) and for country;

- (3) Independent observations and mutually exclusive and exhaustive categories of the dependent variable. Observations are independent once they arise from different individuals. Individuals were asked to respond only in one of the five categories of the Likert scale covering the whole range of possible answers;
- (4) Inexistence of multicollinearity between independent variables. Checked through the correlation between these;
- (5) Linearity between any continuous independent variables and the logit transformation of the dependent variable. Checked through the Box-Tidwell transformation test.
- (6) Inexistence of outliers, which is ensured by their identification and removal from the dataset to be analyzed.

The statistical package used in the analysis was the IBM Corp.[®] SPSS[®] Statistics, Armonk, NY, USA. Version: 28.0.1.1 (15). For graphic construction, the software Microsoft[®] Excel[®] for Microsoft 365 MSO (version 2204 Build 16. 0. 15,128. 20,240) 64-bit, was used.

Analytical procedure

After adjusting the models, to facilitate the interpretation of the results, it was decided to aggregate the categories 1 (strongly oppose) with 2 (oppose) and 4 (support) with 5 (strongly). Three new main categories were therefore created: oppose, neutral, and support. These are the categories herein represented graphically and subject to result interpretation and discussion.

Results

Descriptive statistics

A total of $N = 4916$ individuals were entered in the analysis (Brazil $n = 996$, China $n = 963$, India $n = 938$, Russia $n = 910$, USA $n = 1108$). A total of $n = 2378$ males and $n = 2537$ females entered the analysis. The distribution of ages within countries is shown in [Figure 1](#). The distribution of ages within a gender is shown in [Figure 2](#). As can be observed, data are well balanced for gender, while for age it is slightly skewed toward younger ages in China and India. When considering all three independent variables together we observe a slight skewing toward younger ages in Chinese females, while for other countries gender is well balanced ([Figure 3](#)).

Fitted model

The multinomial logistic model successfully fits the data. The main effects were tested altogether with a forward stepwise inclusion of interactions. The calculation of the probabilities (P_i) of a national to fall in a particular score while evaluating the question is performed with the generic equation

$$P_i = \frac{\exp(X_i\beta_i)}{1 + \sum_{i=2}^5 \exp(X_i\beta_i)} \quad (1)$$

where P_i is the probability to score each of the “ i ” scores (2, 3, 4, 5). The equations’ parameters ($\beta_i X_i$) are arranged in a linear manner adopting the form

$$\beta_m X_m + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_1 X_m + \beta_4 X_1 X_2 + \beta_5 X_1 X_2 + \beta_6 X_1 X_2 X_m \quad (2)$$

where:

β_m is the parameter associated with “Country” (Brazil, China, India, and Russia), being X_m the dummy associated with this parameter, taking the value one when the respective country is considered in the equation and zero otherwise. β_1 is the parameter associated with the covariate

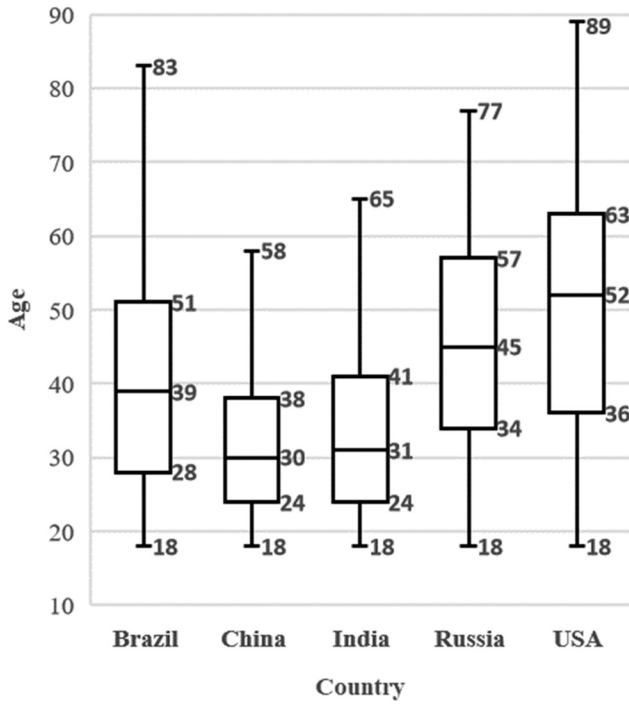


Figure 1. Sampled variables distribution. Ages within countries.

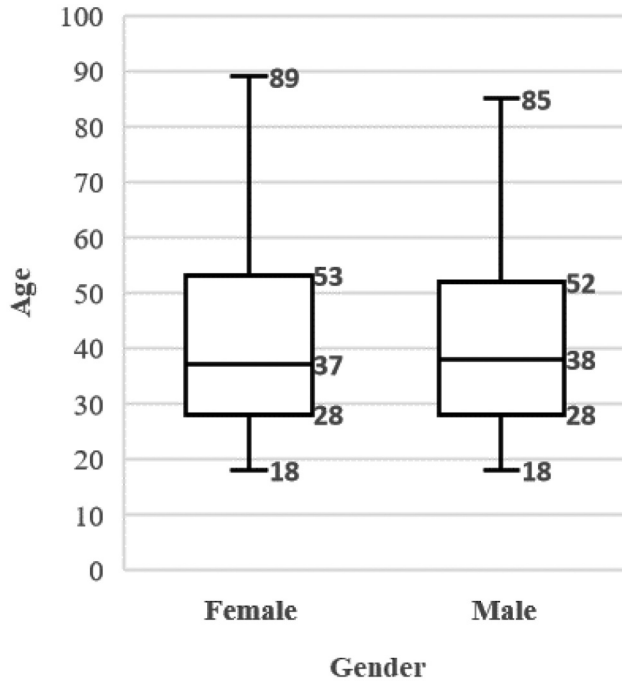


Figure 2. Sampled variables distribution (quartiles). Ages within gender.

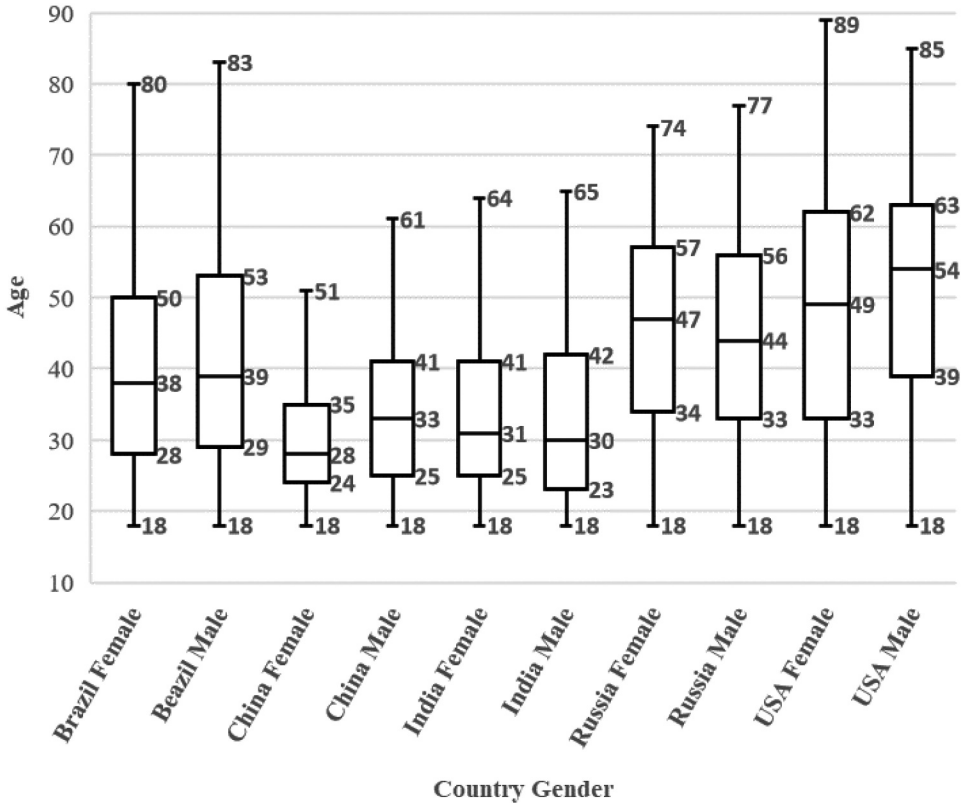


Figure 3. Sampled variables distribution (quartiles). Ages within gender and countries.

“Age,” being X_1 the age. β_2 is the parameter associated with “Gender,” being X_2 the dummy associated and taking the value of one for males and zero for females. $\beta_3, \beta_4,$ and β_5 are the parameters associated with the double interaction terms (“Age*Country,” “Age*Gender,” and “Country*Gender”), and β_6 is the parameter associated with the triple interaction “Age*Gender*Country.”

Score 1 (strongly oppose) is used as reference and, therefore, for the calculation of P_1 in equation (1) the numerator assumes the value 1.

The Box-Tidwell transformation test for the dependent continuous variable “age” is not significant ($p = 0.806$) and, therefore, there is a linear relationship between “age” and “logit(age),” and the model assumption 5 is met. The values of the correlations between the independent variables are very low and not significant ($p > 0.05$) (Table 1) and therefore the inexistence of multicollinearity meets the assumption 4.

Table 1. Type your title here. Obtain permission and include the acknowledgment required by the copyright holder if a table is being reproduced from another source. Correlations between the dependent variables to be used in the models. These correlations are not significant ($p > 0.05$).

	age	gender	country
age	---	0,020	0,244
gender	0,020	---	0,035
country	0,244	0,035	---

Table 2. Parameters of the multinomial logistic model fitted to the data. The scores given to the question “To what extent would you oppose or support a law in your country that would require animals used for food to be treated more humanely?” used as a dependent variable, are modeled as functions of the independent variables “Country,” Gender” and “Age” together with the interactions between these. Only significant parameters are shown. Score 1 is used as reference in the model.

Score	Parameter	β	$\exp(\beta)$
3	Country*Gender		
	China, Female	2.995***	19.988
	China, Male	2.910***	18.251
	India, Female	0.864*	2.373
	India, Male	0.731*	2.078
	Russia, Female	1.659**	5.254
	USA, Male	1.301***	3.672
	USA, Female	1.668**	5.301
4	Country*Gender		
	China, Female	2.496**	12.139
	China, Male	1.999*	7.379
	Russia, Female	2.039***	7.684
	USA, Female	1.564*	4.776
	Country*Age		
Brazil, Age	0.021*	1.021	
5	Country*Gender		
	Brazil, Female	0.868*	1.131
	Russia, Female	1.806**	6.085
	USA, Female	2.554***	12.863
	USA, Male	1.366**	3.921
	Country*Age		
	Brazil, Age	0.031**	1.031
	India, Age	0.036***	1.036

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

The model is significant ($p < 0.001$), $-2 \log$ likelihood 4852, chi-square (2590, 60df), and AIC 4972. The parameters found to be significant were the interactions ($-2 \log$ likelihood, chi-square, df, p-value): “country \times gender” (5128, 277, 40, $p < 0.001$), and “country \times age” (4943, 91, 20, $p < 0.001$). The description of the significant parameters of the model is given in Table 2. The graphical representation of the model is given in Figure 4.

American and Russian women are the most supportive groups of more welfare-friendly legislation. Brazilian men in ages above 50 are even more supportive. The age effect is also felt in India, with both men and women at older ages showing high levels of support. The Chinese and the American men are least supportive, as are younger Indians.

Russian males are the group that opposes the most, followed by younger Brazilians and Indians. American and Russian women are the groups opposing the least, as well as the Chinese.

The Chinese are those showing a higher degree of neutrality, the Brazilians the lower, with the others in between.

Relatively to the undecided respondents (Table 3), the Chinese and the Brazilians are the less doubtful with a few respondents only answering “don’t know.” But in general, few respondents were undecided (a total of 5,53%).

Discussion

Around 58% of the interviewees in this study supported changes in the laws of their countries, to require higher levels of FAW, 12.2% opposed, 24.8% were neutral and 5.2% answered “don’t know.” Therefore, most of the interviews in the BRIC countries and the USA are sensitive to FAW issues that need the introduction of legislation.

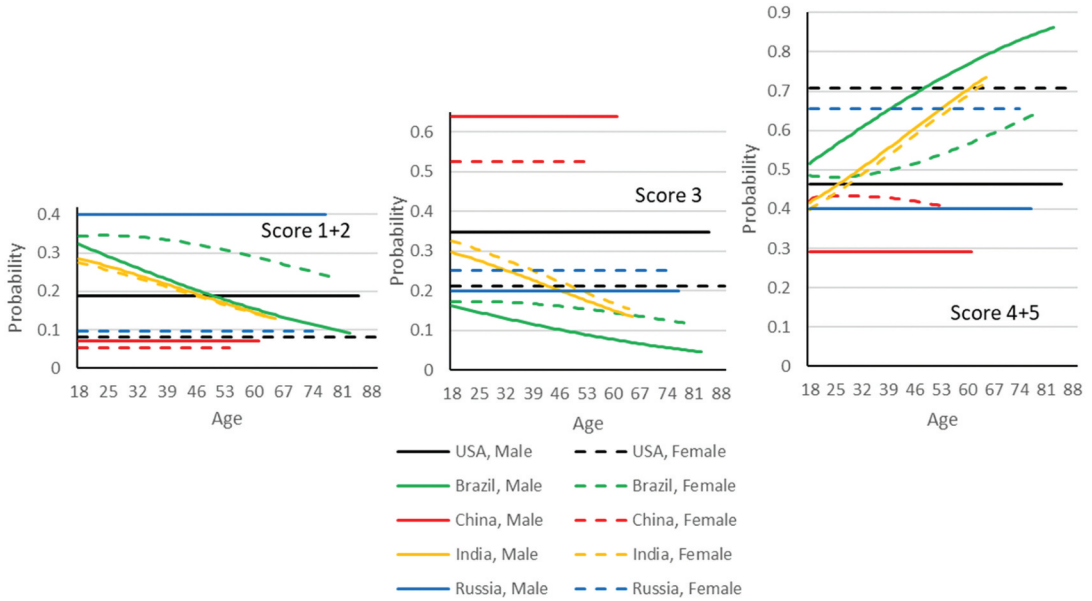


Figure 4. Graphical representation of the multinomial logistic model fitted to the data. The scores 1 is aggregated with score 2 and 4 with 5. Probabilities associated with opposition (scores 1 + 2), neither oppose nor support (score 3), and support (scores 4 + 5) given to the question “to what extent would you oppose or support a law in your country that would require animals used for food to be treated more humanely?”

Table 3. Number of respondents “do not know” to the question “to what extent would you oppose or support a law in your country that would require animals used for food to be treated more humanely?” by country, gender and group (country and gender).

Group	n	Country	n
USA Male	24	USA	73
USA Female	49	Russia	92
Russia Male	39	India	66
Russia Female	53	Brazil	31
China Male	3	China	10
China Female	7		
India Male	36	Gender	n
India Female	30	Male	115
Brazil Male	13	Female	157
Brazil Female	18		

Animal welfare legislation in the different countries

Western Europe

The Brambell Committee in 1965 in the UK initiated the farm animal welfare (FAW) revolution. In 2015, the German Agriculture Ministry’s Scientific Committee called for changes in how animals are farmed due to lack of viability based on unsustainability and social and human acceptance (Schweitzer, 2015). The EU countries follow legislation prescribed by the EU Parliament Directives, but also legislate individually. For this reason, there are some differences in legislation between the European countries. However, European Council regulations and decisions are also mandatory European standards. Also, some Western European countries do not belong to the EU (e.g., Switzerland) and the UK has left the EU. Nevertheless, the Western European countries lead in

the introduction of new FAW legislation, and both Switzerland and the UK are among the leaders within Western Europe.

In a survey carried out in 2016 in the EU, the Europeans reiterated their concern about FAW. The result showed that 94% of the Europeans believe in the importance of protecting the welfare of farm animals, with Portugal topping the rank with a total of 99% agreement. Most of the Europeans (82%) support improved protection to the farm animals, with only 12% do not support and 6% do not know. In relation to the international trade of farm animal products, 93% of the Europeans agree that imported products should meet the European animal welfare standards, and 90% agree that international animal welfare standards should be promoted across the world (European Commission, 2016). More recently (EC, European Commission, 2022), also in a survey directed to citizens and stakeholders in the EU, the respondents agreed that animal welfare legislation has improved in the EU. However, it is also recognized that there is still a sub-optimal welfare of animals in the EU.

In Western Europe, individual initiatives of communities or companies also have additional self-imposed standards. The Welfare Quality® concept is an example of an assurance scheme that is also being followed in countries outside Europe.

The United States of America

The Animal Welfare Act was passed in 1966 and later revised several times (USDA, 2019). In the USA, the Federal legislation is traditionally difficult to be implemented in the different states and reforms tend to be implemented at the state level (von Keyserlingk & Hötzel, 2015). As a result, anti-cruelty laws exist, but in some states farm animals are exempt from these laws (Bryant & Sullivan, 2015). Animal advocates have played an important role in regulating FAW through public opinion lobbying, campaigning and by exposing cruelty (Centner, 2010). This has resulted in agreements with the main retailing corporations for compliance with anticruelty practices. These retailers pass this compliance to the producers and certified animal-friendly products that arrive on their shelves (Bryant & Sullivan, 2015).

While in Europe Legislators lead in animal welfare rules, in the USA the changes have been driven by the society, which slows the process (Schweitzer, 2015). Outside Western Europe and the USA, public opinion and political capacity are more limited, which results in the predominance of economy over social demand (Schweitzer, 2015).

In the USA, ≈62% of the population (women 76% and men 46%) support the introduction of new legislation favoring higher FAW standards. On the other hand, only ≈13% oppose and the level of neutrality is ≈21% (≈19% in men and 8% in women). This high level of support does not go unnoticed by the large corporate marketing departments, therefore the self-imposed animal welfare standards. The USA rates E in the Animal Protection Index (API), alongside India, and is placed below the Western European countries and Brazil, and above China and Russia. The difficulties in implementing federal legislation, with legislative heterogeneity between the several states push this rate down despite the individual initiatives of several stakeholders.

Brazil

Animal anticruelty law in Brazil was early adopted in 1934 by the federal decree on animal anticruelty, and later in 1988 entered the constitution (Art.225, §1, "II): *“Protect the fauna and the flora, with prohibition, by the manner prescribed by law, of all practices which represent a risk to their ecological function, cause the extinction of species or subject animals to cruelty.”* However, animal welfare science, and particularly FAW science in Brazil lags behind Europe 20 years, with impact in education and consequently perception, awareness and ultimately legislation (Sousa, Leite, & Molento, 2015). Therefore, the implementation of educational programs directed to farmers, slaughterhouse personnel, technicians, and stakeholders in general, has been of fundamental importance in tackling low qualifications of those involved in animal product operations (Sousa et al., 2015). NGOs have also been playing an important role in making the public aware of FAW

issues, resulting in an increase in certification of FAW friendly products (Sousa et al., 2015). The Permanent Technical Commission on Animal Welfare from the Brazilian Ministry of Agriculture has worked in the development of codes of recommendations following the OIE standards, aimed to be followed, after education programs (Governo do Brasil, 2017). The European market has pivotal importance in the Brazilian animal product exports, and therefore EU legislation has also been driving Brazilian stakeholders' compliance, through certification of FAW friendly products (Sousa et al., 2015).

Overall, the Brazilian population shows the higher level of support (70%), between the countries in this study for the introduction of more friendly FAW legislation. An age effect is observed, with older Brazilians shown to be more supportive. Brazil is the country with lower levels of neutrality, and the levels of opposition, despite low, are relatively high when compared to the other countries in the study.

Apparently, both the education programs and animal rights activists have had an important role in the results observed in this survey. These results are also a reflection of the API for the country (D), placed below the more advanced Western European countries, but alongside some of them, and above all the other countries in this study.

China

The only piece of legislation in China protecting animals from cruelty is the Art. 246 of the 1997 Criminal Law that states: "Whoever, for purpose of retaliation or from spite or other personal motives, destroys machinery or equipment, cruelly injures or slaughters draught animals or uses other means to sabotage production or business operations, shall be sentenced to fixed-term imprisonment of not more than three years, criminal detention or public surveillance."

The Chinese public awareness of FAW started with the translation of Peter Singer's *Animal Liberation* in the 1990s published in Taiwan, and from there introduced in mainland China (Li, 2006). The concept of FAW was initially a foreign view that with the economic growth, global cultural interchange has arrived at China as a new phenomenon. China has a cultural tradition of presenting live animals in markets where these are slaughtered at costumers' sight as a guarantee of freshness. This is just one of the many examples of poor animal welfare practices in China to the western standards. China has started to legislate on FAW, introducing in 2006 the Farm Animal Transport Act. In 2008 legislation was also introduced to regulate the slaughtering of pigs. More recent legislation was also introduced to regulate the farming conditions of pigs, beef cattle, and sheep (Nizamuddin & Rahman, 2015). Lack of education in the field of animal welfare and an animal welfare scientific community still lagging behind, incapable of scaling up a critical evaluation of certain traditional animal practices, have been identified as major constraints regarding animal rights in China (Lu, Bayne, & Wang, 2013; Sinclair & Phillips, 2019). The growing demand for animal protein from a large population has been accompanied by an increase in intensive farming, posing serious problems to FAW. China is the main pork producer at a global level. Nevertheless, the Chinese Government has recognized animal welfare and rights philosophies, opening the way to a societal debate on the topic (Lu et al., 2013). The Chinese Government is also aware of cultural differences and reserves the right to develop its own laws without interference of the western culture views (Sinclair & Phillips, 2019).

Recent studies (Carnovale et al., 2021) have shown that for a large portion of the Chinese population, FAW perception is absent. This is expressed in this survey, once the Chinese were those showing the lower level of support for the introduction of more friendly FAW legislation ($\approx 40\%$ in women and $\approx 30\%$ in men). Despite these results, they also show a low level of opposition ($\approx 5\%$ in both genders), and therefore the levels of neutrality are very high ($\approx 63\%$ in men and $\approx 52\%$ in women). Unawareness and cultural traditions conflicting with FAW perceptions may be the explanation for the results obtained in this survey. The API rating of China (G) places the country, together with Russia, below any other country in this study.

India

Mahatma Gandhi has once announced that “*the greatness of a nation and its moral progress can be judged by the way its animals are treated*” and this fact led to legislation soon after India’s independence. India’s Constitution introduced the principle of compassion toward living things, including animals, through item g) of the article 51A. India has introduced the Prevention of Cruelty to Animals (PCA) act in 1960, however this has been criticized in present times for being indulgent and ineffective in the protection of animals’ rights (Kavuri, 2022; Nayak & Chaudhury, 2020). Indian legislation is portrayed as obsolete and not preventing cruelty to animals (Kavuri, 2022). Lack of education and unawareness of animal rights and lack of or poor enforcement (Nayak & Chaudhury, 2020) are pointed out as the reasons for the PCA poor implementation. Despite the Hindu cultural tradition of respect for animals there is speciesism discrimination or the sense that animals exist to serve the humans (Nayak & Chaudhury, 2020). It has been argued that children’s education to create awareness, together with correct implementation of the existing laws should suffice to improve FAW in India (Sinclair & Phillips, 2019). However, this is not an easy task in a country still facing problems such as livestock being slaughtered on non-licensed premises (Rahman, 2022), and where a significant part of the population “*goes to bed without a meal*” (Sinclair & Phillips, 2019).

The age effect is specially felt in the Indian population, with younger age less supportive ($\approx 40\%$ in 18 years old for both gender) of changes in legislation, while older ages are between the most supportive groups in this study ($\approx 70\%$ in 65 years old of both gender). An explanation for this difference may be related with older people being more aligned with the Hindu tradition of vegetarianism and respect for living things (Sen, 2019), while younger generations aim to shift to western consuming standards (Sathyamala, 2018). Also, many poor people aim to improve their living standards, starting with access to food, which is especially the case in younger generations (Sathyamala, 2018). This generation gap is also felt in those opposing changes in the law and those showing a neutral position.

Despite all the problems with law implementation and effectiveness, the API rate for India (E) places the country alongside the USA, below Western Europe and Brazil and above China and Russia.

Russia

The political reforms obtained during Perestroika in the 1980s allowed the civil society to gain pace in the advocacy for animal rights and a federal law on animal protection was drafted in 1998 with the support of the prominent biologist and activist Tatiana Pavlova (Fröhlich & Jacobsson, 2017). However, with President Vladimir Putin already in power, the law failed to be ratified in 2000 even after government approval (Novozhilova, 2013).

Nevertheless, the Russian Federation expresses in article 137 of its Civil Code that the cruel treatment of animals is non-human and inadmissible. Russia’s Criminal Code states in article 245 that cruelty to animals is punished up to imprisonment.

Meanwhile, more recently, Russia has finally legislated against cruelty to animals. The 2018 Federal Law on Responsible Treatment of Animals recognizes animal suffering and notes that inaction allowing animal suffering is punishable. Despite the existence of general legislation recognizing animals’ rights, these laws are not always implemented in societal practice, and it is acknowledged that laws should be improved (Kotova, 2021).

The gender effect is particularly felt in Russia. Women ($\approx 65\%$) are much more supportive of changes in legislation than men ($\approx 46\%$), and the opposite is felt in those opposing to changes (women $\approx 10\%$ and men $\approx 40\%$). This effect can be explained by the fact that men in Russia tend to be more involved in farming or hunting, and therefore more interested in maintaining the *status quo* (Klimova & Ross, 2012). The private farm sector in Russia has been growing, and the livestock sector is intensifying aiming to reach self-sufficiency by 2030 (Morozov & Rasskazov, 2019).

The gender effect in support of animal rights is well studied, and it is known that women are more protective of animals than men, regardless of cultural background (Randler et al., 2021). This is an

innate behavior explained by the fact that men and women have evolved with distinct roles in the society. Men evolved as hunters, therefore less emotionally attached to animals and developing utilitarian feelings toward them. On the other hand, women can see animals as food source but evolved within a societal role of care and nurture, therefore developing more protective feelings (Knight, Vrij, Cherryman, & Nunkoosing, 2004). In fact, Brazil is the only country where this effect is not observed.

Russia rates G in the API, alongside China. The worst rates among the countries within the present study.

Harmonization of legislation in the different countries

The differences in legislation and its implementation in the countries studied are evident. However, and despite the existence of socio-demographic differences, the demand for improved legislation in FAW, in general, occurs across countries.

The complete liberalization of international trade of farm animal products cannot be implemented if the production rules are different across countries. International organizations, such as the OIE, are working in the harmonization of rules. The Global Animal Welfare Strategy proposed by OIE is being widely accepted worldwide (180 countries). However, this four-pillar strategy recognizes the need for “1 – capacity building and education,” and “2 – communication with governments, organizations, and the public,” for the “3 – development of animal welfare standards” to allow future “4 – implementation of animal welfare standards and policies.” As a result, the timeline for international harmonization of rules may still be long. Different cultural backgrounds, socio-economic factors, and social, economic, and environmental sustainability are enough reasons to create barriers to policy harmonization. Corporations may be able to self-impose production and trading standards; however, the recognition of private certification may still pose trade barriers. OIE and NGOs are working with some of the developers of standards to achieve comparability with OIE Standards (Dalla Villa, Matthews, Alessandrini, Messori, & Migliorati, 2014).

Western Europe leads the ruling and implementation of sustainable animal production practices, including FAW. In the future convergence between Europe and other countries may be possible, however the rhythm will vary. Countries with more advanced legislation will most likely claim ethical principles to impose trading barriers to imports. These barriers may be perceived as market protectionism creating trading disputes; however, nobody can deny the societal claim for improved animal welfare legislation.

This paper has a quantitative and descriptive nature, facilitating the establishment of relationships between dependent variables (country, gender, and age) and the independent variable (support or opposition to better animal welfare legislation). The results obtained allow a snapshot of the situation but do not necessarily fully explain the reality with accuracy. There are limitations in the sampling effort of the countries in the study. These countries are very large and have a diversity of cultures difficult to cover entirely with a survey.

Conclusion

The laws and their application vary a lot between the BRIC countries, the USA and Europe. The societal willingness to improve farm animal welfare legislation is higher than the opposition and neutrality together, in all countries. The willingness to improve animal welfare legislation is higher in Europe and it is also high in American and Russian women, and in older Indians and Brazilians (especially men). The demand for improved farm animal welfare legislation may impact the international trade of farm animal products if the exporting countries do not meet the standards of the importers.

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No potential conflict of interest was reported by the author(s).

Data availability statement

The data that support the findings of this study are openly available in the repository Open Science Framework at <https://osf.io/exwgq>.

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