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博士 (環境科学)

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学 位 論 文 題 名/Title of Dissertation

A study on food sustainability through online meal delivery and Japanese home cooking
(オンラインミールデリバリーと日本の家庭料理を通じた食の持続可能性に関する研究)

This dissertation examines how food sustainability is shaped by the interaction between technological innovation and everyday dietary practice. Contemporary food systems have achieved notable efficiency through industrial and digital transformation, yet these same processes have intensified environmental pressure and weakened the social and experiential dimensions of eating. Addressing this tension, the research asks how sustainability can be reinterpreted not only as a policy goal but also as a lived, relational process embedded in daily food practices.

To investigate how technological change and traditional wisdom intersect in sustainable food systems, this dissertation employs two complementary methods. The first study, presented in Chapter 2, conducts a systematic literature review using the Web of Science database to examine research published between 2000 and 2022 that links online meal-delivery services with environmental, social, and economic aspects of sustainability. Using a targeted set of keywords related to food delivery and sustainability, the review identified 128 relevant papers, of which 50 explicitly addressed sustainability impacts. These publications were coded according to their main sustainability dimensions and mapped against the SDG framework. The analysis reveals several key patterns. Environmentally, most research highlights the excessive packaging, food waste generation, and carbon intensity. Socially, studies note both the precarious labor conditions faced by many delivery workers and the growing normalization of nutritionally imbalanced, convenience-oriented meals, which may subtly reshape dietary preferences and health outcomes over time. Economically, while the rise of online meal-delivery services has created new forms of flexible employment and entrepreneurial opportunity, it has also introduced competitive pressures that threaten the viability of small, independent restaurants less able to adapt to platform-based models. The review further identifies significant conceptual blind spots: few studies integrate environmental, social, and nutritional impacts within a unified analytical framework, and longer-term cultural implications—such as the potential erosion of children’s food literacy when home-cooked meals are replaced by deliveries, the ambiguous effects on gender equality in domestic labor, and the uncertain role of gig work in enabling or constraining social mobility—remain underexplored.

The second study, detailed in Chapter 3, applies a dish-level content analysis to 120 recipes featured on NHK Today’s Cooking between 2023 and 2025. Drawing on the program’s official online archive, the analysis

examines how contemporary Japanese home cooking translates long-standing culinary values into present-day media representation. Each recipe was coded across several dimensions, including protein source, seasoning type, cooking method, and nutritional indicators such as salt content. Through this systematic approach, the study identifies recurring patterns that link everyday meal preparation to broader notions of sustainability. Environmentally, the analysis reveals that the dishes featured in the program tend to incorporate diverse protein sources and relatively limited amounts of red meat—ingredients associated with higher environmental footprints—while emphasizing the effective use of seasonally available produce. Such patterns suggest an implicit model of resource-conscious eating grounded in everyday practice rather than explicit instruction. Culturally, frequent reliance on fermented seasonings such as miso, soy sauce, and mirin illustrates the continuity of traditional Japanese flavor principles that encourage balance and restraint, while diverse cooking techniques—from pickling and simmering to light stir-frying—reflect an emphasis on simplicity and waste minimization. Nutritionally, most dishes align with national dietary guidelines for salt intake, reinforcing the pedagogical role of the program in shaping public awareness of healthy and sustainable eating. These findings indicate that this program serves not merely as a recipe archive but as a cultural interface where traditional culinary sensibilities are reinterpreted through modern media. In this way, the program demonstrates how home cooking can function as a site of cultural adaptation and environmental awareness, embodying sustainability not as a fixed standard but as a living, continually negotiated practice.

Together, these approaches connect global analyses of digital food systems with insights from domestic culinary culture, showing that food sustainability is not a fixed condition but an ongoing negotiation between structure and practice. While digital infrastructures enable instantaneous food access, they can also weaken the experiential and mindful dimensions of eating. Achieving sustainable transformation therefore requires aligning technological innovation with the cultural knowledge and habits that have long supported responsible food use. In this light, the study views sustainability as a living process that depends on how societies balance technological efficiency with cultural awareness and care in everyday food life.