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## **IMPLEMENTATION OF FOOD SAFETY POLICY IN THE EUROPEAN UNION – GUIDANCE, VARIETY, AND RESOLUTION OF CHALLENGES**

**ABSTRACT:** The paper explores the intricate landscape of implementing food safety policies within the European Union (EU) context. Through an examination of key themes, including discretion and enforcement of policies, the EU's problem-resolution strategies, and the concept of individualization that surpasses mere adherence to laws, the paper sheds light on the complexities and nuances inherent in ensuring food safety across the diverse member states. The paper scrutinizes the role of discretion in the enforcement of food safety policies within the EU. It delves into how regulatory bodies exercise judgment in interpreting and applying policies, taking into account the varying contexts and challenges faced by member states. The discussion highlights the need for a balanced approach that considers both uniformity in enforcement and flexibility to address specific regional or sectoral requirements. Further, the paper focuses on the EU's problem-resolution strategies concerning food safety policies. It explores the mechanisms in place for identifying and

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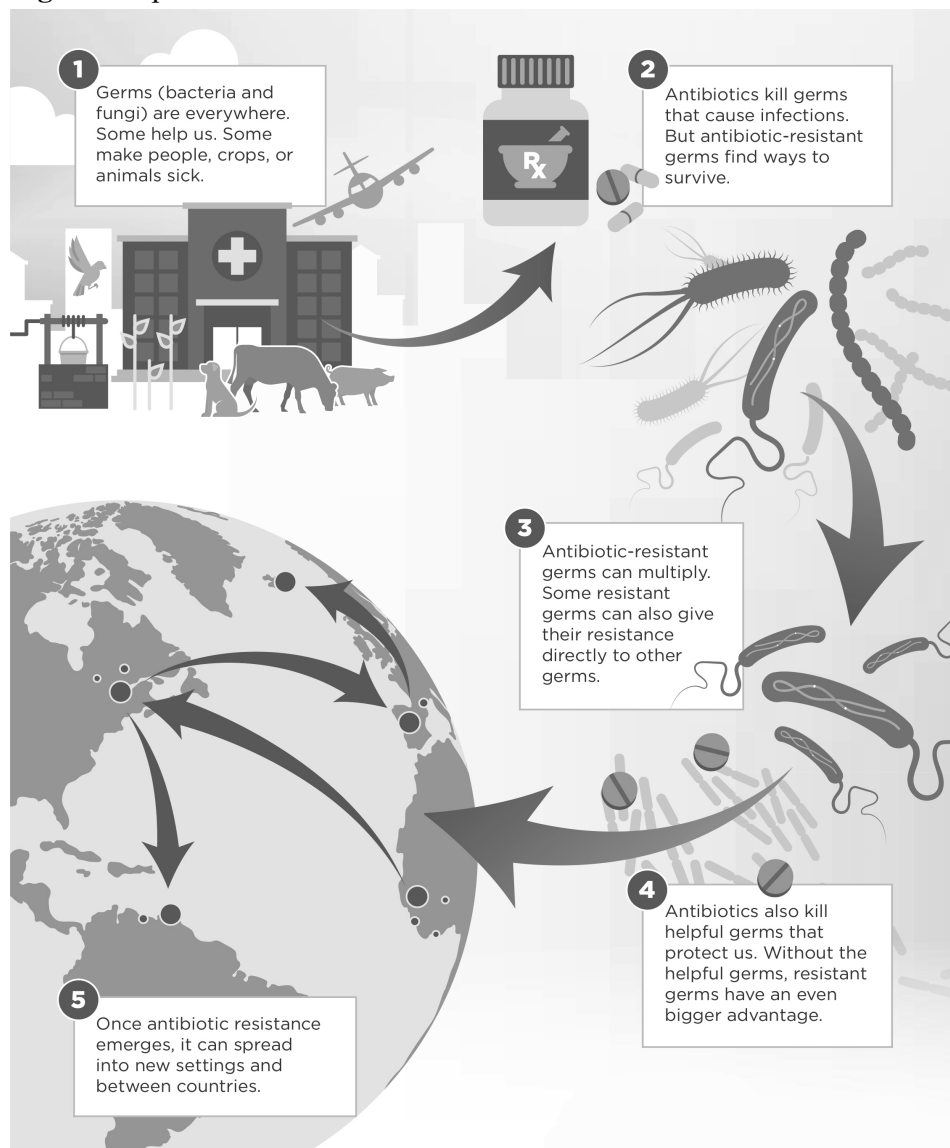
addressing challenges that arise during the implementation phase. This includes an analysis of coordination among member states, collaboration with stakeholders, and the role of regulatory bodies in mitigating issues and fostering a harmonized approach to problem-solving. In the end, the paper introduces the concept of individualization, emphasizing how a diverse range of policies and practices exists beyond mere adherence to overarching laws. This section explores the unique approaches taken by member states in tailoring food safety policies to suit their specific circumstances. It investigates the benefits and potential challenges associated with such individualization, considering its impact on overall policy effectiveness and coherence.

**Keywords:** *European Union, food safety, European policy, guidelines, regulations, directives.*

## 1. Introduction

If we do not take urgent, coordinated action involving all stakeholders, the world is at risk of entering a postantibiotic era, where common infections and minor injuries that have been treatable for decades can become fatal, due to greater resistance to antibiotics (Puvača & de Llanos Frutos, 2021). When too many antibiotics are fed to livestock in intensive farming, one significant source of antibiotic resistance emerges and spreads to human consumers (Vidovic & Vidovic, 2020) (Figure 1).

The European Union (EU) has taken many initiatives to address this issue in the European food market (Hazards et al., 2021). The EU, for example, limits the amount of antibiotics provided to animals to the amount required for one treatment (De Briyne, Atkinson, Borriello & Pokludova, 2014; Puvača & Britt, 2020). However, different countries interpreted this law in startlingly different ways. Antibiotic use was limited to seven days in Germany (Rennings et al., 2015), one month in Austria (Hinteregger, Janzek-Hawlat & Reichardt, 2016), and France and the United Kingdom (UK) simply copied the EU wording without defining a time limit (Stam et al., 2012). As a result, depending on how the rule is read, eating meat or eggs may be more or less safe. This study examines and evaluates the results of the interpretative process, termed as customization, by employing the case study of food safety regulations in Western European nations. Cooperation between Switzerland and the EU in the European veterinary domain dates back to 2009. With the recent contractual commitments to the EU, Swiss authorities engaged a diverse team

**Figure 1.** Spread of antibiotic resistance

Source: (CDC, 2023).

of researchers from the University of Bern with the objective of determining the alignment of Swiss veterinary regulations with pertinent EU legislation (Duina & Zhou, 2022). It was imperative to outline the implementation of regulations in four member states akin to Switzerland and to elucidate the

discussions and challenges surrounding their execution. Although no instances of non-compliance with EU law were identified, the variations in veterinary drugs regulations among the few countries were so significant that establishing a cohesive concept of a European veterinary space proved complex. This prompted the exploration for a systematic method to compare domestic regulations with the EU standard. Drawing from diverse strands of literature encompassing policy implementation, Europeanization, regulatory dynamics, and policy formulation and assessment, the inception of the research was marked by the concept of customization. This article delves into how nations exercise their discretion to tailor EU Directives to domestic contexts during transposition, the reasons underlying such adaptations, and their implications for policy outcomes. Motivated by a desire to comprehend the evolution of regulations during implementation and a pragmatic interest in how this impacts the resolution of policy challenges, the study seeks to unravel the dynamics of regulatory transformation (Flynn, Nyhan & Reifler, 2017). Put differently, this is a comparative examination of how food safety policies are executed across the EU, crafted partially with the lens of a policy evaluator. Through this lens, the narrative will elucidate the significance of adopting this perspective for at least three compelling reasons. Firstly, discretion in policy implementation serves as the cornerstone of policy achievement, encompassing effectiveness, efficiency, and resilience (Mukherjee & Bali, 2019). Nevertheless, the function of discretion remains a subject of debate among both academics and practitioners. Secondly, certain member states leverage the implementation phase to influence distant EU decisions. The significance of discretion in achieving policy objectives thus becomes notably pronounced when considering the EU as a collaborative governance entity addressing intricate, transnational policy challenges (Engl & Evrard, 2020; Vapa Tankosić, Puvača, Giannenas, Tufarelli & Ignjatijević, 2022). Thirdly, comprehending this significance requires moving beyond mere considerations of non-compliance and instead acknowledging the nuanced variations in implementation (Scholten, 2018). Failing to do so would overlook a crucial aspect of the situation. This paper will delve into various perspectives on discretion, compliance, and performance within implementation theory.

## **2. Discretion and enforcement of policies**

Public policies are intended to address a variety of societal issues, such as guaranteeing food safety (Vapa Tankosić et al., 2022). Policy academics frequently consider the policy process to be a cycle with various stages extending broadly from problem characterization, agenda formulation, and

policymaking to implementation and assessment (Wegrich & Kai, 2007). Although it serves as a heuristic, this perspective serves as a poignant reminder that, much like how the strength of a chain hinges on its weakest link, the effectiveness of any policy hinges solely on its execution. Hence, policy implementation delineates the post-legislative phase, wherein a bill transitions into actionable measures—a process often likened to the transformation of policy into tangible actions (O'Toole & Jr, 2000).

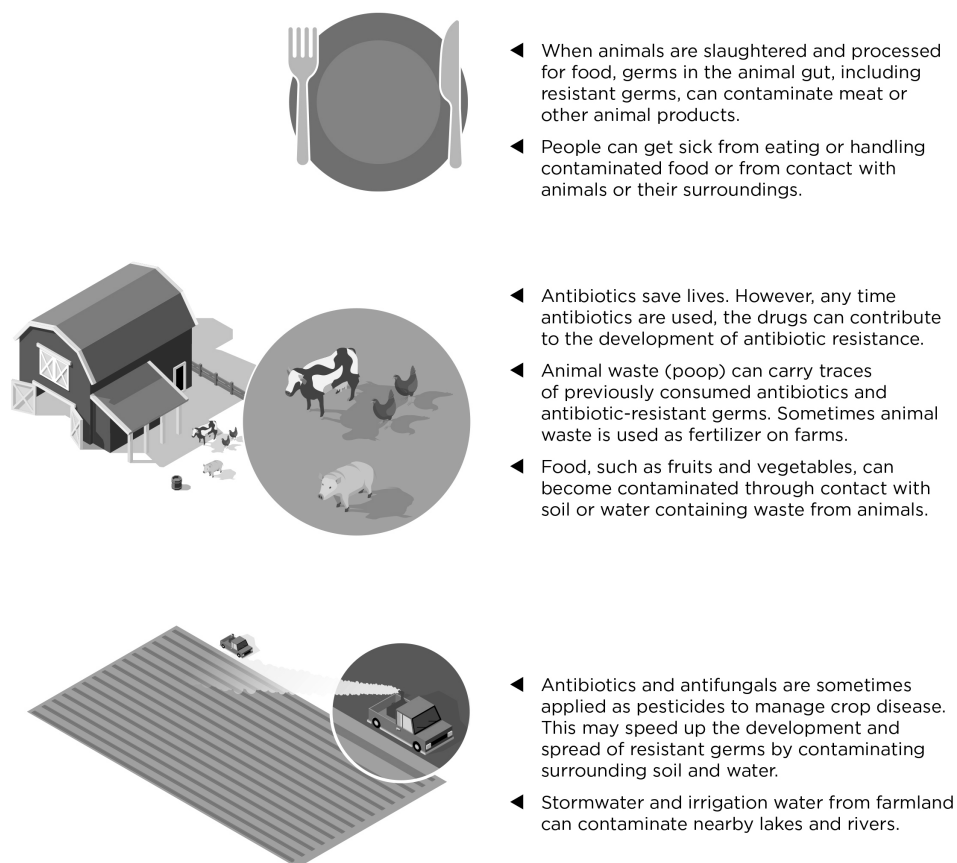
A policy on paper discusses goals and plans for resolving an issue, whereas a policy in action discusses how the problem was resolved (Đurić, Lukač Bulatović, Tomaš Simin & Glavaš Trbić, 2023; Vapa Tankosić, 2023).

The realm of policy implementation perpetually gives rise to dilemmas regarding discretion and diversity. The implementation journey comprises several distinct stages, each fraught with its own complexities. Take, for instance, the intricate multilevel structures characteristic of entities like the EU, where a policy originating from a central authority undergoes an initial phase of transposition by member states, residing as mere words on paper. It is subsequently brought to life through the concerted efforts of administrative entities, exemplified here by food safety inspectors, and societal stakeholders, including food producers, thereby navigating a labyrinth of actors and processes before fruition (Steunenberg & Rhinard, 2010) (Figure 2). Throughout these stages, the policymaking continuum remains active and dynamic. Inherent within policy implementation is the presence of discretion among implementers, granting them a degree of autonomy in their actions. Consequently, the executed policy often diverges from its written form, particularly in contexts characterized by multi-stage and multilevel implementation processes.

Researchers and practitioners of policy implementation agree that typical policy issues can only be adequately addressed if policies are implemented (Mercer et al., 2007). Yet, conflicting perspectives have persistently shaped opinions regarding the significance and appropriateness of discretion in policy implementation. Individuals encountering policy implementation for the first time tend to instinctively gravitate towards a top-down outlook, perceiving it primarily as a technical endeavor intended to adhere closely to the original policy directives established by democratically sanctioned actors (Craddock, O'Halloran, McPherson, Hean & Hammick, 2013). From these top-down vantage points, discretionary adjustments are perceived as presenting a control dilemma, potentially yielding undesirable implementation outcomes. According to this perspective, granting greater latitude to policy implementers increases the likelihood of their prioritizing personal interests over the

overarching policy objectives. The primary apprehension with the top-down paradigm revolves around issues of compliance, which hinges on the extent to which the recipients of the norm adhere to its stipulations. Consequently, adherence-based implementation evaluates the extent to which the centrally prescribed blueprint is faithfully executed from the upper echelons down to the grassroots level (Fischer, Imgrund, Janiesch & Winkelmann, 2020)

**Figure 2.** A complex web: Everything is connected food, farms, and animals



Source: (CDC, 2023).

Top-down approaches have been criticized because policy execution requires judgment (Pissourios, 2014). Bottom-up implementation is viewed as decentralized problem-solving (Imperial, 2021). This perspective redirects attention away from mere adherence to rules and towards the individuals tasked with executing policies in real-world settings, underscoring their

pivotal role in tackling policy challenges. Bottom-up implementation theory accentuates the significance of implementing actors' proximity to the root of the policy issue, recognizing that this closeness bolsters their capacity to enhance policies through adaptation to diverse contexts and incorporation of local policy perspectives (Estensoro & Larrea, 2016). In this perspective, discretion serves as a tool enabling implementers to be attuned to the nuances of their contexts, rectify policy shortcomings, and fulfill their duties effectively. Tailoring implementation to specific country contexts can facilitate the development of policies that are not only effective but also widely embraced, particularly where the issue at hand is most acute. Evaluating performance implementation involves assessing whether a policy effectively addresses the initial problem it was intended to resolve, thus gauging its overall efficacy.

Modern policy implementation research has traditionally favored hybrid approaches that recognize the interaction between discretion and control (Christensen & Lægrend, 2011). Policy implementation in practice embodies a hybrid nature: comprehending it theoretically and empirically mandates addressing the challenges of both top-down, centralized control, and bottom-up, decentralized flexibility, as well as their interplay. The empirical inquiry into whether policy deviations beyond legal mandates enhance policy outcomes is context-dependent. The focus now shifts from whether policy implementation ought to entail discretion to determining the optimal methods for leveraging discretion to effectively realize policy objectives (Tummers & Bekkers, 2014).

However, whenever policy issues are managed, a fundamental tension arises between granting and limiting discretion (Pritchett & Woolcock, 2004). Consequently, the choice of effective governance methods by various stakeholders implicitly embodies both top-down and bottom-up perspectives (Fromhold-Eisebith & Eisebith, 2005). For instance, the design of federal systems often reflects the belief that member states possess the capacity to devise optimal solutions to policy challenges, customized to their unique contexts. While this approach may foster the acceptance of centralized policies and potentially encourage compliance among member states, it may also introduce trade-offs in terms of efficient and effective problem-solving, as well as distributive justice. However, the intricacies and implications of these tensions are not yet fully comprehended.

### **3. The European Union's approach to problem resolution**

There has been a recurring assertion that conducting comparative studies on federalism and establishing a more explicit connection with the broader literature on (multilevel) policy implementation can significantly aid research on EU policy implementation (Irepoglu Carreras, 2019). Certainly, the tension between discretion and control becomes particularly prominent within the framework of the European Union (Mendes, 2017). Broadly speaking, the processes of economic modernization and globalization are compounding the complexity of public policy challenges. Food safety policy serves as a prime illustration of this phenomenon. With food production and trade now operating on a grand scale, characterized by rationalization and integration into regional and global single markets, ensuring food safety demands transboundary and cross-sectoral solutions (Vapa Tankosić et al., 2022). Efforts to address such challenges within resource constraints have given rise to the regulatory state paradigm, wherein the state takes on a steering role while delegating the implementation tasks to various social, corporate, and political entities. The European Union stands out as a remarkable exemplar of a supranational regulatory state, representing a multilevel governance framework endeavoring to formulate collective responses to common policy issues.

In this context, European integration entails member states relinquishing a portion of their sovereignty to a shared institutional framework for the implementation of collective policies. Numerous EU Directives, such as those regulating the use of veterinary medications in animals to safeguard food safety and prevent antibiotic resistance, exemplify this collaborative approach (Ferri, Ranucci, Romagnoli & Giaccone, 2017; Okocha, Olatoye & Adedeji, 2018; Puvača, Vapa Tankosić, Ignjatijević Carić & Prodanović, 2022). Subsequently, the EU delegates certain decision-making processes to member countries responsible for transposing EU policies into national and sub-national laws and implementing them. Functioning as a regulatory state, the EU endeavors to harmonize integration with respect for legitimate national preferences. The repercussions on domestic policies are scrutinized by Europeanization scholars, who perceive transposition as a conduit through which EU legislation influences domestic regulations (Drahn, 2020). Europeanization, in broad terms, encompasses the process of adjustment to and the domestic ramifications of European governance within countries both within and outside the European Union.

In the enduring tradition of EU policy implementation research, considerable attention has been directed towards assessing the extent



of compliance or non-compliance with EU Directives, the promptness and accuracy of transposition efforts, the prevalence of non-compliance instances, and the pace of transposition (Tallberg, 2002). This emphasis on legal compliance is particularly significant due to the multi-level governance structure of the EU, which encompasses supranational, regional, national, and local levels, as well as multiple stages of implementation. Furthermore, the EU inherently faces limitations in controlling implementation. Instances of non-compliance, such as the asylum crisis in 2016–2017, the European debt crisis, and the Dieselgate scandal, often strengthen calls for more coordinated efforts in EU policy implementation.

However, at present, the concept of uniformity, central to the Europeanization process, is facing challenges. The perception of diminishing sovereignty and control over national policies is increasingly linked to European integration. This sentiment is reflected in the rise of Euroskepticism, exemplified by the United Kingdom's decision to exit the EU in pursuit of reclaiming national authority (Dickson, 2023).

#### **4. Individualization: variety surpassing adherence to laws**

Despite the array of diverse and intricate concepts and explanations proposed for EU policy implementation outcomes, they predominantly center on the process of transposition. These frameworks primarily focus on legal compliance, specifically assessing whether the translation of EU Directives into domestic legislation adheres to the stipulations outlined in the directives. As a result, research on policy implementation within the EU exhibits a noticeable bias towards evaluating legislative compliance (Zbiral, Prince & Smekal, 2023). This approach places significant emphasis on evaluating the extent of (non-) compliance with EU Directives, the punctuality and accuracy of transposition efforts, the frequency of non-compliance instances, and the pace of transposition. The issue of legal compliance reflects a hierarchical perspective on implementation, where the EU's centralized decisions are expected to directly shape national outcomes. However, some argue that this focus fails to adequately acknowledge the complexities inherent in member states' participation within a multilevel organization. Despite its significance, this approach tends to overstate the EU's role as the primary driver of domestic change. The preoccupation with legal conformity has constrained EU researchers from delving deeper into the implementation process and unpacking the intricacies of EU legislation in action. Mere adherence to procedural obligations by member states or local implementers

does not necessarily indicate the extent to which they effectively implement EU policies (Casula, 2022).

The practical implementation of EU policies may unfold through entirely different dynamics than formal conformity, with profound implications for policy outcomes. There is mounting evidence suggesting that mere legal compliance with EU law may bear little correlation with its actual application in practice. This underscores the critical importance of robust oversight and monitoring mechanisms at both EU and national levels. Given that levels of legal compliance offer limited insights into the operationalization of centralized laws, they often fail to reflect how common policy challenges are ultimately addressed.

Moreover, the equilibrium of variations within the constraints set by EU Directives remains an underexplored outcome of transposition efforts. The fixation on compliance overlooks the flexibility inherent in much of EU law, which permits member states to diverge from EU requirements to facilitate context-sensitive problem-solving. For instance, provisions for market-correcting measures grant member states the latitude to surpass the EU's minimum standards. Indeed, Europeanization research has tended to overlook the fact that the implementation of EU policies yields diverse national outcomes (Havlík, 2023). Even in cases where member states exhibit compliance with EU law, significant nuanced distinctions persist in the implementation of EU regulations from one country to another. These variations coexist alongside the incentives prompting national authorities to adhere to EU Directives. Embracing this legitimate diversity is pivotal in understanding the European experience, a facet often overlooked when emphasis is solely placed on compliance and negative integration.

The concept of customization shifts the focus within EU policy implementation towards these fine-grained disparities. Customization acknowledges the reality that EU laws undergo a process of vertical regulatory evolution throughout the implementation process, yielding a spectrum of bespoke domestic approaches to comparable policy issues (Pech & Vrchota, 2022). In the process of transposition, nations exercise their discretion to interpret EU policies and tailor them to suit local conditions. Customization specifically examines a particular facet of this adaptation process, namely the degree to which certain member states augment or diminish the number and strictness of corresponding regulations when implementing them (Teixeira & Tavares-Lehmann, 2022). The concept of customization introduces a fresh perspective for conceptualizing and evaluating the extent to which European law shapes national policymaking. It encapsulates the level of Europeanization

within domestic legislation, shifting the focus from merely quantifying the proportion of Europeanized domestic laws to assessing the depth of influence exerted by European legal norms on national policy frameworks (Cinar, Benneworth & Coenen, 2023; Abrantes et al., 2023).

## 5. Conclusion

The implementation of food safety policies in the European Union represents a complex and multifaceted endeavor. This paper has delved into the various aspects of this process, examining the guidance provided, the diverse range of policies in place, and the challenges encountered during implementation. As the European Union continues to evolve, it is evident that the commitment to ensuring the safety of the food supply remains a top priority. The variety of policies in existence reflects the nuanced nature of the food industry and the need for tailored approaches to different sectors.

Despite the progress made, challenges persist, ranging from coordination issues among member states to the dynamic nature of emerging risks. Policymakers, stakeholders, and regulatory bodies must collaborate closely, adapting strategies to effectively address these challenges. Furthermore, ongoing efforts to enhance transparency, communication, and risk management strategies are essential for the successful implementation and continuous improvement of food safety policies.

As the European Union navigates the intricacies of the globalized food market, the resolution of challenges requires a proactive and adaptive approach. By fostering a culture of continuous improvement, embracing technological advancements, and maintaining a robust regulatory framework, the European Union can further strengthen its position as a leader in ensuring the safety and quality of the food supply. Ultimately, the successful implementation of safety food policies not only safeguards public health but also contributes to building consumer trust and sustaining a resilient and secure food system for future generations.

In conclusion, the paper underscores the multifaceted nature of implementing safe food policies in the EU. It advocates for a balanced approach that embraces both uniformity and flexibility, emphasizes effective problem-resolution strategies, and recognizes the significance of individualization. By navigating these complexities, the EU can continue to strengthen its commitment to ensuring the safety and quality of the food supply, fostering resilience and adaptability in the face of evolving challenges.

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## **IMPLEMENTACIJA POLITIKE BEZBEDNOSTI HRANE U EVROPSKOJ UNIJI – UPUTSTVA, RAZNOVRSNOST I REŠAVANJE IZAZOVA**

**APSTRAKT:** Ovaj rad istražuje složene implementacije politika bezbednosti hrane unutar konteksta Evropske unije (EU). Kroz analizu ključnih tema, uključujući diskreciju i sprovođenje politika, strategije EU za rešavanje problema i koncept individualizacije koji prevazilazi prosto poštovanje zakona, rad osvetljava složenosti i nijanse inherentne u obezbeđivanju bezbednosti hrane širom zemalja članica. Rad detaljno ispituje ulogu diskrecije u sprovođenju politika bezbednosti hrane unutar EU. Zalazi u to kako regulatorna tela vrše sudski postupak u tumačenju i primeni politika, uzimajući u obzir različite kontekste i izazove sa kojima se suočavaju zemlje članice. Diskusija ističe potrebu za uravnoteženim pristupom koji uzima u obzir i uniformnost u sprovođenju i fleksibilnost u rešavanju specifičnih regionalnih ili sektorskih zahteva. Dodatno, rad se fokusira na strategije EU za rešavanje problema u vezi sa politikama bezbednosti hrane. Istražuje mehanizme koji postoje za identifikaciju i rešavanje izazova koji se javljaju tokom faze implementacije. Ovo uključuje analizu koordinacije među zemljama članicama, saradnje sa zainteresovanim stranama i uloge regulatornih tela u ublažavanju

problema i promovisanju harmonizovanog pristupa rešavanju problema. Na kraju, rad uvodi koncept individualizacije, naglašavajući kako postoji raznovrsnost politika i praksi koja prevazilazi prosto poštovanje opštih zakona. Rad istražuje jedinstvene pristupe koje zemlje članice preduzimaju prilikom prilagođavanja politika bezbednosti hrane svojim specifičnim okolnostima. Takođe, ispituje prednosti i potencijalne izazove povezane sa ovakvom individualizacijom, uzimajući u obzir njen uticaj na ukupnu efikasnost i koherentnost politika.

**Ključne reči:** *Evropska unija, bezbednost hrane, evropska politika, smernice, propisi, direktive.*

## References

1. Abrantes, D., Ferreira, M. C., Costa, P. D., Hora, J., Felício, S., Dias, T. G., & Coimbra, M. (2023). A New Perspective on Supporting Vulnerable Road Users' Safety, Security and Comfort through Personalized Route Planning. *International Journal of Environmental Research and Public Health*, 20(4), 3027. <https://doi.org/10.3390/ijerph20043027>
2. Casula, M. (2022). How different multilevel and multi-actor arrangements impact policy implementation: Evidence from EU regional policy. *Territory, Politics, Governance*, 1–25. <https://doi.org/10.1080/21622671.2022.2061590>
3. CDC. *The Latest on Antimicrobial Resistance*. Centers for Disease Control and Prevention. Downloaded 2023, November 09 from <https://www.cdc.gov/drugresistance/resources/fact-sheets.html>
4. Christensen, T., & Lægreid, P. (2011). Complexity and Hybrid Public Administration—Theoretical and Empirical Challenges. *Public Organization Review*, 11(4), 407–423. <https://doi.org/10.1007/s11115-010-0141-4>
5. Cinar, R., Benneworth, P., & Coenen, L. (2023). Changing conceptualization of innovation in the European Union and its impact on universities: Critical junctures and evolving institutional demands. *Research Evaluation*, pp. 1–15. <https://doi.org/10.1093/reseval/rvad006>
6. Craddock, D., O'Halloran, C., McPherson, K., Hean, S., & Hammick, M. (2013). A top-down approach impedes the use of theory? Interprofessional educational leaders' approaches to curriculum development and the use of learning theory. *Journal of Interprofessional Care*, 27(1), 65–72. <https://doi.org/10.3109/13561820.2012.736888>

7. De Briyne, N., Atkinson, J., Borriello, S. P., & Pokludová, L. (2014). Antibiotics used most commonly to treat animals in Europe. *Veterinary Record*, 175(13), pp. 325–325. <https://doi.org/10.1136/vr.102462>
8. Dickson, B. (2023). The United Kingdom: The constitutional consequences of ambivalence towards European integration. In: *EU Law and National Constitutions*. (pp. 148–171), The United Kingdom: Routledge
9. Drahn, P. (2020). Theoretical Explanations for the Domestic Impact of EU Law. In: P. Drahn (ed.), *Adoption of EU Business and Human Rights Policy: The Use of Discretion in the National Transposition of EU Directives* (pp. 49–96). Cham: Springer International Publishing. [https://doi.org/10.1007/978-3-030-46935-1\\_3](https://doi.org/10.1007/978-3-030-46935-1_3)
10. Đurić, K., Lukač Bulatović, M., Tomaš Simin, M., & Glavaš-Trbić, D. (2023). Monitoring and Evaluation as a Mechanism for Agricultural Policy Management. *Journal of Agronomy, Technology and Engineering Management (JATEM)*, 6(5), pp. 934–943. <https://doi.org/10.55817/XETH8265>
11. Engl, A., & Evrard, E. (2020). Agenda-setting dynamics in the post-2020 cohesion policy reform: The pathway towards the European cross-border mechanism as possible policy change. *Journal of European Integration*, 42(7), pp. 917–935. <https://doi.org/10.1080/07036337.2019.1689969>
12. Estensoro, M., & Larrea, M. (2016). Overcoming policy making problems in smart specialization strategies: Engaging subregional governments. *European Planning Studies*, 24(7), pp. 1319–1335. <https://doi.org/10.1080/09654313.2016.1174670>
13. Ferri, M., Ranucci, E., Romagnoli, P., & Giaccone, V. (2017). Antimicrobial resistance: A global emerging threat to public health systems. *Critical Reviews in Food Science and Nutrition*, 57(13), pp. 2857–2876. <https://doi.org/10.1080/10408398.2015.1077192>
14. Fischer, M., Imgrund, F., Janiesch, C., & Winkelmann, A. (2020). Strategy archetypes for digital transformation: Defining meta objectives using business process management. *Information & Management*, 57(5), 103262. <https://doi.org/10.1016/j.im.2019.103262>
15. Flynn, D. J., Nyhan, B., & Reifler, J. (2017). The Nature and Origins of Misperceptions: Understanding False and Unsupported Beliefs About Politics. *Political Psychology*, 38(S1), pp. 127–150. <https://doi.org/10.1111/pops.12394>
16. Fromhold-Eisebith, M., & Eisebith, G. (2005). How to institutionalize innovative clusters? Comparing explicit top-down and implicit bottom-up

- approaches. *Research Policy*, 34(8), pp. 1250–1268. <https://doi.org/10.1016/j.respol.2005.02.008>
17. Havlík, V. (2023). The Europeanization of territoriality and its limits: The territorial dimension of EU cohesion policy and its varying implementation. *European Planning Studies*, 31(4), pp. 802–821. <https://doi.org/10.1080/09654313.2022.2091407>
  18. Hazards (BIOHAZ), E. P. on B., Koutsoumanis, K., Allende, A., Álvarez-Ordóñez, A., Bolton, D., Bover-Cid, S., Chemaly, M., Davies, R., De Cesare, A., Herman, L., Hilbert, F., Lindqvist, R., Nauta, M., Ru, G., Simmons, M., Skandamis, P., Suffredini, E., Argüello, H., Berendonk, T., ... Peixe, L. (2021). Role played by the environment in the emergence and spread of antimicrobial resistance (AMR) through the food chain. *EFSA Journal*, 19(6), e06651. <https://doi.org/10.2903/j.efsa.2021.6651>
  19. Hinteregger, M., Janzek-Hawlat, S., & Reichardt, B. (2016). Seasonal Variations of Outpatient Antibiotic use in Austria. *Value in Health*, 19(7), A421. <https://doi.org/10.1016/j.jval.2016.09.432>
  20. Imperial, M. T. (2021). Implementation Structures: The Use of Top-Down and Bottom-Up Approaches to Policy Implementation. In: *Oxford Research Encyclopedia of Politics*. Oxford, <https://doi.org/10.1093/acrefore/9780190228637.013.1750>
  21. Irepoglu Carreras, Y. (2019). Problem-Solving Across Literatures: Comparative Federalism and Multi-Level Governance in Climate Change Action. *European Policy Analysis*, 5(1), pp. 117–134. <https://doi.org/10.1002/epa2.1066>
  22. Mendes, J. (2017). Bounded Discretion in EU Law: A Limited Judicial Paradigm in a Changing EU. *The Modern Law Review*, 80(3), pp. 443–472. <https://doi.org/10.1111/1468-2230.12265>
  23. Mercer, S. L., DeVinney, B. J., Fine, L. J., Green, L. W., & Dougherty, D. (2007). Study Designs for Effectiveness and Translation Research: Identifying Trade-offs. *American Journal of Preventive Medicine*, 33(2), pp. 139–154. <https://doi.org/10.1016/j.amepre.2007.04.005>
  24. Mukherjee, I., & Bali, A. S. (2019). Policy effectiveness and capacity: Two sides of the design coin. *Policy Design and Practice*, 2(2), pp. 103–114. <https://doi.org/10.1080/25741292.2019.1632616>
  25. Okocha, R. C., Olatoye, I. O., & Adedeji, O. B. (2018). Food safety impacts of antimicrobial use and their residues in aquaculture. *Public Health Reviews*, 39(1), 21. <https://doi.org/10.1186/s40985-018-0099-2>

26. O'Toole, L., Jr. (2000). Research on Policy Implementation: Assessment and Prospects. *Journal of Public Administration Research and Theory*, 10(2), pp. 263–288. <https://doi.org/10.1093/oxfordjournals.jpart.a024270>
27. Pech, M., & Vrchota, J. (2022). The Product Customization Process in Relation to Industry 4.0 and Digitalization. *Processes*, 10(3). <https://doi.org/10.3390/pr10030539>
28. Pissourios, I. (2014). Top-Down and Bottom-up Urban and Regional Planning: Towards a Framework for the Use of Planning Standards. *European Spatial Research and Policy*, 21(1), pp. 83–99
29. Pritchett, L., & Woolcock, M. (2004). Solutions When the Solution is the Problem: Arraying the Disarray in Development. *World Development*, 32(2), pp. 191–212. <https://doi.org/10.1016/j.worlddev.2003.08.009>
30. Puvača, N., & Britt, C. (2020). Welfare and legal aspects of making decisions on medical treatments of pet animals. *Pravo – teorija i praksa*, 37(4), pp. 55–64. <https://doi.org/10.5937/ptp2004055P>
31. Puvača, N., & de Llanos Frutos, R. (2021). Antimicrobial Resistance in Escherichia coli Strains Isolated from Humans and Pet Animals. *Antibiotics*, 10(1), p. 69. <https://doi.org/10.3390/antibiotics10010069>
32. Puvača, N., Vapa Tankosić, J., Ignjatijević, S., Carić, M., & Prodanović, R. (2022). Antimicrobial Resistance in the Environment: Review of the Selected Resistance Drivers and Public Health Concerns. *Journal of Agronomy, Technology and Engineering Management*, 5(5), pp. 793–802. <https://doi.org/10.55817/CSCQ3326>
33. Rennings, L. van, Münchhausen, C. von, Ottilie, H., Hartmann, M., Merle, R., Honscha, W., Käsbohrer, A., & Kreienbrock, L. (2015). Cross-Sectional Study on Antibiotic Usage in Pigs in Germany. *PLOS ONE*, 10(3), e0119114. <https://doi.org/10.1371/journal.pone.0119114>
34. Scholten, M. (2018). Mind the trend! Enforcement of EU law has been moving to 'Brussels'. In: *Innovative Approaches to EU Multilevel Implementation*. (pp. 96–114), The United Kingdom: Routledge
35. Stam, J., van Stuijvenberg, M., Grüber, C., Mosca, F., Arslanoglu, S., Chirico, G., Braegger, C. P., Riedler, J., Boehm, G., Sauer, P. J., & Group, for the M. I. P. S. 1 (MIPS 1) S. (2012). Antibiotic use in infants in the first year of life in five European countries. *Acta Paediatrica*, 101(9), pp. 929–934. <https://doi.org/10.1111/j.1651-2227.2012.02728.x>
36. Steunenberg, B., & Rhinard, M. (2010). The transposition of European law in EU member states: Between process and politics. *European Political Science Review*, 2(3), pp. 495–520. <https://doi.org/10.1017/S1755773910000196>



37. Tallberg, J. (2002). Paths to Compliance: Enforcement, Management, and the European Union. *International Organization*, 56(3), pp. 609–643. <https://doi.org/10.1162/002081802760199908>
38. Teixeira, J. E., & Tavares-Lehmann, A. T. C. P. (2022). Industry 4.0 in the European union: Policies and national strategies. *Technological Forecasting and Social Change*, 180, 121664. <https://doi.org/10.1016/j.techfore.2022.121664>
39. Tummers, L., & Bekkers, V. (2014). Policy Implementation, Street-level Bureaucracy, and the Importance of Discretion. *Public Management Review*, 16(4), pp. 527–547. <https://doi.org/10.1080/14719037.2013.841978>
40. Vapa Tankosić, J. (2023). Agri-environmental Climate Measures in the Serbian Agricultural Policy in Relation to the Common Agricultural Policy. *Journal of Agronomy, Technology and Engineering Management (JATEM)*, 6(6), pp. 958–964. <https://doi.org/10.55817/HBNT7451>
41. Vapa Tankosić, J., Puvača, N., Giannenas, I., Tufarelli, V., & Ignjatijević, S. (2022). Food Safety Policy in the European Union. *Journal of Agronomy, Technology and Engineering Management (JATEM)*, 5(2), pp. 712–717. <https://doi.org/10.55817/EMRK6646>
42. Vidovic, N., & Vidovic, S. (2020). Antimicrobial Resistance and Food Animals: Influence of Livestock Environment on the Emergence and Dissemination of Antimicrobial Resistance. *Antibiotics*, 9(2). <https://doi.org/10.3390/antibiotics9020052>
43. Wegrich, W., & Kai, J. (2007). Theories of the Policy Cycle. In: *Handbook of Public Policy Analysis*. (pp. 43–62). The United Kingdom: Routledge
44. Zbiral, R., Princen, S., & Smekal, H. (2023). Differentiation through flexibility in implementation: Strategic and substantive uses of discretion in EU directives. *European Union Politics*, 24(1), pp. 102–120. <https://doi.org/10.1177/14651165221126072>
45. Duina, F., & Zhou, H. X. (2022). Brussels Under Pressure: Compliance, the Single Market, and National Purpose in the EU. In: *Economies, Institutions and Territories* (pp. 117–134). The United Kingdom: Routledge