

**SZENT ISTVÁN  
EGYETEM**

**THE REGULATION OF ANIMAL CRUELTY IN  
RELATION TO ECONOMIC AND SOCIAL  
INDICATORS**

**THESIS OF DOCTORAL DISSERTATION**

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## **1. Background and Objectives**

Ancient peoples revered nature and animals, lived in harmony with nature, and acknowledged its superiority. Over the past millennia, and especially the past few centuries the relation between man and animal has deteriorated greatly; man often regarded animals (and still does sometimes) as resources that can be exploited to the extreme. Global meat-, milk- and egg consumption have grown significantly since the Second World War and new, intensive animal husbandry methods govern the life and death of millions of animals. The moral dilemmas stemming from them have given unprecedented impetus to animal welfare movements in Europe and America. The past few decades have brought a partial shift in the right direction from the aspect of animals. People are increasingly recognising the interests of letting creatures live free from suffering and preserving natural assets. The slow, but clearly observable spread of ethical consumption reflects the intent of society to be surrounded by less cruelty. However, society only raises its voice selectively, in connection with certain forms of animal suffering: it condemns all forms of cruelty to animals; however, it is reluctant to renounce the benefits and goods obtained through the use of animals.

The motives behind the response to animal cruelty are the same as those for improving animal protection in its narrow sense – primarily ethical and moral considerations have led to the first regulations being drafted. By protecting animals from cruelty, the main objective was not to protect the suffering animal, but to uphold the morality of society and public security – traces of this view can be found to this day. It is thanks to the scientific development of recent decades that the criminological significance of animal cruelty and its connections with violence against people have been recognised. The recent improvement and qualitative change in the legal status of animals is not an isolated phenomenon; it relates to the “animal revolution” which can be observed in the philological and social sciences and in popular culture and thought.

The criminal law provisions of various countries sanctioning animal cruelty differ significantly in their scope, form, and efficiency of enforcement. The aim of this work is to give a comprehensive and at the same time comparative picture of the rules sanctioning animal cruelty in the criminal law of 15 European countries, then determine their ranking according to certain indicators, both traditional and novel, which reflect environmental factors, economic prosperity and physical/mental wellbeing.

## **2. Material and Method**

### **2.1 Material**

The fifteen countries examined were selected based on theoretical and practical considerations. The initial set consisted of European countries not governed by case law. It was important to include Hungary in the analysis, the other V4 countries (Czech Republic, Slovakia, Poland) and German-speaking areas (Austria, Germany, Switzerland) in a way that allows their comparison with each other. As for the other countries, those with a larger population or greater economic power, as well as – for practical reasons – countries whose authentic law sources are available in a language known to the author (English, German, French) were given preference. As a result, France, Spain, Italy, Norway, Sweden, Denmark, the Netherlands, and Slovenia were also included in the analysis.

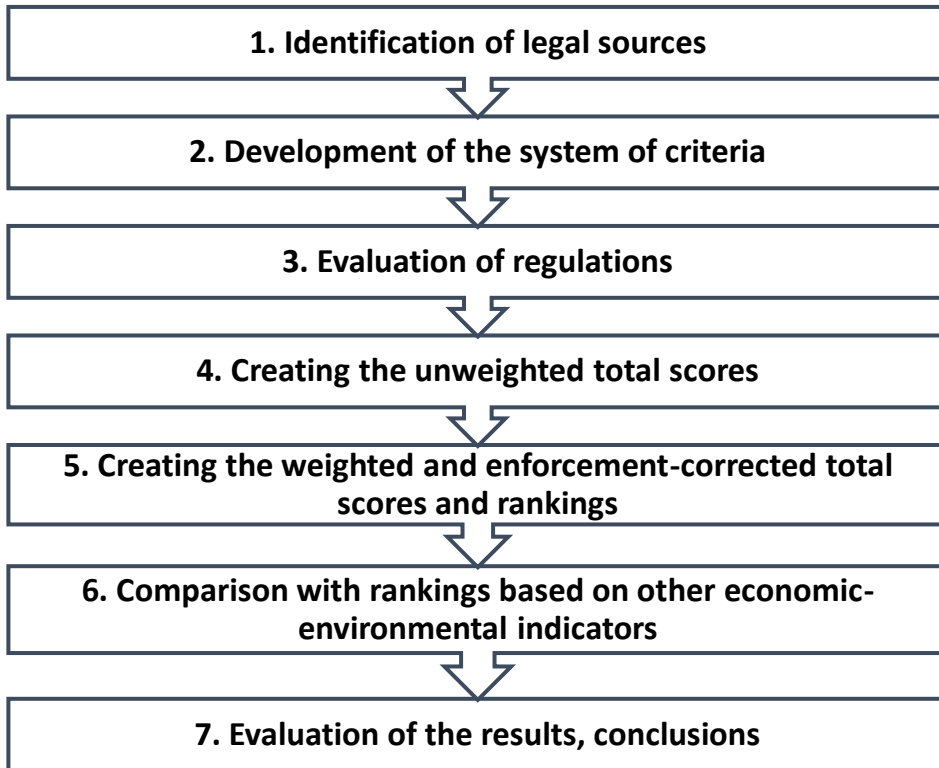
We examined the law sources of the countries selected (mostly their constitution, civil code, criminal code, and – if it contained criminal provisions – animal welfare act) for the 2016-2019 period, re-checking the validity of the examined provisions and results when the writing of the manuscript was finished (30 August 2019). In connection with the dissertation this meant a total of 85 legal sources in different languages.

### **2.2 Method**

The analysis is based on a method of law comparison and helps presenting geographical differences in the judgment of animal cruelty under criminal law. When comparing legal instruments, we focused primarily on differences, as they can serve as basis for differentiation. The view of animal cruelty in criminal law is a narrow area, which was examined in isolation from its legal context, on the basis of *tertium comparationis*, that is, functionality, focusing on the purpose of the legal instrument and its elements. In the analysis the criminal law aspect is complemented by the constitutional status of animal welfare and the legal status of animals, as these two basic principles affect not only constitutional and civil law, but the entire legal system, including criminal law provisions. The analysed factors (legal instruments, elements, etc.) cannot be measured objectively, using absolute metrics. The quality of a legal system cannot be quantified directly; therefore, the study contains *proxies* (approximate data).

The research process is summarised in **Figure 1**.

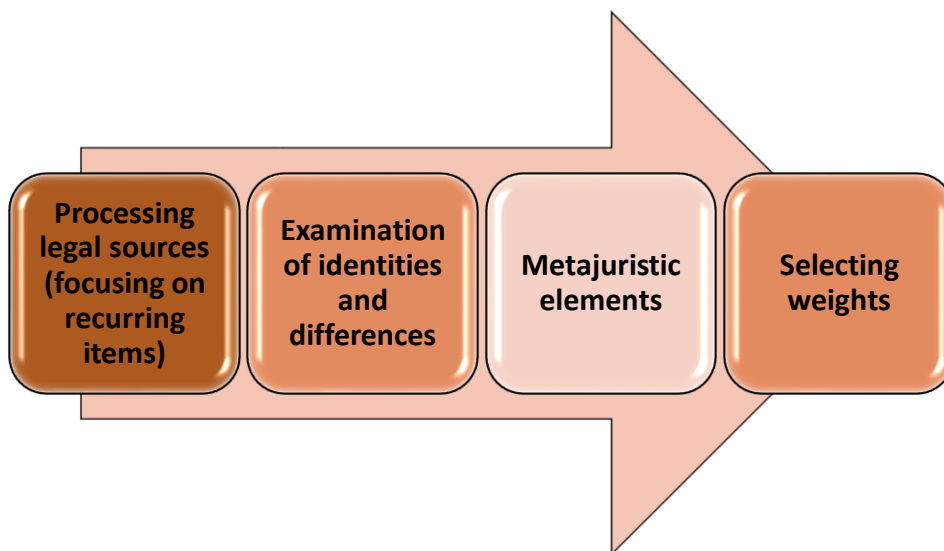
**Figure 1: The steps of the research process**



The countries can be categorised according to the selected system of criteria, with yes/no binary code (0=no, 1=yes). While the selection of criteria unavoidably reflects the individual value system of the author (so-called *soft data*), the binary answers to criteria are objective and retraceable (so-called *hard data*). Criteria were defined in a way that a “yes” answer to them presumes a more differentiated regulation, that is better for animal welfare, than a negative answer. Data aggregation does not present any difficulty, as the study deals with heterogeneous data.

The four steps of developing the system of criteria are summarised in **Figure 2**.

**Figure 2: Development process of the system of legal and metajuristic criteria**



We grouped the criteria remaining at the end of the process according to the following division under legal theory: the material side of the statutory definition (objective elements): conduct, result, causal link, method, means, location and time of the act, object of the act (passive subject); and the subjective side of the statutory definition (subjective elements): intentionality, negligence.

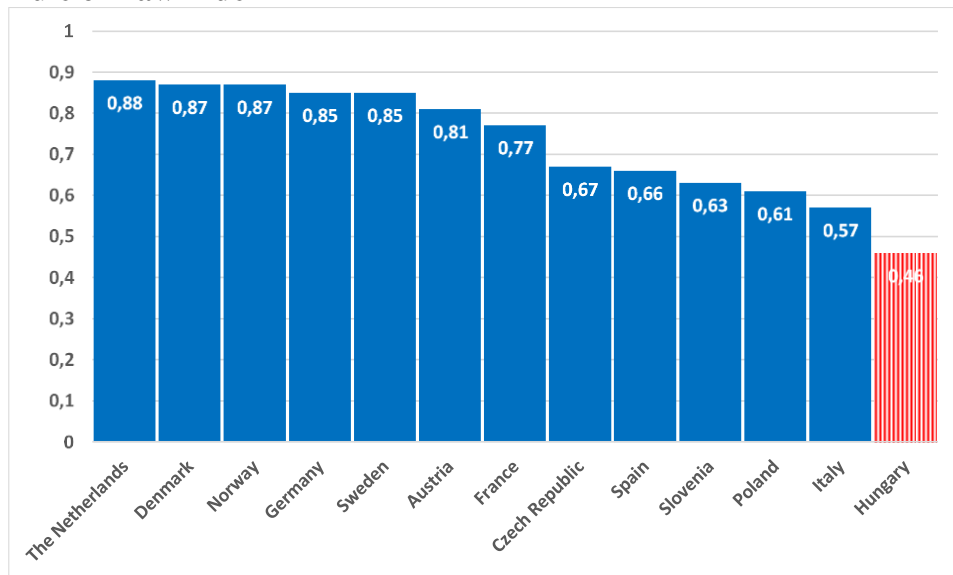
Some important statements can be made in connection with the assessment, which can serve as a starting point. *First*, more differentiated and detailed legislation was given a higher score. *Second*, a higher score reflects a better standard. *Third*, in some places explicitly worded provisions clearer than a reference were rewarded with extra points. *Fourth*, if more time was available to law enforcers in the given country, that is, if animal cruelty appeared in legislation earlier, we presumed that adaptation to this and legal practice are also of a higher standard; therefore the dimension of time was also included in the study.

When examining the system of criteria, each criterion was checked in the relevant legal source of the given country. This meant that we sought a yes/no answer to a total of 405 questions (15 countries x 27 criteria) in legal sources. We totalled the scores obtained by each country and named the resulting index the “**Unweighted Anti-Cruelty Criminal Index**” (“**Unweighted ACCI**”).

Due to professional arguments certain criteria are more significant than others, which justifies weighting them. The argument against weighting was that due to the lack of objective measurement and consensus between experts it is impossible to determine weights absolutely objectively; however, “certain

particularities being obviously more important” (Jakab, 2015) constitutes an argument for weighting. It would be impossible to argue, for example, that a constitutional criterion which defines the entire legal system should not be given more emphasis than specific details. The definition of all criteria and weights is substantiated by thorough professional justification. In addition – inasmuch as possible – we also took the requirement of reproducibility into account. In the dissertation the aggregate weighted scores were named **“Theoretical (Weighted) Anti–Cruelty Criminal Index”, that is, “Theoretical (Weighted) ACCI”**. We next supplemented the analysis of only legislation/law sources with data relating to the efficiency of enforcement. We based this on data relating to enforcement of an existing index, the Rule of Law Index established by the World Justice Project, which we used to correct the scores of countries. The name of the resulting modified index is **“Corrected (Practical) Anti–Cruelty Criminal Index”, or, more briefly, “Corrected (Practical) ACCI”**. **Figure 3** shows the countries examined in this work, according to the subindex of the Rule of Law Index focusing on enforcement. The World Justice Project did not assess the Rule of Law Index of Slovakia and Switzerland.

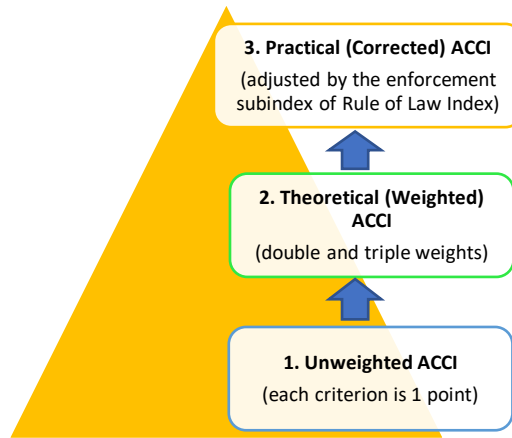
**Figure 3: Country ranking according to the enforcement sub-index of the Rule of Law Index**



The evaluation produced two country rankings. one according to the Theoretical ACCI total score and one according to the Practical one. The establishment of the ACCIs creates a logical chain, which we summarised in **Figure 4**.



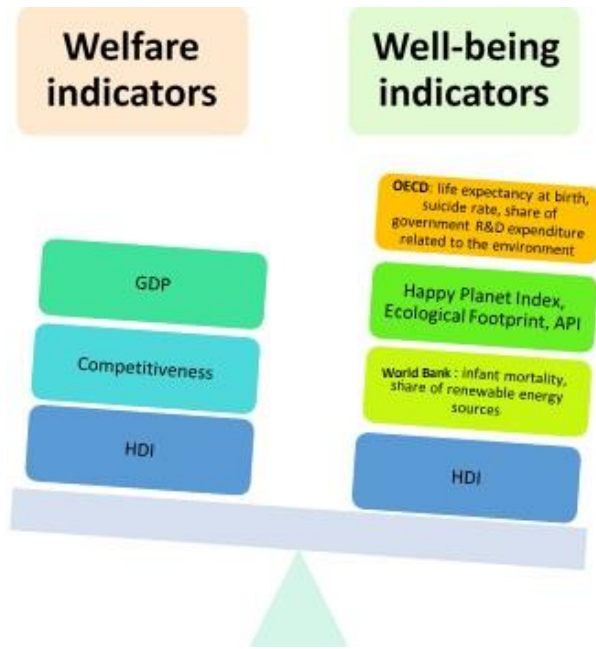
**Figure 4: Process chart of the establishment of the Unweighted, Weighted and Corrected ACCIs**



Certain aspects of the ACCI form a close thematic unit and should be included in **sub-indices**. These indicators are less abstract than the final one, but more so than individual criteria. We classified countries into groups according to the sub-indices, which enables further comparisons.

We compared the country rankings according to the Theoretical and Practical ACCIs with eleven country rankings established according to existing indicators. The indicators and statistics used were the following: Gross Domestic Product (GDP) per capita, calculated at purchasing power parity; from OECD data, life expectancy at birth, suicide rate, and share of government R&D expenditure on the **environment**; from the data of the World Bank, infant mortality and the share of renewable energy sources; competitiveness as measured by the World Economic Forum; the Human Development Index (HDI) of the United Nations; the Happy Planet Index; the ecological footprint, and the Animal Protection Index (API) of World Animal Protection. We classified the traditional and novel indicators used into two categories: economic prosperity (“welfare”) indices and environmental/health/mental (“well-being”) indices (**Figure 5**). The HDI contains elements from both categories.

**Figure 5: Grouping of traditional and novel economic, social and environmental statistics and indicators used in the study**



We measured the strength of correlation between country rankings with Spearman’s rank correlation coefficient.

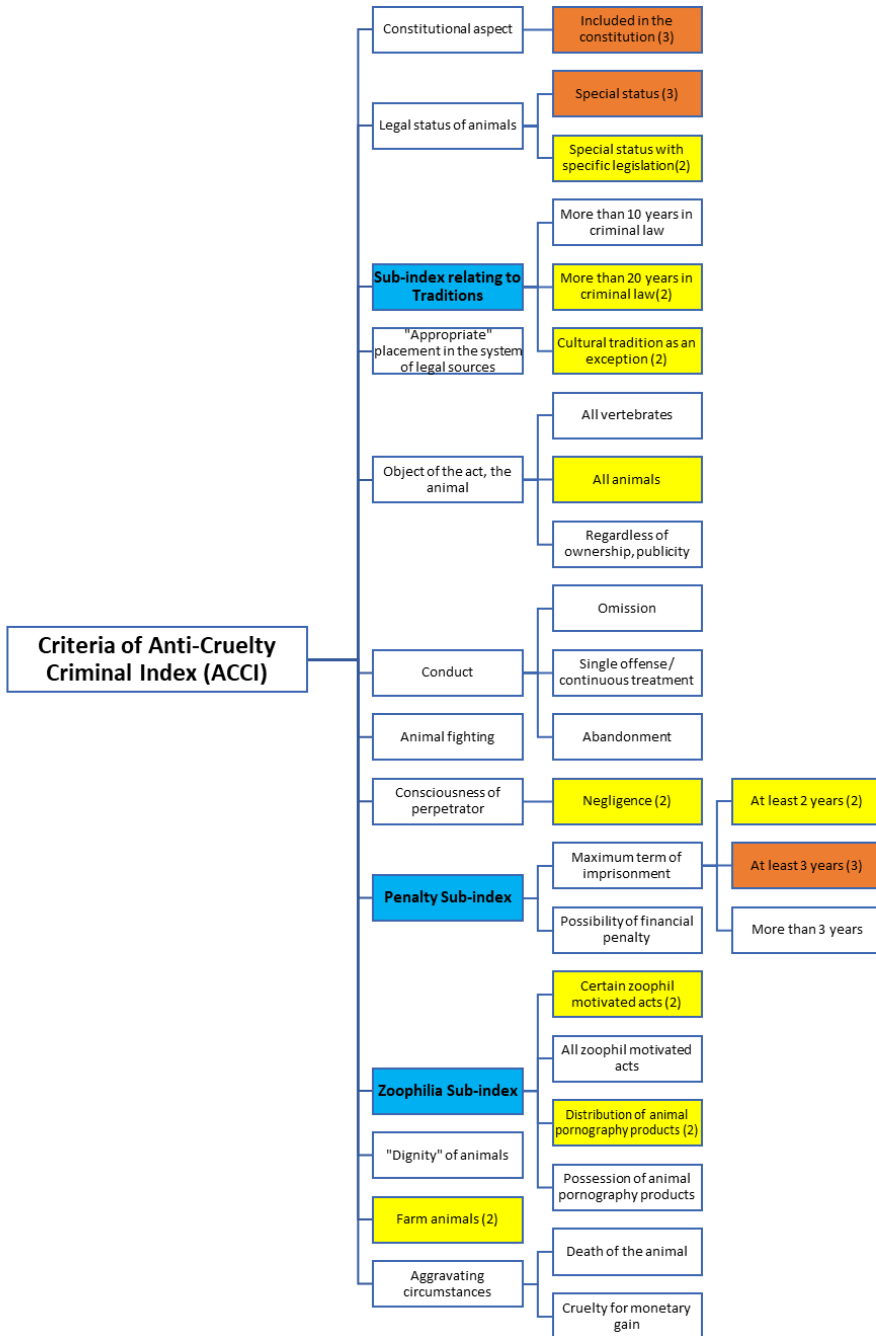
### 3. Results and Discussion

From the literature review and the criminal provisions of the fifteen countries relating to animal cruelty we created 27 criteria were created and examined in total. We classified criteria into three categories according to professional considerations. Criteria considered decisive were given **triple** weight in the study; criteria which facilitate the differentiation of countries but are not in themselves decisive were given **double** weight. Other criteria were included in the study with **single** weight.

The three sub-indexes established according to thematic similarity are the following: **Penalty sub-index** (four criteria relating to the existence of fines and the maximum term of imprisonment); **Zoophilia sub-index** (four criteria relating to the zoophilic acts and animal pornography) and the **sub-index relating to Traditions** (three criteria relating to the history of criminal law on animal cruelty and cultural traditions).

The criteria examined are summarised in **Figure 6**, which also shows the weights and sub-indexes.

**Figure 6: Summary figure of the ACCI system of criteria, with weights**



*Explanation: **Bold** – sub-indexes; (3) – included with triple weight; (2) – included with double weight*

*Note: if a negative answer was given to the question connected with the given criterion, the score was zero.*

The assessment, which forms the basis of comparison between the countries examined is presented in **Table 1**.

**Table 1: Summary table of the ACCI system of criteria, with weights**

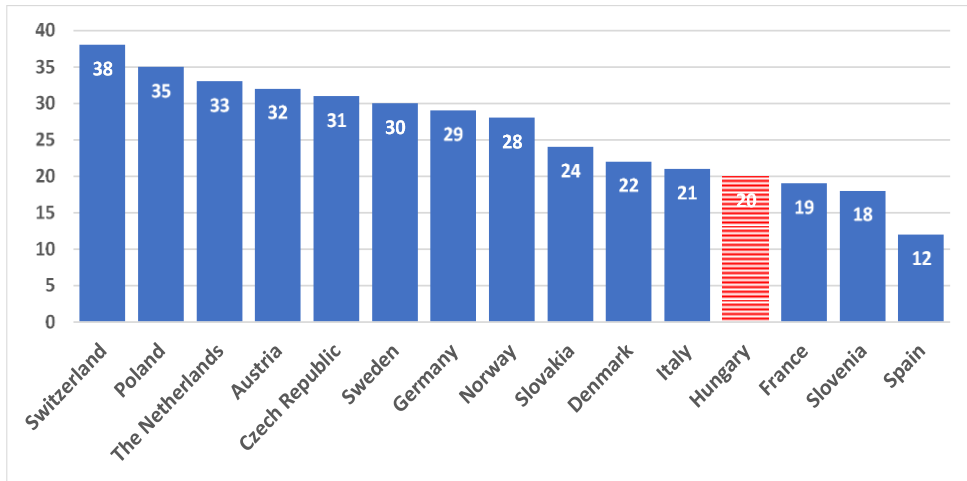
	HU	A	CZ	DK	F	NL	PL	D	N	I	E	CH	S	SK	SLO
Is animal protection included in the constitution? (3)	0	1	0	0	0	0	0	1	0	0	0	1	1	0	1
Special status beyond mere material status (3)	1	1	1	0	1	1	1	1	0	0	0	1	1	1	0
Special status beyond mere material status – specific legislative provision (2)	0	1	1	0	1	1	1	1	0	0	0	1	0	1	0
Animal cruelty has been part of criminal law for over ten years (E)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Animal cruelty has been part of criminal law for over twenty years (2)	0	1	1	1	1	1	1	1	1	0	0	1	1	0	0
"Worthy" position in the system of law sources	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1
Animals covered: all vertebrates	1	1	1	1	0	1	1	1	1	1	0	1	1	1	1
Animals covered: all animals (2)	0	1	1	1	0	1	1	0	1	1	0	0	1	1	1
Regardless of ownership of the animal and/or if there is a witness	1	1	0	1	0	1	1	1	1	1	0	1	1	1	1
Can be committed by negligence (E)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
The crime can also be committed in a single act or by treatment (E)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Driving the animal away or abandoning it are also considered criminal conduct	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0
Animal fighting is named and punished separately	1	1	0	0	0	1	1	0	1	1	1	1	1	0	1
Commission by negligence is also punished (2)	0	1	1	1	1	1	1	1	1	1	0	1	1	0	0

	HU	A	CZ	DK	F	NL	PL	D	N	I	E	CH	S	SK	SLO
The maximum term of imprisonment is 2 years (2)	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1
The maximum term of imprisonment is 3 years (3)	1	0	1	0	0	1	1	1	1	1	0	1	0	1	0
The maximum term of imprisonment is more than 3 years	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
Existence of financial penalty (E)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Certain forms of sexual acts with animals are punished	0	1	1	1	1	1	1	0	1	0	1	1	1	0	0
All forms of sexual acts with animals are punished	0	0	1	1	0	1	0	0	1	0	0	1	1	0	0
The distribution of animal pornography is punished	0	1	1	0	0	1	1	1	1	0	0	1	0	1	0
The possession of animal pornography is punished	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0
The “dignity” of animals is mentioned explicitly	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Explicit reference to livestock (2)	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0
No “cultural tradition” that is explicitly excluded from the statutory definition (2)	1	1	1	1	0	1	1	1	1	1	0	1	1	1	1
The death of the animal is an aggravating circumstance or incurs a more severe penalty	1	1	1	0	0	0	1	0	0	1	1	1	0	1	1
Aggravating circumstance: animal cruelty for monetary gain	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0

Note: (2) double weight, (3) triple weight, (E) same for all countries examined

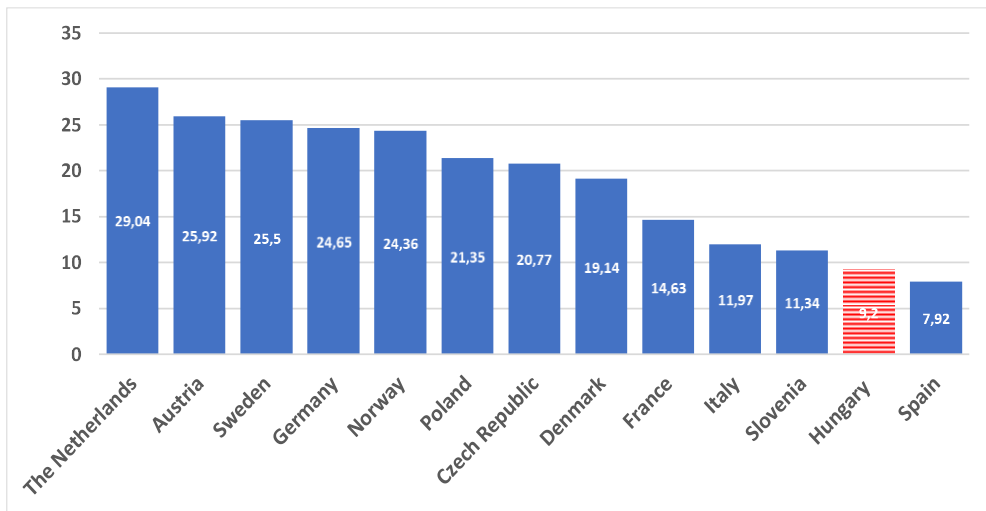
**Figure 7** presents the total scores which form the basis of the Theoretical (Weighted) ACCI ranking and the resulting country ranking. The three countries leading the ranking are Switzerland, Poland, and the Netherlands, with France, Slovenia, and Spain at the bottom.

**Figure 7: Theoretical (Weighted) ACCI total score and ranking**



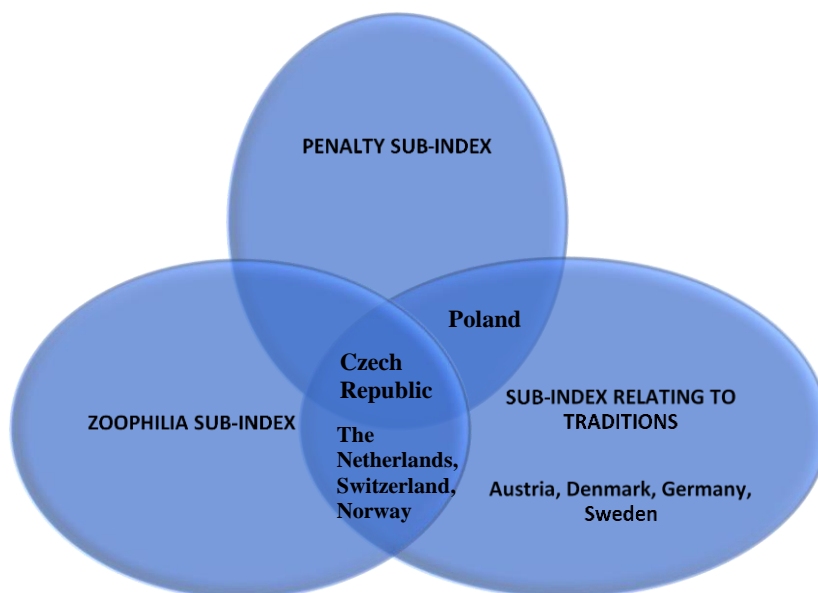
The Practical ACCI ranking (corrected with enforcement) is led by the Netherlands, Austria, and Sweden, with Slovenia, Hungary and Spain the last three. The rule of law index of Switzerland and Slovakia is not measured; as a result, these two countries are not included in the corrected ranking (Figure 8).

**Figure 8: Practical (Corrected) ACCI total score and ranking**



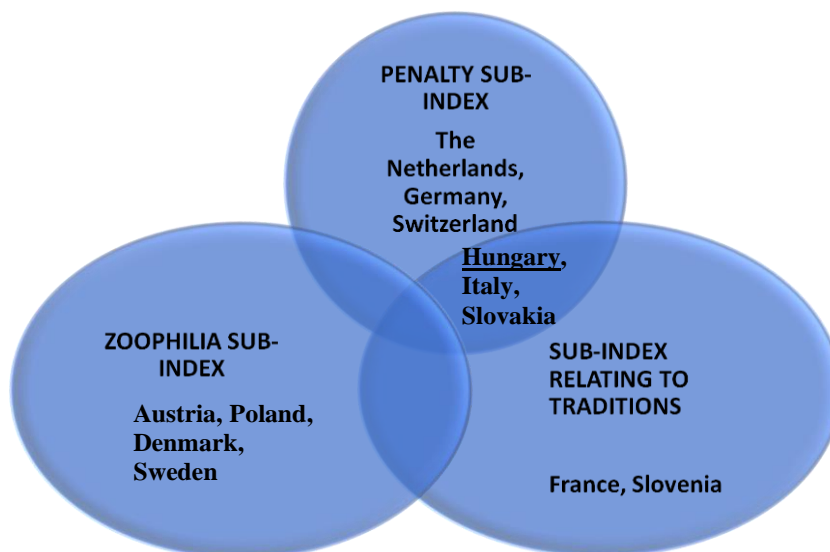
We created three country groups from the country rankings established according to the sub-indexes relating to Penalty, Zoophilia, and Traditions. We present countries with “good”, “average” and “weak” legislation in Figures 9, 10 and 11.

**Figure 9: Countries with “good” legislation in terms of the sub-indexes**



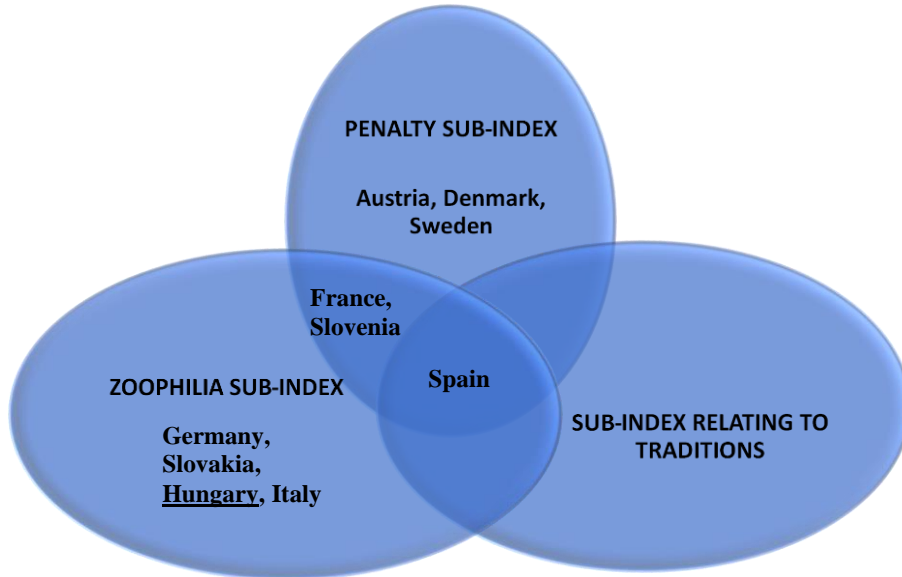
We classified into the country group with “good” legislation countries in the 1st place according to the Penalty, 1st and 2nd according to the Zoophilia and 1st according to the Traditions sub-indexes. Only the Czech Republic earned a place in the “good” country group in all three categories.

**Figure 10: Countries with “average” legislation in terms of the sub-indexes**



We classified into the country group with “average” legislation countries in the 2nd place according to the Penalty, 3rd and 4th according to the Zoophilia and 2nd according to the Traditions sub-indexes.

**Figure 11: Countries with “weak” legislation in terms of the sub-indexes**



We classified into the country group with “weak” legislation countries in the 3rd and 4th place according to the Penalty, 5th and 6th according to the Zoophilia and 3rd according to the Traditions sub-indexes.

A highlight in the negative sense is Spain, with three last places. Hungary belongs to the middle country group according to two sub-indexes (Penalty and Traditions) and to the last, “weak” group according to the Zoophilia sub-index, that is, it holds two second places and a third, just like Slovakia.

We compared the country ranking established according to the Theoretical and Practical ACCIs with the country rankings according to eleven statistics and indicators examined. (With regard to the API only ten countries could be compared, as the authors of the Animal Protection Index do not assess five of the countries: Hungary, Czech Republic, Norway, Slovakia and Slovenia).

The results are presented in **Table 2**.



**Table 2: Correlation between country rankings established according to the Theoretical and Practical ACCIs and according to other indicators examined**

INDICATOR	THEORETICAL (WEIGHTED) ACCI RANKING	PRACTICAL (CORRECTED) ACCI RANKING
ANIMAL PROTECTION INDEX	<i>0,62424</i> ( <i>p = 0,0602</i> )	<i>0,8667</i> ( <i>p = 0,0045</i> )
GDP	<b>0,3821</b> ( <b>p = 0,1607</b> )	<i>0,6923</i> ( <i>p = 0,0111</i> )
LIFE EXPECTANCY AT BIRTH	<b>0,5934</b> ( <b>p = 0,15</b> )	<b>0,2143</b> ( <b>p = 0,4819</b> )
SUICIDE RATE	<b>-0,1286</b> ( <b>p = 0,6482</b> )	<b>0,0824</b> ( <b>p = 0,7925</b> )
GOVERNMENT R&D EXPENDITURE	<b>-0,2714</b> ( <b>p = 0,3268</b> )	<b>-0,4396</b> ( <b>p = 0,135</b> )
COMPETITIVENESS	<b>0,3893</b> ( <b>p = 0,1525</b> )	<i>0,6538</i> ( <i>p = 0,0183</i> )
SHARE OF RENEWABLE ENERGY SOURCES	<b>-0,075</b> ( <b>p = 0,7926</b> )	<b>0,0055</b> ( <b>p = 0,9928</b> )
INFANT MORTALITY	<b>-0,2571</b> ( <b>p = 0,3538</b> )	<b>0,0165</b> ( <b>p = 0,9639</b> )
HUMAN DEVELOPMENT INDEX	<b>0,3464</b> ( <b>p = 0,206</b> )	<i>0,6428</i> ( <i>p = 0,0209</i> )
HAPPY PLANET INDEX	<b>0,1286</b> ( <b>p = 0,6482</b> )	<b>0,2857</b> ( <b>p = 0,3436</b> )
ECOLOGICAL FOOTPRINT	<b>-0,3643</b> ( <b>p = 0,1824</b> )	<i>-0,5769</i> ( <i>p = 0,0425</i> )

Among the indicators examined a statistically detectable strong positive linear correlation can only be observed in connection with welfare indicators (GDP, competitiveness), and the “hybrid” indicator (HDI). From the indicators belonging to the environmental/health/mental well-being category a correlation of this direction and strength can only be detected with the Animal Protection Index, which could be due to the similar topics covered by the two indexes (ACCI and API).

The study reached the conclusion that the more prosperous and competitive a given country, the “better”, more detailed, and more favourable for animal welfare are the standard of its criminal law on animal cruelty and its enforcement. Since the ACCI shows a positive correlation with welfare indexes, it can also be understood why such a strong negative correlation can be observed with the “inverse” of the GDP, the ecological footprint.

There are only a few international studies and research projects whose results have parallels with those of the present study. FRANK (2008) and LOMBARDINI et al. (2011) studied the standard of animal welfare in relation to the economic situation of countries; instead of analysing the regulations, however, they examined the extent of the “harm” suffered by animals (including animal rearing for food and use, as well) and whether it could be correlated with economic development. We must highlight the work of MORRIS (2013), who showed a positive correlation between animal welfare and income equality. He found that the discovered correlation is not a causal relation; it depends on a third variable, since societies that consider the “fair” distribution of income important also show more sensitivity regarding animal welfare. Particularly notable is the study of HOLST and MARTENS (2016), who – although they did not create their own indicator – examined the relation between GDP per capita calculated at purchasing power parity and the API, among others. In their hypothesis they surmised the existence of a positive correlation but were unable to demonstrate it with statistical methods. They argued that the reason for the lack of a statistically demonstrated correlation is not that there is no link between animal welfare and the level of economic development, but that the GDP alone is insufficient for measuring economic development. BAKACSI (2006) sought to discover whether there is a correlation between culture or its patterns and economic development. According to research results the most reliable indicators of economic development (GDP) and competitiveness are performance orientation, future orientation and the avoidance of insecurity. All this is logically connected to the results of this work, as well: if an economy is more developed and in parallel society strives harder for good performance and far-sightedness, preserving its assets and resources, while trying to avoid deficiencies in regulation, then it should not come as a great surprise that it also tries to keep the standard and quality of its animal welfare regulation high.

#### 4. New and Novel Scientific Results

1. The new scientific result of the doctoral dissertation is the elaboration of an indicator which did not previously exist, the Anti-Cruelty Criminal Index, ACCI, which can measure the standard of the criminal regulation of animal cruelty in different countries, enabling comparisons between them. The indicator was developed according to an individually established system of criteria, which is also substantiated by literature and logical arguments. The indicator is primarily based on material legal aspects, but also contains criteria concerning constitutional law, the legal status of animals and metajuristic aspects. The indicator can measure the criminal law on animal cruelty of any country whose legal system is similar to the continental one.

2. In the present study we examined the criminal law sanctioning animal cruelty in fifteen countries (Hungary, Austria, Czech Republic, Denmark, France, Germany, Italy, The Netherlands, Norway, Poland, Slovakia, Slovenia, Spain, Sweden, and Switzerland). We established a country ranking based on theory alone, mainly written law (*Theoretical ACCI*), and for thirteen countries (not including Switzerland and Slovakia) another one, which in addition to theory also takes enforcement into account (*Practical ACCI*). The ranking established according to the Theoretical ACCI is led by Switzerland, Poland, and the Netherlands, the one according to the Practical ACCI by The Netherlands, Austria, and Sweden. The last three, according to the theory, are France, Slovenia and Spain, while taking practice into account, as well, they are Slovenia, Hungary, and Spain.

3. According to the indicators examined, the standard of criminal law on animal cruelty in the 15 European countries included in the study is related to *economic prosperity*: if welfare indicators show a higher standard, criminal law on animal cruelty is also more differentiated and better for animal protection. The Practical ACCI showed a strong and significant positive correlation with the GDP, Competitiveness, and the hybrid index, the HDI; moreover, we found a strong and significant negative correlation with the ecological footprint. The Animal Protection Index (API), which covers similar topics as the ACCI showed strong and significant positive correlation with both the Theoretical and the Practical ACCI. A correlation cannot be detected between the ACCI and the other examined *well-being* indicators (life expectancy at birth, suicide rate, infant mortality, environmental R&D, share of renewable energy sources, Happy Planet Index).

## 5. Conclusions and Suggestions

Countless arguments exist or could be made that the level of detail and quality of the regulation of animal cruelty and animal protection is linked to indicators which reflect the well-being, psychic satisfaction, and health of people. Although this assumption was not proven here, the inclusion of well-being indicators in the study was justified by several arguments. GDP growth alone does not mean a better life for everyone – it does not reflect inequalities between individuals and fails to assess correctly factors truly important to people (social relations, leisure, etc.). It is also extremely important to emphasize that continuous economic development is incompatible with the fact that the resources of our planet are finite. Despite this, the study of animal cruelty did not find a correlation with well-being indicators, but it did with the GDP. This result is perhaps not so surprising if we consider that during history civilisations fought their battles primarily using economic means, from which it follows directly that a strong organisation in the economic area is also likely to possess striving and performance-oriented attitudes in other areas. The result of the study cannot be interpreted to mean that if the GDP per capita increases in a country by a few percent, then the regulation of animal cruelty will also “suddenly” improve in its quality. Nonetheless, the emerging picture is that the material prosperity of a country is accompanied by a better regulatory standard.

The strong and significant positive correlation between the API (Animal Protection Index) and the ACCI substantiates that criminal law on animal cruelty can indeed be regarded as the peak of the iceberg, from whose quality conclusions can be drawn as to the modernity of the entire legislation on animal welfare. The country ranking established through the analysis of criminal law alone, that is, according to the ACCI shows a similar picture to the API, which assesses animal welfare through a wider, albeit less detailed system of criteria, and takes factors such as governmental involvement, communication on animal welfare, and education into account, as well.

In the case of Hungary this also means that although the regulation of animal cruelty could be improved in our country, too, based on theory alone we overtook larger and economically more developed countries such as France or Spain. However, it is also important to note that among V4 countries we clearly lag behind Poland and the Czech Republic, and – having implemented legislative changes in the past year or two which represent major progress – Slovakia is also ahead of us in some respects. If we were able to enforce our existing legislation on animal cruelty more efficiently, we could achieve more significant change than by simply tightening the regulation further. It is important to recognise that animal welfare is inseparably and symbiotically connected with the physical and mental health of humans.

Considering the results of the study further research should be undertaken into criminal law on animal cruelty, along the following considerations:

- *“Best practice” study*: apart from certain matches and identical/similar legal instruments the fifteen European countries examined apply different regulatory solutions, elements and aggravating circumstances in connection with animal cruelty. It would be worth examining these individually, assess case law, and create a knowledge base of practices deemed best. This could be beneficial for the development and legislation of all countries.

- *Further examination of the system of sanctions for animal cruelty*: all principal and additional penalties and measures that can be imposed for animal cruelty should be studied in detail. This work focuses on imprisonment and fines, but the amount of the fine, the possibility of public service, prohibition to practice professional activities/keep animals, and mandatory training on animal welfare are also worth examining. Study of the amount of the fine should take into account the material wealth of residents of the given country, as the deterrent force of the fine can only be understood in its context.

- *Extending the study to further countries and indicators*: it is recommended to extend the comparison to further countries, even outside Europe. A condition for this is that the given country should not apply case law. In addition, country rankings established according to further welfare and well-being indicators could be included in the study. It would be worth expanding the study to other indicators of democracy, as well, with further investigation of the link between income inequality and animal welfare. A comparison with rankings according to well-being indicators based on subjective measurement should also be undertaken.

- *Creating further indicators*: the dissertation demonstrated that among the countries and indicators examined a strong positive correlation exists between economic welfare indicators and criminal law on animal cruelty. This raises the question whether the situation would be the same when we establish country rankings according to other animal welfare legislation (for example, acts constituting an infringement), or environmental protection/nature conservation provisions, then compare it with country rankings according to the traditional and novel indicators.

- *Examining the impact of the civil sphere and the media on legislation*: civil movements play a key role in the development of animal welfare regulations everywhere, and the role of the public and the media is closely linked to them. One possible direction for further research into the regulation of animal cruelty would be to examine whether major social animal welfare initiatives were followed by legislation in individual countries.

- *Using the results of the study in country branding*: countries that scored high on the ACCI (Switzerland, the Netherlands) could use the results of the study in country branding. This requires further research, for example, determining the animal keeping habits and general attitude towards animals of the target tourist group of the given country.

- *Further examination of the legal status of animals*: even though apart from very few exceptions animals do not enjoy entity status, it is evident that recent decades have brought steps that strengthened their legal status in Europe and America. The realistic path of progress is not necessarily granting entity status to animals, but rather self-regulation by the State, that is, by people. To substantiate this, however, further research is needed.

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## 7. The Author's Publication List

### I. Hungarian language journals

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### II. Foreign language journals

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### III. Monograph

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### IV. Conference publications

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## **VI. Other publications, media appearances**

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