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Repairing the upbringing: Socialization and product repair behavior

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Abstract: With growing concerns over sustainability and waste generation both globally and in Denmark, understanding consumer behavior in product repair is crucial. This study investigates in-house product repair behavior in Danish households, focusing on the motivations, and barriers of repairs related to social upbringing. Data was collected as a mixed-methods approach, using 9 qualitative semi-structured interviews as primary data based on secondary picture data collection of self-repaired products from 30 Danes. The study confirms prior studies that show: lack of emotional value, economic feasibility, tools and knowledge as barriers for consumer repairs. Moreover, it contributes by adding multi-socialization during upbringing and types of knowledge, particularly informal repair knowledge from family members, as a crucial determinant in shaping repair behavior specifically related to the knowledge barrier and motivation. This research sheds light on the nuances of Danish household repair behavior, suggesting the integration of repair education in schools and the utilization of repair cafés to foster a sustainable repair culture.

Introduction

Every year the world throws out over two billion tons of household waste globally (The World Counts, 2023). Denmark is one of the countries, that consumes the most per capita, and if every country in the world consumed the same, it would require four times as many resources as the Earth currently provides (Faartoft, 2023). To ensure more sustainable consumption and production patterns, one of the goals of the 12th Sustainable Development Goals (SDG) is to substantially reduce waste generation through prevention, reduction, recycling, and reuse (The Global Goals, n.d.). Prevention, such as repairing, is one of the key strategies to prolong the lifespan of products by reducing the environmental impact of consumer goods thus counteracting the use-and-throw-away culture (Hernandez, 2020; Laitala, 2020).

Most Danes associate repairs with sustainability. Nevertheless, every second Dane has chosen not to repair something they considered, where 60% of the respondents would like to repair more if it was cheaper, and 49.5% would choose to repair more if they could do it themselves (Make It Good Again, 2020). Scholars find, the most significant repair barriers are lack of economic incentives, knowledge, missing spare parts, emotional and economic attachment or no need for the specific product etc. (Hernandez, 2020; Make It Good Again, 2020). A recurring repair barrier or motivation in most of the current studies is the lack or presence of knowledge (Hernandez, 2020; Laitala, 2020; Nielsen, 2023; Make It Good Again, 2020; Ackermann, 2018a). This repair knowledge is crucial in determining whether consumers even attempt to repair or not. However, there are very limited research on where consumers' repair knowledge stems from and how it can be positively influenced. An area in which knowledge is affected is through socialization which is closely related to one's upbringing (Dencik, 1995; Pérez, 2008; Brøndum, 2020). Therefore, the paper investigates this gap with the following question: How do knowledge barriers and motivations, related to social upbringing, influence repairs at home?

Literature review and theory

Product repair has various definitions, with Ackermann combining maintenance and repair, under the umbrella term "product care" (Ackermann, 2018b). Denis and Pontille argues for understanding repair as a part of an ongoing maintenance process, not just as a reaction to breakdowns (Denis, 2023). In this paper, the overall definition of product repair is; Product functionality is restored to working condition or

partially working condition, product refurbishment, and maintenance of products. In relation to repair behavior, various motivational factors and barriers influence people's repair behavior, impacting the success of home repairs. A study from the Netherlands explores consumers' motivation, ability, and triggers related to product care. They found that the consumers are generally motivated to do product care due to the importance of the product's functionality or it being more sustainable consumption-wise. While they often possess the necessary knowledge and tools, they often lack the triggers to prompt action. Triggers such as giving necessary tools or offering a helpful service can increase consumers' motivation or ability. (Ackermann, 2018a)

Another paper categorizes barriers discouraging consumers from repairing products by reviewing academic articles across various fields, including perspectives from consumer, design, production, and sustainability studies (Hernandez, 2020). The five identified barriers are: 1) Lack of knowledge, 2) Lack of spare parts, information, and open contracts, 3) Lack of economic incentives, 4) Lack of emotional and economic attachment, 5) Lack of design for repair. These barriers are substantiated by a Norwegian study. It found that better product quality is the primary incentive for repairs, alongside improved consumer rights, access to spare parts, tools, manuals, and greater knowledge of repair processes (Laitala, 2020). A survey of 2000 Danish respondents, revealed that price is the main reason for not repairing, followed by a lack of knowledge about repair services (Make It Good Again, 2020). This supports the barrier: 'Lack of economic incentives', and 'Lack of knowledge'. Thus, the barrier 'lack of knowledge' recurs in most studies, emphasizing that knowledge is crucial for whether consumers even attempt to repair or not.

Knowledge can be divided into three types: **1) Formal learning** situations, where knowledge is the goal, it is organized and has formal credits e.g. when learning professional skills in educational programs. **2) Informal learning** situations, where knowledge is not the direct purpose but a byproduct of activities with another goal e.g. participating in everyday life with the family. **3) Non-formal learning** situations, where knowledge is the goal, it is organized but without formal credits e.g. actively searching for information through the internet. (Ainsworth, 2010). However, there are very limited research on where consumers' repair knowledge stems from and how it can be positively influenced. An area in which knowledge is affected is through socialization which is closely related to one's upbringing. Specifically informal learning takes place all the time spontaneously throughout life guided by family and other caregivers (Ainsworth, 2010).

This gap can be analyzed using Lars Dencik's 'dual socialization' theory and Pierre Bourdieu's 'theory of practice' to understand how upbringing can influence repair behavior. The Swedish social psychologist Lars Dencik developed the butterfly model of dual socialization to describe how a child's behavior is shaped in post-modern society through primary and secondary socialization (Dencik, 1995). Brøndum later expanded this model to the multi-socialization model (Figure 1), adding a third arena called tertiary socialization (Brøndum, 2020).

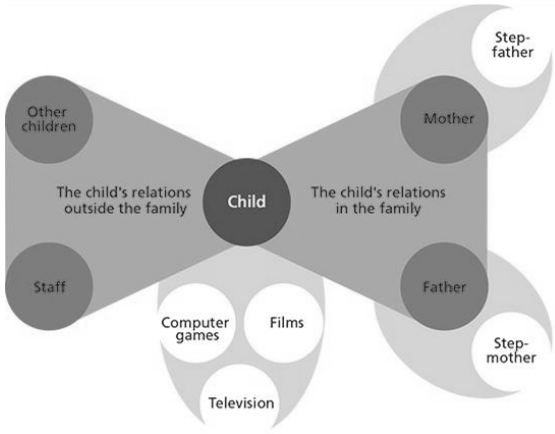

Figure 1. Multi-socialization model. (Brøndum, 2020, building on Dencik, 1995).

Brøndum defined: **1) Primary socialization** as the socialization that takes place at home with the family, e.g. through the upbringing of one's parents and grandparents**. 2) Secondary socialization** as the socialization that takes place in institutions, e.g. through school and one's friends. **3) Tertiary socialization** as the socialization that takes place over medias, e.g. through YouTube, Television and Instagram. Similarly French sociologist Pierre Bourdieu argues that identity is shaped by relationships, particularly in early life. He introduces the concept of habitus, which is the values, norms, and cultural habits that guide individuals. These 'learned codes' form identity and behavior,

leading individuals to maintain consistent patterns of action and perceptions of why they should or should not act in certain situations (Pérez, 2008). These socialization theories and types of knowledge will be applied to analyze and better understand Danish repair behavior related to knowledge.

Methodology

A mixed-methods study was conducted, with the goal of gaining insights into the product repair behavior in Danish households to understand why Dane's repair or do not repair products at home. This includes quantitative and qualitative data collection.

Firstly, an explorative approach was used to narrow down the scope of the paper by gathering pictures and small descriptions of home-repaired products from 30 Danes in ages between 24 and 85 both men and women. Three descriptions of home-repaired products were formulated and sent in the native language: 1) Picture(s) of a product, you have repaired yourself at home, 2) Picture(s) of a product, you have considered to repair yourself, but for some reason did not, 3) Picture(s) of a product, you have tried to repair yourself but failed to.

The pictures were then categorized using the method clustering to find patterns, which the following interviews were based on. The clustering gave insights into: 1) Which products, Danish households repair and do not repair, 2) Which products the different genders repair, 3) Which products Danes repair and do not repair in relation to how established the participants are.

To gain further insights into why the repairs failed or succeeded related to barriers and motivations, 9 qualitative semi-structured interviews were conducted with a total of 11 interviewees. The interviews were based on Danes with an equal distribution of different ages, genders, jobs, occupations, and housing conditions to get the most nuanced outcomes. They were selected based on having sent pictures from all three picture descriptions. The qualitative data focus on Danes between the age of 24 to 65, that where either living in apartments or being homeowners. The insights and quotes from the semi-structured interviews were clustered to find behavior and decision-making patterns. Surprisingly it revealed that upbringing, particularly parental influence, emerges as a crucial determinant in shaping repair behaviors specifically related to the knowledge barrier and motivation. This gap became the scope of the paper and was then analyzed using the multi-socialization model and the three types of knowledge. Quotes regarding knowledge barriers and motivations were divided into, which of the three social arenas, they stem from, and what type of knowledge it is, resulting in three themes.

Lastly, the repair knowledge barrier and motivation regarding upbringing was discussed, and suggestions were made on how to increase repairs performed in Danish homes followed by a conclusion with future research propositions.

Analysis

This study investigates how socialization during upbringing affects the repair behavior related to the knowledge barrier and motivation. The analysis shows that the consumers are exposed to informal, formal and non-formal repair knowledge (Ainsworth, 2010) depending on the social arena (Brøndum, 2020, building on Dencik, 1995), which constitutes the following three themes. The data suggest a connection between the repair success or failure and social upbringing, which shapes the individuals repair behavior throughout life. It highlights a hierarchical division, where informal repair knowledge is the foundation for acquiring both formal and non-formal repair knowledge in the secondary and tertiary arena respectively (Figure 2).

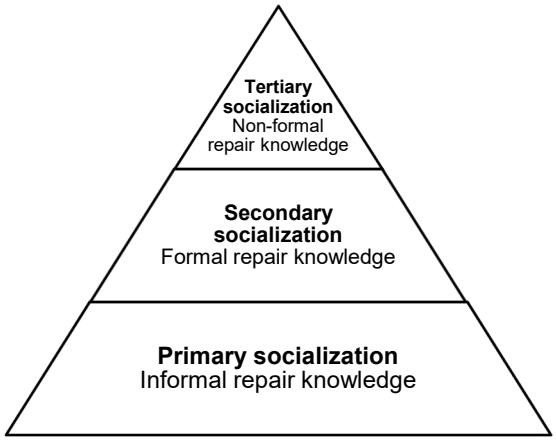

Figure 2. Hierarchy of types of repair knowledge

Informal repair knowledge from primary socialization

In the primary socialization (Dencik, 1995) the consumer is introduced to informal repair knowledge (Ainsworth, 2010), where norms and values from the family (Pérez, 2008) becomes the foundation for whether consumers choose to repair or not. This is substantiated by 11 out of 11 interviewees mentioning that their repair knowledge stems from their upbringing either from a parent or relative. The data further suggests that consumers primarily learn that repair is acceptable rather than embarrassing, when seeing or taking part in repairing products with members of the family. Here the goal is not to learn repair, but a byproduct of doing something together, thus obtaining informal repair knowledge (Ainsworth, 2010): "*It is fun! […] I learned how to repair from my dad […] I helped him […] I watched my father-in-law (repair products) […]* (Interview 3, 10:46). Thus, the informal repair knowledge plays a crucial role in creating a positive repair culture, which is essential for the desire to repair products throughout life.

Additionally, the consumers' fondness for specific product categories, thus interest in repairing these, stems from the primary socialization: *"I learned some basic stuff about sewing from my parents, which sparked my interest (in clothes)"* (Interview 5, 10:4-14:49). The data suggest that the consumers primarily learn very specific and simple repairs as a byproduct of the informal repair knowledge, such as changing a tire on a bike or patch holes in a sweater, and basic tools, such as using a screwdriver or a needle, from their parents or grandparents.

However, the parents or grandparents need to know how to repair, before they can teach their kids this informal repair knowledge at home, which is a barrier: *"[…] (repair knowledge originated from) my education as a carpenter […] my parents did not teach me anything about tools or how to repair"* (Interview 2, 19:24).

Formal repair knowledge from secondary socialization

Repair behavior can also be significantly influenced by secondary socialization (Dencik, 1995) e.g. through educational institutions or related to a job, as noted by 2 out of 11 interviewees. It differs from the learning situation in the primary socialization, by adding formal repair knowledge, thus extending one's basic repair knowledge with more expertise within a professional field. Consumers improve their skills by learning which special tools to use, the correct terms, how to use them correctly, different repair methods etc.: *"[…] I have improved my (sewing) skills most through my education (Fashion Design)"* (Interview 5, 10:4-14:49).

Surprisingly, no interviewees mentioned learning about repair during their earlier education, such as primary and secondary school. Here norms and values can be shaped just as much as in the primary socialization at home, especially in early childhood (Dencik, 1995; Pérez, 2008). Thus, introducing formal repair knowledge in the early education could minimize the knowledge barrier, that some consumers face in the primary socialization, due to the parents' lack of repair knowledge.

This formal repair knowledge from secondary socialization adds a level of expertise to the informal repair knowledge, which can be translated directly into a higher level of repair skills, thus decreasing barriers and increasing chances of successful repairs.

Non-formal repair knowledge from tertiary socialization

In the tertiary socialization (Brøndum, 2020) medias, such as YouTube, act as a tool in the repair moment to expand the consumers existing repair knowledge from the primary and secondary socialization. The learning situation is characterized by the consumer having an on demand need to fix a broken product, thus gain a very specific non-formal repair knowledge (Ainsworth, 2010). This is substantiated by 8 out of 11 interviewees stating that: *"If I can't figure it out myself […] I will find it via the internet or YouTube."* (Interview 8, 09:04).

YouTube videos provide guidance on the repair process, thus are great at communicating how to e.g. locate the problem regarding broken product, how to fix the product, which tools to use etc.

This non-formal repair knowledge is easily accessible only if the consumer has a desire to fix the product and some basic knowledge to search for the right terms, which is a barrier.

Discussion and implications

Based on the results of the interview analysis a few interesting topics can be discussed further. Interestingly all interviewees mentioned that the repair interest and the foundation of the repair knowledge were established by either parents, grandparents, friends, or educational influences during their upbringing. While it seems obvious that social upbringing impacts consumer product repairs, research in this area is very limited. The analysis suggests that especially dual-socialization (Dencik, 1995) and habitus (Pérez, 2008) influence repair behavior.

The concept of habitus suggests that the norms and values learned early in life are challenging to change later, emphasizing the need for early integration of repair education (Pérez, 2008).

Primary socialization has the most significant impact, beginning in childhood when bonds with family form (Dencik, 1995). This is where the results show that informal repair knowledge (Ainsworth, 2010) is passed down, highlighting the importance of parental influence. While primary socialization is beneficial, secondary socialization also plays a vital role, especially in modern society where children spend more time in schools and institutions. This double socialization by teachers, pedagogues, and mentors significantly shapes children's behavior (Dencik, 1995), both socially and repair wise.

Although product repair is essential for sustainability, not all parents have the time, knowledge or resources to teach their children these skills. This is where an educational program of product repair in primary and secondary school could be a solution to this problem by introducing formal repair knowledge (Ainsworth, 2010). Especially since very few interviewees obtained or extended their repair knowledge during their education. Thus, there is room for improvement here and a potential for increasing children's repair knowledge. Incorporating repair education into either the subject Technology Understanding or creative courses like Craftsmanship and Design could empower students with the knowledge and confidence to undertake repairs later in life. In addition, excursions to repair cafés could help students learn practical skills and become comfortable with tools and the repair process, potentially reducing repair barriers in the future.

Lastly, home repair habits can also be influenced by the medias, which is the tertiary socialization (Brøndum, 2020). However, this form of influence often requires individuals to seek out content themselves, which can be a barrier. Additionally, this socialization might come too late into people's lives to have a substantial impact. Instead, it could, as data shows, serve as an additional tool, where consumers gain non-formal repair knowledge (Ainsworth, 2010), to build on one's knowledge from the primary and secondary socialization.

In conclusion, while primary socialization and informal repair knowledge might have the biggest impact on repair behavior, it might be unrealistic to expect all parents in Denmark to educate their children, due to their own limited repair knowledge. Therefore, secondary socialization through institutions could be a viable way to educate future consumers with both informal and formal repair knowledge, thus a higher level of repair skills. Future research could explore the influence of primary, secondary, and tertiary socialization in further detail by incorporating larger in-depth quantitative and qualitative studies to gain a better understanding of the socialization aspect of the topic. This could be a foundation for future implementations of educational programs on repairability and the potential of repair cafés as community resources to enhance repair skills and reduce barriers to product repair thereby making Denmark more sustainable.

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