

Chapter 13

Disentangling the Cultured Meat Industry: Emerging Trends Through Topic Modeling

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ABSTRACT

As with all emerging industries, cultured meat (CM) can create not only opportunities but also issues that can either support or restrict its full potential. This study aims to explore the latent structure and trends shaping the CM emerging industry development. Using a topic modeling approach on a dataset of 5,519 newspaper articles published from 2010 to 2022, we identified six topics: (1) Environmental sustainability, (2) Healthy food and diet, (3) Research, technology, and market Development, (4) Production process, (5) Consumers' perceptions and acceptance, and (6) Regulatory challenges and governmental oversight. CM is discussed from diverse points of view, such as technology, regulatory issues, sustainability, or consumer attitudes, with shifts in interest and focus over time. This chapter contributes to the literature by mapping the evolving discourse around cultured meat and offers insights for industry leaders and policymakers to navigate this emerging industry.

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INTRODUCTION

Growing global concerns about the environmental and ethical impacts of livestock feeding and management—and the associated consequences such as greenhouse gas emissions and resource needs for land, water, and energy—are driving a need to re-evaluate conventional meat production systems (Post, 2012; FAO, 2021; Jones, 2023; Kudiabor, 2024). With the estimated the world population increase from 9.6 to 12.3 billion by 2100, it is likely that meat consumption will overcome maximum capacity of conventional meat production (FAO, 2021). Given the crucial role of animal protein in the global food supply and its high nutritional value (McNeill et al., 2012), there is an emerging need for innovative and sustainable alternatives of meat that can tackle these challenges without a reduction in consumption.

Emerging technologies, biotechnologies, and alternative proteins hold great potential for food sustainability (Friedman & Ormiston, 2022). Among these, cultured meat (CM) stands out due to its unique molecular and organoleptic, such as taste and texture, similarity to traditional meat. Indeed, CM could potentially become a perfect meat substitute that does not require compromising consumer preferences (Treich, 2021; Kudiabor, 2024). Recent years of significant investments in research and development of CM (Guan et al., 2021) have transformed this biotechnology into a promising emerging industry that meets the demand for sustainable and ethical protein sources by eliminating animal slaughter and reducing greenhouse gas emissions. Moreover, CM creates viable business opportunities (Porter, 1980), fostering the emergence of new industries. As with all emerging industries, CM can create not only advantages but also issues, such as agricultural displacement or economic inequality, among others, that can restrict its full potential (Bonny et al., 2015; Jara et al., 2023).

Understanding the emergence of the industry requires comprehensive analysis of diverse aspects (Marku et al., 2024). Existing management research has explored what drives new industries' emergence, highlighting the importance of scientific and technological advancements, cultural changes, regulatory shifts, or even demand shocks for this process (e.g., Abernathy & Utterback, 1978; Porter, 1980; Agarwal & Bayus, 2002; Agarwal & Tripsas, 2008; Forbes & Kirsch, 2011; Phaal et al., 2011). Moreover, studies have also focused on the phases of industry emergence, additionally exploring challenges and opportunities for organizations, the necessary resources to overcome these challenges, and the defining characteristics of successful firms in these industries (Agarwal & Tripsas, 2008; Forbes & Kirsch, 2011; Phaal et al., 2011; Pontikes & Barnett, 2012). In the context of CM, studies explored CM's production process, consumer concerns, associated benefits and risks, or anticipated challenges in the upcoming years (Reiss et al., 2021; Choudhury et al., 2020). While these studies underscored the importance of CM in addressing issues linked

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