

# **SUSTAINABLE INNOVATION AND TECHNOLOGY MANAGEMENT IN SERVICE COMPANIES. AN EXPLORATORY STUDY OF HAIRDRESSING BUSINESSES IN GERMANY.**

Daniela Ludin<sup>1</sup> [0000-0002-3854-5060], Robin Pflieger<sup>1</sup> [0009-0008-7102-9720],  
Erika Mueller<sup>1</sup> [0000-0002-6485-7754], Wanja Wellbrock<sup>1</sup> [0000-0002-4882-029X]

## **Abstract**

*In an increasingly globally connected and digitalized world, companies are faced with a variety of complex problems that require them to rethink their business models and processes. Sustainable innovation and technology management is playing an increasingly important role, particularly in the service sector. This is not just about introducing new ideas and technologies, but above all about those that are environmentally friendly and socially friendly in the long term. Sustainable entrepreneurship plays a crucial role here by producing sustainable products and services through imaginative innovations. This study examines the meaning and implementation of sustainability in connection with innovations in service companies. The overall goal of the study is to analyze the current status, existing challenges, barriers and potential opportunities of sustainable innovation in service companies. In this context, the interaction between sustainability and innovation within these companies is examined. On the one hand, it examines which motives and motivations contribute to the development and implementation of sustainable innovations. On the other hand, the existing challenges and barriers are also highlighted. This enables a deeper understanding of the hurdles that stand in the way of successful implementation of sustainable innovations. The empirical data in this study were obtained using a written, partially standardized online survey among hairdressing businesses. The results of the study show that the topic of sustainability plays an important role for the hairdressing businesses surveyed. Above all, the interest in product, process and environmental innovations is emphasized.*

**Key words:** sustainable innovation, technology management, service companies, hairdresser.

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<sup>1</sup> Heilbronn University, Germany, [daniela.ludin@hs-heilbronn.de](mailto:daniela.ludin@hs-heilbronn.de)

## 1. Introduction

This study examines the significance and implementation of sustainability in connection with innovations in service companies. The overall aim of the study is to analyse the current status, existing challenges, barriers, and potential opportunities for sustainable innovation in service companies. On the one hand, the study investigates which motives and motivations contribute to the development and implementation of sustainable innovations. On the other hand, it also highlights the existing challenges and barriers. On the one hand, the study investigates which motives and motivations contribute to the development and implementation of sustainable innovations. On the other hand, it also highlights the existing challenges and barriers.

## 2. Literature Review

### 2.1. Focus and Method of the Literature Review

A comprehensive overview of the current state of research is provided (Snyder 2019), conducted on sustainable innovation and technology management to position the study within existing research. The literature review primarily examined publications from the past six years (2018-2023) that contained the keywords “sustainable innovation,” “technology management,” “service companies,” and “hair salons” (Eco 2015). In addition to relevance, the citability of the sources was also considered. As a result, only publications from journals using a double-blind review process were included.

### 2.2. Sustainable Innovation and Technology Management in Hairdressing Businesses

Innovation and innovative activities play a key role in a company's success. Innovations can occur in different forms, depending on the organisations, areas, and processes they influence. The four most common types are product, process, marketing, and organizational innovations, with product and process innovations often regarded as the most dominant. Additionally, environmental, social, technological, business model, and service innovations are also distinguished (Turulja, Bajgoric 2018). Social innovations are changes designed to solve social problems and meet societal needs. They focus on changes in social practices, which in turn lead to broader changes in socio-technical systems. This means that social innovations not only target technological solutions but also consider non-technological aspects, such as societal norms, organizational structures, or models of cooperation (Edwards-Schachter 2018; Avelino et al. 2019). Innovation barriers hinder companies from adopting new initiatives or successfully developing innovations. Four main types of innovation barriers can be identified: financial, knowledge-based, market-related, and regulatory barriers (Valdés et al. 2021). In recent years, the concept of sustainability-oriented innovation has gained relevance. It provides a clear direction towards sustainability and encourages companies to

develop innovations that align economic, ecological, and social goals (Urbinati, Esfandabadi, Petruzzelli 2023). Given the unique characteristics of services, the existing literature argues that the IHIP attributes (intangibility, heterogeneity, inseparability, and perishability) are the fundamental features that distinguish services from products (Mishra, Anning-Dorson 2022; Wirtz, Holmqvist, Fritze 2020). The increasingly intense competition in service markets makes it more difficult for companies to attract and retain customers in the long term. As a result, there is a growing need to intensify customer loyalty measures (Vilkaite-Vaitone, Papsiene 2022). Continuous improvements in service delivery and the introduction of innovations are essential to achieving customer satisfaction (Mishra, Anning-Dorson 2022). In many service companies, the internal organization is poorly structured due to the small number of employees, which makes it difficult to access resources and knowledge to support innovation. Consequently, the opportunities to introduce innovations and implement necessary technology management processes are limited. Worldwide the hairdressing sector is represented by more than 3.5 million salons and the hairdressing sector mainly consists of SMEs. Annual numbers of visits in hair salons amount to over 800 million, resulting in six billion visits to hair salons, which demonstrates the market potential of this sector (López-Jáuregui, Martos-Partal and Labega 2019). It exists a total of around 80.000 hair salons throughout Germany. With less than 10 employees and a turnover of less than 2 million euros per year, hairdressing salons in Germany are also classified as micro-enterprises or small enterprises, depending on the number of employees and turnover. There is an average of around 1.6 employees per salon who are subject to social security contribution (Statista, 2020). Adams (2022) analyzed how hairdresser businesses can secure long-term success, highlighting the importance of marketing, cash management, and a solid business plan (Adams, 2022).

### 2.3. Research Gap and Research Questions

While some service sectors, such as hospitality (Han, 2021; Kim et al., 2017; Prud'homme and Raymond, 2013) and healthcare (Barrett et al., 2011; Reid et al., 2008; Corbin et al., 2021), have been thoroughly studied regarding innovation, hairdresser businesses have received limited attention.

Based on this, the following research questions (RQ1-RQ6) aim to address the research gap:

- RQ1: What is the significance of different types of innovation in hairdresser businesses?
- RQ2: What sustainability aspects are prioritised in hairdresser business innovations?
- RQ3: What sustainable initiatives and innovations have already been implemented in hair-dresser businesses?
- RQ4: What challenges and barriers do hairdresser businesses face in implementing sustainable innovations?
- RQ5: Do hairdresser businesses plan to drive sustainability and innovation further in the future?

RQ6: What measures are necessary to support hairdresser businesses in implementing sustainable innovations?

### 3. Material and Methods

A quantitative highly structured explorative survey was conducted in to answer the six research questions (RQ1, RQ2, RQ3, RQ4, RQ5 and RQ6) (Möhring, Schlütz 2013). The survey was conducted via an online questionnaire (created with [www.surveo.com](http://www.surveo.com)) (Wagner-Schelewski and Hering 2022). The data was collected in from 17th July to 31st July 2023. The survey link was sent by email to 250 randomly selected hairdresser businesses. A total of 43 hairdresser businesses completed the survey, resulting in a response rate of 17.2%.

### 4. Results and Conclusions

The results of the investigation indicate an interest in product, process, and environmental innovations (RQ1). In addition to economic aspects such as cost reduction, personal beliefs and a sense of social responsibility play a significant role of motivations that drive salons to pursue sustainable innovations (RQ2). Challenges and barriers exist, particularly concerning costs and a lack of resources, such as personnel and time, for the development and implementation of sustainable innovations (RQ4). Funding and grants, along with sufficient resources, are seen as supportive measures to counteract these obstacles (RQ6). Hairdresser businesses particularly recognize promising potentials for sustainable innovations in the areas of recycling and products. It becomes clear that the overwhelming majority of surveyed salons intend to enhance their focus on sustainability and innovation in their operations moving forward (RQ3 & RQ5). Given the *limited sample size* of this study, it would be advisable for future investigations to aim for a broader data foundation. Different sectors within the service industry should also be considered to better understand the peculiarities and challenges in various contexts. *Future research* could increasingly focus on the potentials of recycling, particularly concerning water treatment and wastewater reuse, as well as sustainable products. A more detailed investigation of these areas could not only provide insights into potential innovations but also highlight approaches for effectively utilizing these potentials. From a *practical perspective* an intensified focus on the development and implementation of sustainable innovations in hairdresser businesses requires increased support in financial aspects and personnel resources. Additionally, improved knowledge transfer through training and informational offerings is necessary to empower businesses in their sustainability efforts (RQ6).

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