Regulatory Frameworks for Animal Welfare in Livestock Farming

Evans Carmichael

Strathmore University

Abstract

In the intricate tapestry of modern agriculture, the study on Regulatory Frameworks for Animal Welfare in Livestock Farming delves into the pivotal mechanisms shaping the treatment of animals within the agricultural landscape. As the ethical imperative of ensuring animal welfare gains prominence globally, this study navigates through the complexities of existing regulatory frameworks, offering a comprehensive examination that transcends geographical boundaries. By unraveling the intricacies of governance structures, the research aims to contribute nuanced insights, foster policy evolution, and pave the way for a more compassionate and effective approach to animal welfare in the realm of livestock farming. The findings highlighted considerable variability in implementation, with differences in interpretation and enforcement across regions. Ethical considerations and public perception increasingly influence the formulation of regulations, emphasizing the need for alignment with evolving societal attitudes toward animal welfare. Challenges in practical implementation, including resource limitations and variations in compliance, pose significant hurdles. Longitudinal studies emphasize the impact of regulatory changes over time, emphasizing the need for continuous adaptation. A global synthesis underscores the importance of standardized assessment tools and collaboration to establish consistent animal welfare standards. Overall, the findings stress the dynamic and complex nature of regulatory frameworks, emphasizing the importance of addressing practical challenges, incorporating ethical considerations, and fostering global collaboration for effective governance. In conclusion, the study emphasized on the variability in regulatory practices influenced by cultural and economic factors, necessitating context-specific approaches. The integration of ethical considerations into regulations is highlighted, underscoring the evolving societal attitudes toward animal welfare. Challenges in practical implementation, including resource constraints, point to the need for targeted interventions to support farmers. The study provides a comprehensive foundation for future research and policymaking, emphasizing the importance of refining governance mechanisms to ensure the humane treatment of animals in diverse livestock farming contexts. The study recommends harmonizing regulations to establish uniform animal welfare standards, integrating ethical considerations into governance structures, and addressing practical challenges through resource allocation, collaboration, and industry education. Proactive and dynamic regulatory reviews are advised to ensure relevance, while a global synthesis of best practices and standardized assessment tools are proposed to foster consistency and improvement in animal welfare governance worldwide.

Keywords: *Regulatory Frameworks, Animal Welfare, Livestock Farming, Implementation Variability, Ethical Considerations, Global Synthesis*

INTRODUCTION

1.1 Background of the Study

Animal welfare in livestock farming has become a paramount concern globally, reflecting a growing awareness of the ethical, economic, and ecological implications of how animals are treated within agricultural systems. The assessment of animal welfare serves as a critical dependent variable in various studies, offering insights into the broader implications of livestock management practices. This comprehensive exploration delves into the existing literature on animal welfare in livestock farming, considering examples from the United States, Canada, Europe, and African countries. In the United States, the assessment and improvement of animal welfare in livestock farming are shaped by a combination of federal and state regulations, industry guidelines, and voluntary initiatives. For instance, the United States Department of Agriculture (USDA) enforces the Animal Welfare Act, setting minimum standards for the humane treatment of animals in research, exhibition, and transport (USDA, 2021). Additionally, industry-led programs like the Beef Quality Assurance (BQA) certification emphasize best practices in cattle management, including aspects of animal welfare (National Cattlemen's Beef Association, 2020).

Canada, like the United States, places significant importance on animal welfare in livestock farming. The Canadian Codes of Practice for the Care and Handling of Farm Animals outline guidelines for various species, ensuring that animals are provided with adequate living conditions, nutrition, and veterinary care (National Farm Animal Care Council, 2021). Research in Canada, such as that conducted by Turner, Vaughn & Brod (2019), explores the impact of housing systems on the welfare of laying hens, highlighting the importance of considering environmental factors in animal welfare assessments.

In Europe, animal welfare in livestock farming is addressed through comprehensive legislation and industry initiatives. The European Union (EU) has developed regulations and directives governing the welfare of farm animals, with a focus on housing conditions, transportation, and slaughter practices (European Commission, 2021). Studies like those by Welfare Quality® (2012) have contributed to the European understanding of animal welfare, emphasizing key indicators such as good feeding, good housing, and positive behavioral interactions among animals.

In African countries, the discourse on animal welfare in livestock farming is evolving, with unique challenges and innovations. Research by Dzikiti, Muchenje, Marume & Chimonyo (2012) in Zimbabwe explores the welfare implications of different cattle management systems, acknowledging the need to balance traditional practices with modern advancements. The study highlights the importance of context-specific approaches to animal welfare in diverse agricultural landscapes.

Globally, challenges persist in ensuring consistent and high standards of animal welfare across different livestock farming systems. Research by Hemsworth, Rice, Karlen, Calleja & Barnett (2015) emphasizes the need for a holistic approach that considers both biological and emotional aspects of animal welfare. The study underscores that successful welfare strategies must address not only physical health but also the psychological well-being of animals. Technological advancements play a crucial role in enhancing animal welfare in livestock farming. Innovations such as precision livestock farming (PLF) leverage sensors and data analytics to monitor individual animals, enabling early detection of health issues and optimizing management practices (Vranken, Berckmans & Beckers (2017).). PLF contributes to the refinement of livestock farming systems, promoting more individualized care and attention to animal needs.

Consumer awareness and market trends also significantly influence animal welfare considerations in livestock farming. Studies by Cardoso, von Keyserlingk & Hötzel (2018) highlight the impact of

consumer preferences on the demand for welfare-friendly products. The research underscores that increased consumer awareness and support for higher welfare standards can incentivize positive changes in livestock management practices. The assessment of animal welfare in livestock farming serves as a critical dependent variable in understanding the multifaceted dynamics of livestock management. The literature reveals diverse approaches and challenges across different regions, reflecting the complex interplay of cultural, regulatory, and technological factors. As global awareness of animal welfare continues to grow, ongoing research and collaborative efforts are essential to ensure the development of sustainable and ethical livestock farming practices worldwide.

Regulatory frameworks play a pivotal role in shaping the landscape of animal welfare within livestock farming systems. These frameworks constitute a set of rules, policies, and guidelines established by governmental bodies or industry organizations to ensure the humane treatment of animals in various agricultural practices. The conceptual analysis of regulatory frameworks in the context of animal welfare involves examining the principles, mechanisms, and enforcement strategies that influence how animals are cared for and managed within livestock systems. As highlighted by Fraser (2008), these frameworks serve as critical tools for defining acceptable standards of treatment and promoting responsible stewardship of animals in agriculture.

The principles underpinning regulatory frameworks for animal welfare in livestock farming are multifaceted, encompassing ethical, scientific, and societal considerations. Fraser (2008) emphasizes that these frameworks are often rooted in the recognition of animals as sentient beings capable of experiencing pain and suffering. The ethical foundation acknowledges the intrinsic value of animals and seeks to mitigate potential harms inflicted upon them in the course of farming practices. Scientific knowledge about animal behavior, physiology, and cognition informs the development of regulations that aim to align husbandry practices with the natural needs and preferences of animals (Dawkins, 2017). Furthermore, societal attitudes toward animal welfare and evolving perceptions of responsible farming contribute to the principles that regulatory frameworks seek to uphold.

The mechanisms embedded in regulatory frameworks involve a combination of prescriptive rules, standards, and monitoring protocols designed to guide and assess the treatment of animals in livestock farming. Prescriptive rules, as highlighted by Dawkins (2017), stipulate specific practices that must be followed, such as space allowances, feeding regimens, and veterinary care. Standards provide a broader framework, outlining general principles that farmers should adhere to, allowing for flexibility in implementation while maintaining overarching principles of animal welfare. Regulatory agencies often employ monitoring and inspection mechanisms to ensure compliance, with penalties for non-compliance serving as a deterrent (Yeates, 2011). The effectiveness of these mechanisms is contingent on the clarity of regulations, the capacity for enforcement, and the collaboration between regulatory bodies and the farming industry.

Despite the existence of regulatory frameworks, challenges persist in enforcing and ensuring compliance with animal welfare standards in livestock farming. Fraser (2008) points out that variations in the interpretation and application of regulations among different stakeholders, including farmers, veterinarians, and enforcement agencies, can lead to inconsistencies. Limited resources for monitoring and enforcement, particularly in regions with large or diverse livestock industries, may impede the effectiveness of regulatory measures (Yeates, 2011). Additionally, a lack of public awareness and pressure for stringent enforcement may contribute to gaps in compliance, emphasizing the need for ongoing education and advocacy.

The conceptual analysis of regulatory frameworks reveals considerable variation in approaches to animal welfare in livestock farming across different regions. In the European Union, for instance, regulatory frameworks are characterized by detailed directives covering various aspects of animal

husbandry, transportation, and slaughter (European Commission, 2021). In the United States and Canada, a combination of federal and state regulations, industry-led initiatives, and voluntary certification programs shape the regulatory landscape (USDA, 2021; National Farm Animal Care Council, 2021). In African countries, where regulatory frameworks are still evolving, there is often a blend of traditional practices and emerging regulations reflecting a complex interplay of cultural, economic, and ecological factors (Dzikiti, Muchenje, Marume & Chimonyo, 2012).

The impact of regulatory frameworks on animal welfare outcomes in livestock farming is a critical aspect of the conceptual analysis. Fraser (2008) notes that the effectiveness of these frameworks in improving animal welfare depends on the specificity and enforceability of regulations, the engagement of stakeholders, and the incorporation of scientific knowledge. Research by Turner, Vaughn & Brod (2019) in Canada emphasizes the need for ongoing assessment and adaptation of regulatory frameworks to align with evolving scientific understanding and societal expectations. The analysis underscores the interconnectedness of regulatory approaches, enforcement mechanisms, and the actual well-being of animals in livestock farming. This analysis of regulatory frameworks in the context of animal welfare in livestock farming reveals a complex interplay of principles, mechanisms, enforcement challenges, global variations, and impact on outcomes. While these frameworks play a crucial role in defining acceptable standards and promoting responsible farming practices, ongoing research, stakeholder collaboration, and adaptive regulatory approaches are essential to address the evolving dynamics of animal welfare and ensure the humane treatment of animals in agricultural systems.

1.2 Objective of the Study

The main objective of this study was to investigate the regulatory frameworks for animal welfare in livestock farming.

1.3 Problem Statement

According to a report by the World Organization for Animal Health (OIE), as of 2021, over 80% of the world's countries have animal welfare legislation or regulations in place, demonstrating a widespread recognition of the need for legal frameworks to safeguard the well-being of animals in various contexts, including livestock farming (OIE, 2021). Despite this global acknowledgment and the proliferation of regulatory measures, there is a lack of comprehensive empirical evidence establishing the direct impact of these frameworks on the actual conditions and treatment of animals within livestock farming systems. Despite the increasing recognition of the importance of regulatory frameworks for animal welfare in livestock farming, there remains a significant gap in our understanding of the effectiveness and impact of these frameworks on actual welfare outcomes for animals. While regulatory measures are implemented globally to establish standards and guidelines for the humane treatment of animals in agriculture, the extent to which these regulations translate into tangible improvements in animal well-being is not well-documented. This study aims to address the critical gap in knowledge by systematically examining the correlation between regulatory frameworks and measurable indicators of animal welfare in diverse livestock farming systems.

REVIEW OF RELATED LITERATURE

2.1 Social Contract Theory in Animal Welfare Governance

Social Contract Theory has roots in the works of political philosophers, with key contributions from Jean-Jacques Rousseau in the 18th century. Social Contract Theory posits that individuals voluntarily come together to form a social contract, surrendering certain freedoms to a governing authority in exchange for protection and the common good. Applied to the study of regulatory frameworks for animal welfare in livestock farming, this theory suggests that society, recognizing the moral

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responsibility to protect the interests of animals, establishes a social contract through legal frameworks. Livestock farmers, as part of this social contract, accept certain regulations to ensure the humane treatment of animals in exchange for societal approval and support.

The study seeks to investigate the efficacy of regulatory frameworks in ensuring animal welfare within the context of livestock farming. Social Contract Theory provides a theoretical foundation by asserting that regulations are not arbitrary impositions but rather a collective agreement reflecting societal values and ethics regarding the treatment of animals. The theory underscores the reciprocal relationship between the farming community, regulators, and society at large, suggesting that regulatory frameworks are a manifestation of the shared commitment to uphold animal welfare standards. By applying Social Contract Theory, the study can assess how well these frameworks align with societal expectations, and whether they effectively translate moral considerations into tangible improvements in the lives of animals in livestock farming.

2.2 Empirical Review

One notable study conducted by Fraser (2012) focused on the multifaceted nature of regulatory frameworks in Europe. The purpose was to analyze the European Union's directives and regulations governing animal welfare in livestock farming. The study employed a qualitative content analysis methodology to examine legal documents and policy frameworks. Findings indicated that while the EU demonstrated a commitment to establishing detailed guidelines, variations in interpretation and enforcement across member states presented challenges. Recommendations included harmonizing regulations and improving mechanisms for consistent enforcement to ensure uniform animal welfare standards throughout the European Union.

In North America, a study by Rollin (2013) delved into the ethical considerations within regulatory frameworks. The purpose was to assess the ethical foundations of regulations governing animal welfare in the United States and Canada. Employing an ethical analysis approach, Rollin critically examined existing regulations and ethical principles underpinning animal welfare. Findings emphasized the need for regulations to align more closely with evolving societal attitudes toward animal welfare, and recommendations included periodic ethical reviews of existing frameworks to ensure continued relevance.

A contrasting study by Mullan, Downes, Brennan & Burchell (2014) concentrated on the practical implications of regulatory frameworks in Australia. The study aimed to evaluate the impact of regulatory measures on the welfare of farmed animals. Utilizing a mixed-methods approach, researchers combined quantitative assessments of farm conditions with qualitative interviews of farmers and regulatory officials. Findings indicated that while regulations had positive effects on certain welfare indicators, challenges such as resource limitations and variations in compliance existed. Recommendations focused on increasing resources for enforcement and fostering collaboration between farmers and regulators to enhance overall animal welfare.

Turning to Africa, a study by Dzikiti, Muchenje, Marume & Chimonyo (2015) explored the intersection of traditional practices and emerging regulations in Zimbabwe. The purpose was to understand the dynamics of regulatory frameworks within the context of cultural and economic influences. Employing a qualitative case study methodology, the researchers conducted interviews with farmers, policymakers, and community members. Findings highlighted the need for context-specific approaches, acknowledging the coexistence of traditional methods and regulatory measures. Recommendations included integrating indigenous knowledge into regulatory frameworks to improve cultural relevance and acceptance.

In the United Kingdom, a study by Barnett (2012) took a longitudinal perspective on the impact of regulatory changes. The purpose was to assess the outcomes of modifications in animal welfare regulations over a specific timeframe. Employing a retrospective analysis, the study examined data on key animal welfare indicators before and after regulatory changes. Findings indicated improvements in certain welfare aspects, but also identified areas requiring further attention. Recommendations included periodic reviews of regulations to ensure continuous adaptation to evolving scientific knowledge and societal expectations.

Concluding the literature review, a meta-analysis by Hemsworth, Rice, Karlen, Calleja & Barnett (2014) synthesized findings from various international studies. The purpose was to identify common trends, challenges, and best practices in the realm of regulatory frameworks for animal welfare. Utilizing a quantitative synthesis approach, the researchers analyzed data from a range of studies. Findings emphasized the importance of clarity in regulations, effective enforcement mechanisms, and collaboration between regulators and the farming industry. Recommendations included the development of standardized assessment tools and the establishment of global benchmarks to enhance consistency in animal welfare governance.

2.3 Knowledge Gaps

While the literature from 2012 to 2015 provides valuable insights into the effectiveness and challenges of regulatory frameworks for animal welfare in livestock farming across various regions, there is a notable contextual research gap in terms of cultural nuances and regional diversity. Most studies have primarily focused on developed regions such as Europe, North America, and Australia, with limited representation from diverse agricultural contexts, particularly in Asia and Latin America. Future research should aim to address this gap by investigating how cultural, economic, and geographical factors influence the implementation and impact of regulatory frameworks in diverse global settings. Understanding these contextual variations is crucial for tailoring effective and culturally sensitive regulatory approaches that consider the unique challenges and opportunities present in different regions.

A conceptual research gap emerges from the need to explore the evolving ethical dimensions within regulatory frameworks for animal welfare. While Rollin (2013) delves into ethical considerations in the North American context, there is a broader conceptual space for investigating how evolving societal attitudes toward animals and their welfare influence the formulation, adaptation, and acceptance of regulations. Future research should aim to deepen our understanding of the ethical foundations of regulatory frameworks, considering shifts in public perceptions, ethical debates, and the incorporation of emerging ethical frameworks within evolving animal welfare policies. Such conceptual exploration is vital for ensuring that regulations remain ethically aligned with contemporary societal values and expectations.

The existing literature predominantly employs qualitative and mixed-methods approaches to explore regulatory frameworks for animal welfare, providing rich insights into the complexities of governance. However, there is a methodological research gap in terms of the limited use of standardized assessment tools and quantitative measures across studies. Future research could benefit from incorporating more systematic and standardized methodologies to assess the impact of regulatory frameworks on animal welfare outcomes. This might include the development and application of consistent metrics and indicators that allow for cross-study comparisons and the establishment of more universally applicable benchmarks. By integrating robust quantitative methodologies, researchers can contribute to a more comprehensive and evidence-based understanding of the quantitative aspects of animal welfare within the regulatory context.

RESEARCH DESIGN

The study conducted a comprehensive examination and synthesis of existing scholarly works related to the role of agroecology in sustainable livestock practices. This multifaceted process entailed reviewing a diverse range of academic sources, including books, journal articles, and other relevant publications, to acquire a thorough understanding of the current state of knowledge within the field. Through a systematic exploration of the literature, researchers gain insights into key theories, methodologies, findings, and gaps in the existing body of knowledge, which subsequently informs the development of the research framework and questions.

FINDINGS

A key finding across the studies indicates a considerable variability in the implementation and enforcement of regulatory frameworks for animal welfare in livestock farming. The research consistently demonstrates that the interpretation and application of regulations differ not only between countries but also within regions. This variability is influenced by factors such as cultural practices, economic constraints, and the capacity of regulatory bodies. Consequently, the effectiveness of the regulatory frameworks in ensuring consistent and high standards of animal welfare is hindered by this lack of uniformity in implementation.

The literature highlights the increasing importance of ethical considerations within the formulation and evaluation of regulatory frameworks. Studies, particularly those conducted in North America and Europe, reveal a growing emphasis on aligning regulations with evolving societal attitudes toward animal welfare. Findings underscore the need for regulatory frameworks to not only meet legal standards but also to address ethical concerns raised by the public. The studies suggest that regulations that incorporate ethical considerations tend to garner greater public acceptance and support, contributing to improved compliance within the livestock farming industry.

A consistent theme emerging from the findings is the identification of challenges in the practical implementation of regulatory frameworks on the ground. Researchers observe that while regulations may be well-intentioned, practical constraints such as limited resources for monitoring and enforcement, variations in farm sizes, and divergent compliance levels among farmers present significant challenges. The findings underscore the need for policymakers to address these practical hurdles to ensure that regulatory measures translate into tangible improvements in animal welfare. Moreover, studies emphasize the importance of fostering collaboration between regulatory bodies, farmers, and industry stakeholders to overcome these challenges and create a more effective and sustainable regulatory landscape.

Longitudinal studies conducted in the United Kingdom reveal findings related to the impact of regulatory changes on animal welfare outcomes over time. The research suggests that certain regulatory modifications have led to observable improvements in specific welfare indicators. However, the findings also indicate that continuous adaptation and periodic reviews of regulations are necessary to address emerging challenges and align with evolving scientific knowledge. The longitudinal perspective emphasizes the dynamic nature of regulatory frameworks, urging policymakers to adopt a proactive approach in ensuring that regulations remain effective and responsive to changing circumstances.

A meta-analysis synthesizes findings from international studies, aiming to identify common trends, challenges, and best practices in the regulatory frameworks for animal welfare. The research underscores the importance of clarity in regulations, effective enforcement mechanisms, and collaboration between regulators and the farming industry. The findings emphasize the need for standardized assessment tools and the establishment of global benchmarks to enhance consistency in

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animal welfare governance. The meta-analysis contributes to a broader understanding of the global landscape of regulatory frameworks, providing valuable insights for policymakers and stakeholders seeking to improve and harmonize animal welfare standards on a global scale.

CONCLUSION AND CONTRIBUTION TO THEORY AND POLICY

5.1 Conclusion

In conclusion, the study on regulatory frameworks for animal welfare in livestock farming has illuminated the intricate dynamics and multifaceted challenges inherent in governing the treatment of animals within agricultural systems. The findings consistently underscore the variability in the implementation of regulations across different regions, shaped by cultural, economic, and practical considerations. While regulations play a pivotal role in setting standards for humane treatment, the study highlights the need for a nuanced and context-specific approach to address the diverse challenges faced by farmers and regulatory bodies. Ethical considerations have emerged as a critical aspect, with the evolving societal attitudes toward animal welfare urging policymakers to integrate ethical principles into regulatory frameworks. Moreover, the research emphasizes that the practical implications of regulatory measures, such as resource limitations and variations in farm sizes, must be taken into account to enhance the overall effectiveness and sustainability of animal welfare governance in livestock farming.

Looking forward, the study's findings suggest several avenues for future research and policy development. The identified variability in regulatory implementation calls for further exploration into the specific contextual factors influencing compliance and enforcement. Additionally, the increasing importance of ethical considerations signals a growing need for policymakers to engage with the public and industry stakeholders in shaping regulations that align with evolving ethical norms. The challenges in practical implementation highlight the necessity of targeted interventions to support farmers in meeting regulatory standards, such as providing resources for compliance and fostering collaborative initiatives. This comprehensive understanding of the complexities surrounding regulatory frameworks for animal welfare provides a foundation for future research endeavors aimed at refining and tailoring governance mechanisms to ensure the well-being of animals in diverse livestock farming contexts.

5.2 Recommendations

The comprehensive recommendations arising from the study on Regulatory Frameworks for Animal Welfare in Livestock Farming suggest a multifaceted approach to enhance the effectiveness and ethical alignment of existing governance structures. The study advocates for a harmonization of regulations, particularly in regions where variations in interpretation and enforcement exist, aiming to establish uniform standards for animal welfare. Furthermore, it emphasizes the integration of ethical considerations into the formulation of regulatory frameworks, acknowledging the growing importance of public perception and societal attitudes toward animal welfare. The study underscores the need for policymakers to address practical implementation challenges by allocating adequate resources for monitoring and enforcement, fostering collaboration between regulatory bodies and farmers, and promoting industry-wide education and training programs. Additionally, the recommendations call for a proactive and dynamic approach, with periodic reviews of regulations to ensure continued relevance and responsiveness to emerging scientific knowledge and societal expectations. Overall, the study advocates for a global synthesis of best practices, the establishment of standardized assessment tools, and the development of global benchmarks to promote consistency and improvement in animal welfare governance on a global scale.

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