

# Packaging journey from retail to home: how the meaning of sustainability for colour transforms

Packaging  
journey from  
retail to home

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## Abstract

**Purpose** – Research has largely disregarded consumer–packaging interaction in contexts other than retail. Focusing on the powerful cue of colour and consumers' pleas for sustainability and drawing on the customer journey and moments of consumption, this study investigates how packaging colour meanings are redefined from retail to home and how the meaning of sustainability for colour transforms.

**Design/methodology/approach** – A qualitative methodology was employed with 27 informants, who were interviewed in pairs or in small groups of three.

**Findings** – First, colour meanings emerge outside the retail context, confirming the idea of the packaging journey. Colours are dynamic, as meanings are redefined throughout the voyage. In retail, colour conveys brand, product, environmental and origin-related meanings, while at home it conveys product, food- and health-related meanings. At the end of the journey, colour communicates disposal, environmental, health and origin-related meanings. Second, the meaning of sustainability for colour transforms during the voyage from being conveyed by a colour hue to being perceived as a material and, therefore, as a waste and recycling concern.

**Originality/value** – The study adds insight into the role of colour in the packaging life cycle, wherein colour transforms from a visual packaging cue to an issue of materiality. The recyclability of colours is a prevailing sustainability issue that deserves attention within the packaging industry. The study argues that although the consumer–packaging interaction in the retail context is essential, managers should recognise that the interaction continues with colours from in-store purchase decisions to consumers' homes (use and recycling).

**Keywords** Colour, Colour meanings, Environmental meaning, Packaging, Packaging journey, Sustainability

**Paper type** Research paper

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## 1. Introduction

Packaging continues to be a crucial product aspect for multiple reasons, not the least of which is that most products are sold in packaging, ranging from bottles and cans to wrappers and boxes. Consequently, consumers are exposed to packaging and interact with it in the retail setting, where packaged products are considered and purchased (e.g. [Konstantoglou et al., 2020](#)), and in their daily living environments, where packaged products are stored and used and packaging is disposed of.

The core of the current study is the consumer–packaging interaction. Numerous studies show how this interaction is embedded in consumers’ in-store experiences, where consumers respond to packaging by making inferences about the brand and product (e.g. [Wang, 2013](#); [Álvarez-González et al., 2023](#)). Therefore, imagery or the formation of mental images or meanings are utilised strategically in brand packaging to promote the brand and influence consumer responses ([Martínez et al., 2021](#); [Wang, 2013](#)). Interestingly, consumer-related packaging research has studied packaging in isolation, that is, within the retail setting, without taking the home environment into account ([Ryynänen and Rusko, 2015](#)). Therefore, past studies provide little guidance on the consumer–packaging interaction outside the retail context. Yet, undoubtedly, as consumers move from one setting to another in accordance with the customer journey ([Zomerdijs and Voss, 2010](#)), so, too, does the packaging.

The current study concentrates on packaging colour and sustainability. On the one hand, the study focusses on colour, which is an inevitable graphic component of packaging design – all packages are composed of at least one colour. Essentially, research stresses that colour is one of the most powerful sensory cues in packaging, reaching consumers on a deeper level than a first impression and therefore contributing to the consumer–packaging interaction (e.g. [Kauppinen-Räsänen, 2014](#)). Past research largely agrees that packaging colour, as an extrinsic and visual cue, conveys both brand and product and affects consumers’ in-store behaviour ([Álvarez-González et al., 2023](#); [Bezaz and Kacha, 2021](#); [Kauppinen-Räsänen and Jauffret, 2018](#); [Lee et al., 2014](#); [Martínez et al., 2021](#)).

On the other hand, the study focusses on sustainability and on the prevailing concern for environmental issues ([van Giesen and Leenheer, 2019](#); [De Canio et al., 2021](#)), particularly how these issues are inferred from packaging colour. The current drive to embrace the environment and sustainability across all industries has not overlooked the packaging industry ([van Giesen and Leenheer, 2019](#); [De Canio et al., 2021](#)). Hence, recent package design and development efforts have reportedly been innovative and increasingly more sustainable and “smarter” in an attempt to reduce the negative environmental impact of packaging. In doing so, the packaging industry answers consumer pleas to incorporate environmental friendliness and sustainability into the packaging production process, the packaging design and material and, finally, packaging disposal and reuse – in other words, the packaging life cycle ([De Canio et al., 2021](#); [Ketelsen et al., 2020](#); [Ritch, 2015](#); [Wikström et al., 2018](#)).

While sustainability is commonly associated with packaging material, it is also conveyed by packaging colour. Research stresses that green is commonly associated with nature, environmental friendliness and sustainability ([Lindh et al., 2016a](#); [Magnier and Schoormans, 2017](#); [Pancer et al., 2017](#); [Larranaga and Valor, 2022](#)). Additionally, a recent study that focussed on milk packaged in brown-coloured cardboard cartons revealed that sustainability was conveyed by both packaging material and colour ([Liem et al., 2022](#)), yet the material and colour were not correlated. Hence, the conclusion was that consumers’ perceptions of sustainability relate mostly to whether they believe that the packaging material is recyclable and/or reusable. Interestingly, colour was not perceived to have a function at the end of the packaging life cycle.

Against this background, the current study elaborates on the consumer–packaging interaction, based on the assumption that the interaction continues as the packaging moves from retail stores to consumers’ homes and even beyond. Relatedly, the study draws on the ideas of customer journey ([Lemon and Verhoef, 2016](#); [Shavitt and Barnes, 2020](#);

Towers and Towers, 2021; Zomerdijs and Voss, 2010) and moments of consumption (Evans, 2019). It is thought that consumers likely infer different meanings from colour along the customer journey, as cues like colour impact responses in context (Kauppinen-Räsänen *et al.*, 2020). Hence, with the selected focus, the study responds to the call for more research on the consumer–packaging interaction outside the retail context (Ryynänen and Rusko, 2015).

The study has two primary aims: (1) to examine how packaging colour meanings are redefined along the packaging voyage and (2) to explore how the meaning of sustainability emerges during the voyage.

To meet these objectives, we designed a qualitative study with semi-structured interviews. The study offers multiple theoretical contributions. First, by introducing the concept of the packaging journey, the study enriches the growing body of marketing research investigating packaging and packaging colour, especially in relation to branding (e.g. Kauppinen-Räsänen *et al.*, 2020) and retail behaviour (e.g. Martinez *et al.*, 2021). The study demonstrates how colour is by nature dynamic, as meanings appear both in the retail setting and in the home environment, and how the meanings are redefined throughout the voyage. Second, the study advances the emerging field of marketing driving sustainable production and consumption (e.g. Sheth and Parvatiyar, 2021), as the findings uncover how the meaning of sustainability for colour emerges but also transforms during the voyage. Further, the study contributes to a better understanding of how colours can be used to impact and direct sustainable behaviour across various contexts, such as in retail and at home. Essentially, colour is a visual cue, but the study also shows how it becomes perceived as a material and, as a result, a waste and recycling concern. With these contributions, the study has implications for managerial decision-making.

## 2. Review of the related literature and theoretical framework

### 2.1 Consumer–packaging interactions along the customer journey

Typically, packaging is approached as an effective tool and is considered a brand-owned touchpoint that interacts with the consumer – in retail stores – at the point of purchase (e.g. Kauppinen-Räsänen *et al.*, 2020). This assertion is supported by studies acknowledging that packaging is a brand medium, a brand's in-store touchpoint and the “voice” of the product and brand in the retail store (Husić-Mehmedović *et al.*, 2017; Syrjälä *et al.*, 2020). Further, research has highlighted the ways that packaging influences behaviour, as 70% of consumer brand decisions are made at the point of purchase, and 90% of those point-of-purchase decisions are based on a visual examination of the packaging (Clement, 2007; Inman *et al.*, 2009). Research has shown how extrinsic cues (e.g. brand name, price and country of origin) convey meanings about the brand and product associated with cognitive components of decision-making (Krishna *et al.*, 2017; Syrjälä *et al.*, 2020). Studies have further demonstrated the ways sensory targeted packaging components, such as visual cues (e.g. pictures, material, typography and colour), may trigger consumer senses (e.g. sight), evoke imagery and convey meanings. Hence, they can influence affective or emotional responses during in-store decision-making (Krishna *et al.*, 2017; Favier *et al.*, 2019; van Esch *et al.*, 2019). Additionally, past research provides insights into consumer–packaging interactions in the retail context and explains how and why packaging influences consumers in stores, where it is best utilised as a strategic tool to promote desired consumer responses and outcomes (Martinez *et al.*, 2021; Silayoi and Speece, 2007).

To elaborate further on the consumer–packaging interaction, the current study relies on the *customer journey* literature, which shows how consumers move from one setting to another (Zomerdijs and Voss, 2010). Such studies take a business approach to characterise the journey of delivering an offering comprising a series of touch points and various delivery-related activities and events (Pantouvakis and Gerou, 2022; Towers and Towers, 2021; Zomerdijs and Voss, 2010), framing the journey as a process divided into the pre-purchase, purchase and

post-purchase stages (Lemon and Verhoef, 2016; Shavitt and Barnes, 2020). In accordance with the customer journey, the consumer-packaging interaction is a voyage that extends beyond the purchase. Before the purchase – while the product is still on the shelf – its packaging attracts attention and speaks for both the brand and the product. Along the journey, packaging enables product transportation and then, once the product is at home and in use, it becomes a container for storage (Lindh *et al.*, 2016b). To elaborate further on the idea of the packaging journey, the current study draws on *consumption studies*, which recognise that product consumption involves a series of moments, such as the acquisition or purchase of the product but also its use and disposal (Evans, 2019). Accordingly, the packaging journey also includes moments of consumption that relate to issues of packaging reduction, reuse and recycling and issues related to consumers' concerns about the negative environmental impact of packaging (Magnier and Crié, 2015; Pålsson and Sandberg, 2020). Overall, more research is needed on the phases of this journey (Pantouvakis and Gerou, 2022; Ryyänen and Rusko, 2015).

Accordingly, in this study we characterised the packaging journey as a consumer-packaging interaction and conceptualised it as a consumer voyage accompanied by packaging over time across multiple consumption moments.

## 2.2 Packaging colour meanings: from attraction to environmental friendliness

Research not only on packaging but also packaging colour has focussed on its impact on consumers in the retail context (Lee *et al.*, 2014; Martinez *et al.*, 2021). For example, the essence of colour was stressed by Singh (2006), who argued that 62–90% of consumer purchasing decisions are based on colour.

Kauppinen-Räsänen (2014) investigated the relevance of colour in brand packaging at the point of purchase and found that the power of colour relates to its capacity to *attract attention* as a physiological reaction. Colour has even been suggested to be the first cue that consumers pay attention to in a product's packaging (Danger, 1987). Packaging colour also serves as an essential *source of attractiveness*. This is an essential finding because attractiveness can affect choice behaviour (Krishna *et al.*, 2017). For instance, research has uncovered a link between attractiveness and sustainability, as eco-friendly packaging was not perceived as appealing in one study due to the lack of colour (e.g. Nguyen *et al.*, 2020). Moreover, packaging colour serves as a *means of communication* because it conveys meanings that are found to influence consumer assessments of brand, product quality, product category and packaging (van Esch *et al.*, 2019; Kauppinen-Räsänen and Jauffret, 2018; Kauppinen-Räsänen and Luomala, 2010; Pantin-Sohier, 2009; Silayoi and Speece, 2007; Won and Westland, 2018). These studies share the conclusion that packaging colour, as an extrinsic and visual cue, conveys meanings affecting in-store behaviour. Packaging colour can even be used to communicate specific meanings to *direct behaviour*, such as encouraging consumers to adopt a healthy diet (Bezaz and Kacha, 2021). Essentially, research stresses that colour impacts responses in context (Kauppinen-Räsänen *et al.*, 2020; Madden *et al.*, 2000). For example, red should generally not be used as a main colour of a brand's packaging or product to convey sustainability, as Magnier and Schoormans (2017) reported that the colour red negatively impacted evaluations of a packaging's environmental friendliness.

As consumers can be directed toward specific behaviour through colours, initiatives have been undertaken to guide consumers toward sustainable choices through packaging design. Green is commonly associated with nature and environmental friendliness (Lindh *et al.*, 2016a; Magnier and Schoormans, 2017; Pancer *et al.*, 2017; Larranaga and Valor, 2022), so green packaging supports an image of sustainable packaging and products (Herbes *et al.*, 2020; Magnier and Schoormans, 2017; Pancer *et al.*, 2017). Other earthy colours, like brown and cream, are also perceived as environmentally friendly. Thus, packaging featuring those colours is also associated with environmental friendliness (Liem *et al.*, 2022; Scott and Vigar-Ellis, 2014).

In sum, consumer-related packaging research has focussed on the meanings that consumers infer from packaging colour mostly within the retail context, leaving uncovered the meanings assigned to packaging colour in other contexts, such as at home. As consumers move from one setting to another in accordance with the customer journey (Zomerdijsk and Voss, 2010), so, too, does the packaging. Likely, colour meanings applied to concepts like sustainability are redefined and transformed along that voyage.

### 3. Data collection and analysis

We designed a qualitative study to investigate the meanings conveyed by packaging along the packaging journey from retail stores to consumers' homes and beyond. Data were gathered through semi-structured interviews with individuals, pairs and small groups (e.g. Wilson *et al.*, 2016). These types of interviews are considered suitable when phenomena are explored in depth (e.g. Johnstone, 2017), as they encourage spontaneous responses and elicit open and detailed data.

We created a thematic guide that outlined the direction of the interviews (Krueger and Casey, 2014). The guide addressed the four primary themes, which were complemented with probing questions to evoke more elaborate responses when necessary. The thematic guide was designed along an array of topics, ranging from the informants' views on their (1) in-store decision-making and (2) practices at home to the role of packaging and packaging colour both (3) in stores and (4) at home. The product categories for packaging were not predefined, and the informants had the opportunity to freely describe their interactions with packaging. Most often, the examples were related to food consumption and food packaging. The interview questions also covered the role of packaging cues, with an emphasis on packaging colour in various contexts, while the probing questions covered, for example, informants' sustainable consumption practices. Colour was addressed in the discussions, which often dealt with the topic in a broader sense, such as a colour's origin and role in consumers' daily lives, while probing questions and questions of "why" allowed for deeper insights into the meanings of colour. Such discussions revealed the role of colour in products and their packaging.

The data collection continued until data and thematic saturation were reached, that is, when no new data or themes emerged (Krueger and Casey, 2014).

#### 3.1 Participants

A purposeful sampling technique was used to recruit the participants, which implies that the selected informants were available and willing to participate in the study and talk about the topic (Spradley, 1979), either individually, in pairs or in small groups of three. Initial informants were recruited through convenience sampling. Subsequently, a snowball technique was used, where interviewed informants were asked to suggest potential additional participants who might want to talk about packaging in their everyday lives. Notably, the interviewees did not identify themselves as "green" consumers *per se*, but they were all are concerned about environmental and sustainability issues and interested in discussing packaging, colours and sustainability.

The individual interviews and the paired interviews (groups 5–8) were conducted via Zoom (video conferencing software) because of the coronavirus disease 2019 (COVID-19) situation in the spring of 2020. The small group interviews (1–4) were done face to face. The interviews lasted between 30 and 80 min and were recorded, and those recordings were transcribed. The informants were Finnish consumers aged 26–73 years with varying income levels, occupational statuses and places of residence (Table 1). This sample enabled the collection of diverse views on packaging in consumers' daily lives. Overall, 27 informants participated. The majority of the participants (20 of 27) were women, which is typical

**Table 1.**  
Sample information

Type of interview	Informant	Gender	Age	Occupation
<i>Paired interviews</i>				
Group 1	I#1	Female	48	Employee
	I#2	Female	57	Employee
	I#3	Male	52	Employee
Group 2	I#4	Female	26	Student
	I#5	Female	35	Employee
	I#6	Female	24	Student
Group 3	I#7	Female	63	Employee
	I#8	Female	30	Employee
	I#9	Female	26	Student
Group 4	I#10	Female	73	Pensioner
	I#11	Female	59	Employee
	I#12	Female	38	Employee
Group 5	I#13	Female	49	Employee
	I#14	Female	43	Employee
Group 6	I#15	Female	49	Employee
	I#16	Male	55	Employee
Group 7	I#17	Female	58	Employee
	I#18	Male	57	Employee
Group 8	I#19	Female	29	Student
	I#20	Female	26	Student
<i>Individual interviews</i>				
Individual 1	I#21	Male	48	Employee
Individual 2	I#22	Female	44	Employee
Individual 3	I#23	Female	47	Employee
Individual 4	I#24	Male	40	Employee
Individual 5	I#25	Female	48	Employee
Individual 6	I#26	Male	40	Employee
Individual 7	I#27	Male	35	Employee

**Source(s):** Table by authors

for qualitative research, as women tend to be more willing to participate in research interviews (see, e.g. [Huttunen and Autio, 2010](#)).

Participation in the interviews was voluntary, and the informants were informed of their right to withdraw at any time without consequences. Before the interviews, the interviewees were informed about the purpose, main themes and overall process of the study. Special attention was paid to ensuring the anonymity of the informants and confidentiality ([Fontana and Frey, 2003](#)).

### 3.2 Data analysis

In this study, we followed a qualitative research approach and conducted a data-driven analysis ([Denzin and Lincoln, 2003](#)). Additionally, we employed researcher triangulation to ensure the quality of the data analysis ([Denzin and Lincoln, 2003](#)).

The analysis proceeded in two phases. In the first phase, concepts and categories were framed ([Miles and Huberman, 1994](#)) to generate an understanding of consumer–packaging interactions, with a focus on packaging colour, while the data analysis was driven by a search for recurrent explanations. We made two major discoveries. First, consumer–packaging interactions occurred in various settings, supporting the idea of a voyage. We defined this voyage as the “packaging journey.” Second, informants’ responses to packaging colour became multifarious along the packaging voyage, indicating that meanings were redefined and developed throughout the journey.



In the second phase, the detected “packaging journey” became a heuristic tool for recognising the functions of and meanings inferred from packaging colour, and colour became the unit of analysis (Onwuegbuzie *et al.*, 2009). We searched for informant responses to packaging colour across various settings. At this stage, an in-store concern about environmental issues became evident, while safety, health and usability issues mattered at home, followed by concerns about disposal and recycling at the end of the packaging journey. This phase of the analysis also illustrated how the meaning of sustainability of colour emerged during the voyage. In sum, the final analysis focussed on how colour meanings transformed along the voyage as consumers acquire, use and dispose of packaging in their daily lives.

#### 4. Results

The findings are reported in the following subsections. We begin by discussing the first leg of the packaging journey – retail – and then we explore packaging colour at home. The concluding section addresses the last phase of the packaging journey: the sorting of waste, the phase when packaging and its colour leave consumers’ homes. Table 2 illustrates the different meanings evoked by packaging colour in various contexts.

##### 4.1 Packaging in the retail store – colour as brand cue and an indicator of a concern for the environment

The packaging journey begins in the retail store when the item – comprising the product, packaging and packaging colour – is evaluated and acquired. All informants explicitly discussed the role of packaging colour as an influential visual cue (e.g. Nguyen *et al.*, 2020; Herbes *et al.*, 2020). For instance, the informants mentioned that packaging colour can attract their attention. In addition, some informants discussed how their decision-making and choices were influenced by their colour preferences and the level of aesthetic enjoyment received:

[...] yes, I want to have something white and some colour, so it makes it, you know, it is attractive.  
[...] brown is somehow, I personally don’t like the colour [...]. (I#2)

Colour was also discussed in the context of conveying various meanings. The informants stressed that *colour communicates the product and its features* (e.g. taste, healthfulness and other qualities) and *the brand* (image). These findings support those of prior studies

Meaning dimensions	Meanings across settings		
	In-store	At home	Away from home
Product- and brand-related meanings	Product related (e.g. product feature like taste, healthiness) Brand (brand image)	n/a	n/a
Environmental meanings	Environmentally friendly Environmentally harmful	n/a	Environmentally friendly Environmentally harmful
Origin-related meanings	Authenticity Syntheticity	n/a	Authenticity Syntheticity
Food-related meanings	not applicable (n/a)	Food safety Contamination	n/a
Health-related meanings	n/a	Health safety Health risk	Health safety Health risk (e.g. fireplace burning)
Disposal related meanings	n/a	n/a	Unrecyclable Disposal safety

**Source(s):** Table by authors

**Table 2.**  
Meanings evoked by  
packaging colour  
across various settings

(e.g. Kauppinen-Räsänen and Luomala, 2010). Further, the analysis showed that colour communicates *environmental meanings*. For example, colour can promote the perception that an offering is environmentally friendly or environmentally harmful (e.g. Herbes *et al.*, 2020). Additionally, colour conveyed meanings related to the quality of *the colour origin*, that is, whether the product and packaging were perceived as authentic or synthetic.

It is important that the colour always reflects something about the product, at least in the image. We [consumers] are in favour of colours. Colours just make me think of my own favourite shades and colours [...] I never buy lilac packages because I'm not a lilac's friend [and] that is kind of a big deal [when buying food] ... In general, the more glaring and darker the colour palette is, the less ecological it would appear to be in my eye. (I#4)

#### 4.2 Packaging at home – colour: a concern for health and safety

On the way home, consumers gradually become aware of the next step in the packaging voyage. Hence, the meanings of colour change because of concerns about such matters as the forthcoming end of the packaging journey: “*You think all the way home, what’s gonna happen to that [package]*” (I#4).

In line with findings from the retail setting, the informants pointed out that the packaging colour attracts attention, noting that it “[is also about] *what colour you pay attention to in the pantry*” (I#2) and that it evokes aesthetic pleasure. For example, many interviewees acknowledged putting food products into different containers when they dislike its original packaging or its colour scale.

The analysis revealed that, in addition to attention and aesthetic appeal, other aspects of packaging at home are also essential, such as colour, as it relates to *food safety and contamination*. Prior studies have shown that migration (i.e. chemical partitioning from packaging into food) occurs when paperboard additives and printing inks leak into the foodstuff (e.g. Nerin *et al.*, 2016; van Bossuyt *et al.*, 2016). Hence, the concerns expressed by many informants were valid, as they worried whether the packaging colour would leak into and contaminate the food and whether the food would be safe:

I don’t think about [safety] in the store. I look at the colours as they are. But, for example, if I heat up food in a microwave ... if it [food] comes into direct contact with its colour, well, then, I might think about it [food and colour]. But when I’m in the store and looking at these beautiful, colourful containers, I’m happy to buy [them]. (I#9)

I’ve actually sometimes been thinking about the pizza box when it’s one of those grey-brown cardboard packaging on the inside: then, what is absorbed into food, when it’s kind of like that, a cardboard box? (I#24)

Related to food safety matters, the informants expressed concerns about *health safety and health risk* related to the packaging colour and its printing ink. These concerns appeared, for example, in the informants’ practices at home. Specifically, some informants discussed this concern in the context of reusing coloured packaging at home. Further, some informants shared experiences with packaging that did not work as intended. For example, colour emission during the handling of the packaging concretised the existence of dyes and evoked health concerns. In the following excerpt, an informant describes how the packaging colour rubbed off on her hands, raising numerous questions and uncertainties regarding coloured packaging:

I was, or it was, like, a “how did this happen?” moment. Like, it was definitely something I wasn’t used to, and I was left thinking “what is this?” [referring to colours that stained her hands]. (I#22)

It appears that, at home, as packaging is used, both the packaging and the meanings conveyed by its colour are renegotiated and redefined as a new set of considerations emerges.



The analysis revealed that, on one hand, as the packaging is put into use, meanings about safety, risk and even contamination emerged. At home, then, consumer–packaging interaction relates, essentially, not to concerns about a colour’s harmfulness to the environment but to its harmfulness to food and health. On the other hand, the analysis showed the role of packaging extends beyond the initial functions performed in the store. In particular, the informants stressed how they start to consider the potential of packaging for reuse or repurposing. Nonetheless, the dimensions of sustainability turn into product safety and personal health issues rather than concern for the environmental burden.

#### 4.3 Packaging at the end of the journey – colour: a recyclability concern

In this final phase of the packaging journey – away from home – consumers consider packaging from a disposal and sorting perspective (Herbes *et al.*, 2018; Nemat *et al.*, 2020). Consumer–packaging interactions become more explicit as consumers make concrete decisions about how to dispose of the packaging.

First, in this phase, packaging colour evoked meanings characterised by *disposal*, such as recyclability and disposal safety. Additionally, colour became materialised and perceived as something tangible. This means that colour was evaluated separately from the packaging. While many informants expressed concerns about the origin of colouring (authentic, synthetic), many also expressed worries regarding the colour’s lack of recyclability. Thus far in the literature, packaging material has been a recycling concern (e.g. Nemat *et al.*, 2019; Ketelsen *et al.*, 2020), while the “recyclability” of colour and dye as material objects in the recycling process has been neglected. This issue was expressed as follows:

I actually just saw an advertisement about a shampoo bottle. It said that the packaging is made up of 100% of the recyclable materials, but then it was written that it does not apply to dyes or caps. I think it was really odd to say that. How can you say 100% [recycled material] if it is not [laughing], then, 100%. [...] maybe people don’t realise that those dyes are also material. (I#20)

Similar to recyclability, the informants discussed colour in relation to the environment (environmentally friendly versus environmentally harmful) and human health (safety, risks). Hence, the fact that packaging colour continues its voyage from the home evoked discussions about what unrecyclable colours might do to the environment and human health. This lack of knowledge had consequences, which appeared as feelings of anxiety. In the following excerpt, an informant explains how colour becomes “visible” and tangible when the package is disposed of by burning it in a fireplace:

I do not know how much [damage] those dyes do, whether they are recyclable, [or what happens with] the cardboard or paper after [recycling], [maybe being] dependent on the quality of the paper and all that, but you don’t think about these things until you light the fireplace. (I#9)

The issue of overpackaging was noted relative to materials (Scott and Vigar-Ellis, 2014). However, the informants pointed out that the issue (i.e. overuse) also pertains to the use of colour. In addition, the informants expressed concerns regarding the life cycle of packaging and the sustainability of colour within that life cycle. This topic also emerged in discussions about so-called greenwashing, which is the use of colour to convey ecological meanings (e.g. Seo and Scammon, 2017).

If you have [a packaging made of] so much [...] material, then it becomes a bit disturbing, and [also] bright colours [...]. If you think of [...] cardboard, [which might be] less processed [than others], unbleached packages may, or at least I would like to think that I would rather buy them, in a way [because they have] saved [...] energy and natural resources. But it’s a little tricky because, you know, it is just one of these things [when they have] dyed a brown package to make it look ecological [laughing]... You also wonder, in terms of its impact on the life cycle of the packaging, if it is very intensively coloured, can you reuse it then? (I#26)

In the disposal phase, consumers’ view on sustainability pivots toward the environmental burden, although personal health concerns are still present. Our findings indicate that consumers’ need for information exemplifies their willingness to act correctly according to best practices to build a sustainable future. [Magnier and Schoormans \(2017\)](#) observed that the assessment of the environmental friendliness of packaging is complicated, as consumers use different means to evaluate aspects of disposal (e.g. environmental claims, ecological labels, environment-friendly images and packaging colour). Our analysis revealed that consumers consider the recyclability of colour along with the material from a life cycle or even ecosystem point of view, without being informed by the industry through specific markers or labels on the packaging.

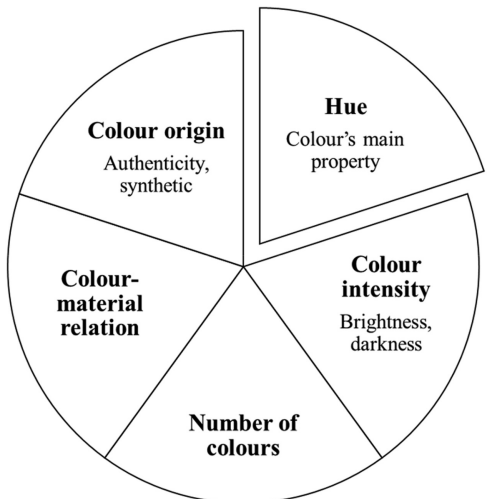
*4.4 Packaging colours and the reasons sustainability concerns emerge*

The findings from this study show how colours evoke environmental meanings both in stores and at home, while at the end of the packaging journey, colour is perceived as a material and, as such, becomes a waste and recycling concern. Based on the current drive for sustainability, further analysis of the environmental meanings was conducted, which revealed insights regarding factors that cause such meanings to emerge, which were as follows: colour hue, colour intensity, number of colours, the colour–material relationship and the origin of the colour (see [Figure 1](#)).

First, environmental meanings are conveyed by colour *hues*, such as green, beige and other earth tones ([Magnier and Schoormans, 2017](#); [Herbes et al., 2020](#); [Scott and Vigar-Ellis, 2014](#)). Moreover, colours give an impression of the origin of a colour, that is, whether the product, packaging and/or packaging colour is authentic or synthetic. In contrast to darker shades, lighter shades seem to convey natural dyes, as reflected in the following quote:

Even though it doesn’t have any effect, these ‘earth colours’ are like [ . . . ] natural colours, kind of the more faded side. (I#4)

Second, the findings revealed that meanings related to the environment are conveyed by the *intensity* of the packaging colour. This finding relates not only to a specific hue (e.g. green) but also to the brightness or darkness of other hues (e.g. red or blue).



**Figure 1.**  
Reasons to  
sustainability concerns

**Source(s):** Figure by authors

In general, the more glaring or dark the colour palette is, the less ecological it seems to me. (I#4)

Third, while environmental meanings were discussed in relation to the overuse of colours, they were also conveyed by the *number of colours* in general. The more colours in the packaging, the less environmentally friendly and sustainable and the more harmful the item.

This finding is supported by the findings of prior research, which showed that consumers equated less colour or less ink on packaging with being less harmful to the environment (Scott and Vigar-Ellis, 2014; Won and Westland, 2018).

Fourth, the *colour–material relationship* was noted. Many participants perceived naturally coloured (i.e. uncoloured) cardboard or “wood colours” to convey environmental meanings.

When [packaging] is really a true beige – I mean a cardboard coating that may remind you more of ecological values or [make you think] that there is a vegetarian dish inside – anyway, it is pretty simple that it is beige, I mean, that kind of wood-coloured material. (I#9)

Moreover, the type of material on which a colour appeared was linked to environmental meanings. For example, cardboard with colour printing was more positively perceived than plastic packaging and colour printing. In the same way, because plastic was considered a non-ecological or synthetic and even harmful packaging material (e.g. Sattlegger *et al.*, 2020), the informants associated it with synthetic dyes, as illustrated by the following excerpt:

If you get a plastic package, the colours are then also synthetic. If, on the other hand, you have paper or cardboard packaging, nowadays, they could be wood-based [materials], or this is the feeling I have. (I#16)

Finally, the informants raised topical concerns about *the origin of the packaging colour*:

Do you even have information on [the packaging] of what dyes are [used in printing] [ . . . ]? I think, in a way, the information given by packaging is focussed on its contents [food], so can you even find out what all the materials and colours [ . . . ] are made of? (I#11)

This informant is expressing a concern about the origin of both the packaging material and the colour, which could not be identified by any markers or labels on the packaging.

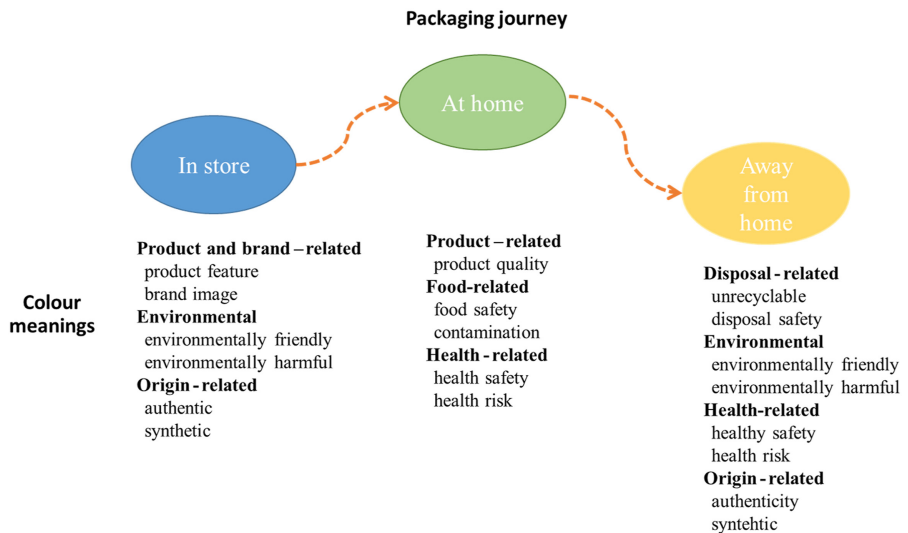
To conclude, the findings indicate that the informants desired to make informed and responsible choices due to environmental sustainability concerns, and they expressed that they were more aware of sustainable issues now than in the past (De Canio *et al.*, 2021; van Giesen and Leenheer, 2019).

## 5. Discussion and conclusion

Product packaging, such as that used for food products, constitutes an integral part of consumers’ daily lives, yet most studies have focussed on the consumer–packaging interaction occurring in-store, ignoring packaging at home.

### 5.1 Theoretical contributions

This study’s theoretical contributions are twofold. First, the study enriches the growing body of marketing research investigating packaging and explicitly packaging colour by introducing the concept of the packaging journey. By uncovering insights on the packaging journey through colour meanings, our study contributes to extant branding and retailing research (e.g. Husić-Mehmedovića *et al.*, 2017; Kauppinen-Räsänen *et al.*, 2020; Martinez *et al.*, 2021; Pantouvakis and Gerou, 2022; Rynänen and Rusko, 2015). The study demonstrates that the consumer–packaging interaction is not limited to the retail context but rather continues and transforms along the voyage toward consumers’ homes and even beyond (see Figure 2).



**Figure 2.**  
The transforming  
packaging colour  
meanings along the  
packaging journey

**Source(s):** Figure by authors

The study provides insights on the way packaging and packaging colour travel alongside consumers throughout the consumption processes of acquisition, use and disposal or recycling (e.g. [Lemon and Verhoef, 2016](#); [Shavitt and Barnes, 2020](#)) as well as on how meanings are redefined along the packaging voyage. Hence, meanings are not stable but dynamic and evolving by nature. Packaging colour is well known as a powerful sensory cue for attracting visual attention ([Kauppinen-Räsänen, 2014](#)). In stores, this function is particularly essential, as brands strive to stand out on crowded shelves. Our finding that colour may be used to attract consumers' attention, evoke aesthetic appeal and communicate meanings related to brands and products is consistent with the results of earlier studies ([Magnier and Schoormans, 2017](#); [Singh, 2006](#)). We found that colour communicates environmental meanings ([Herbes et al., 2020](#)) and the quality of the colour origin (authentic or synthetic) in the retail setting. At home, food-related meanings pertaining to food safety versus contamination issues emerged, such as a fear of chemicals leaking into food (e.g. [Nerín et al., 2016](#)). These meanings were perceived as essential, as food was stored and used in coloured packaging. The findings imply that colour may even be perceived as a health threat, which is why product safety is emphasised during use. Although previous studies have recognised chemical-based health threats in the use of consumer products ([Hartmann and Klaschka, 2017](#); [Sim et al., 2019](#)), considering health threats related to the colour of packaging represents a new perspective on packaging for food products. We also discovered that meanings occur when the packaging continues its voyage beyond home. In that phase, colour becomes materialised and conveys disposal, environmental, health and origin-related meanings. Finally, we observed that the relation between the product, packaging colour and packaging changed along the voyage. As the items were evaluated in-store, the meanings were attached simultaneously to the product, colour and packaging – none in isolation. Then, at home, the product was isolated, and meanings were attached to the colour and packaging, as they were perceived as one entity. In the final phase – characterised by a lack of product – meanings were attached to the colour only, as it was isolated from the packaging.

Second, the study advances the emerging field of marketing driving sustainable production and consumption (e.g. [Sheth and Parvatiyar, 2021](#)), as it reveals how the meaning

of the sustainability of colour emerged but also transformed during the packaging voyage. While past research has mainly focussed on discovering how colour hues communicate environmental issues and sustainability (Lindh *et al.*, 2016a; Magnier and Schoormans, 2017; Pancer *et al.*, 2017; Larranaga and Valor, 2022), our study shows how consumers – while shopping in-store and in the disposal phase – infer environmental meanings from not only the colour hue (e.g. green and beige) but also the colour intensity (e.g. less ink, dark colour palette and more transparent plastic bottle), number of colours, colour–material relationship and colour origin. Hence, the study also contributes to a better understanding of how colours can be used to impact and direct sustainable behaviour both in retail environments and at home. In addition, our study shows that colour was perceived as material or materialised in the last phase of the packaging journey. Hence, while previous research has highlighted the transformation of packaging materials into waste at home (e.g. Lindh *et al.*, 2016a; Herbes *et al.*, 2018; Herbes *et al.*, 2020), our study contributes by showing that as a material, colour also becomes a waste and recycling concern.

### 5.2 Managerial implications

This study has implications for managerial decision-making. First, the study offers insights on the packaging industry, highlighting the vital role of colour within the packaging life cycle. It is within this life cycle that colour transforms from a visual packaging cue to an issue of materiality. Relatedly, the recyclability of colours is a prevailing sustainability issue, which calls for innovations of new and sustainable alternatives. Second, the concept of the packaging journey offers brand, marketing and retail management insights about the multifunction of packaging. The concept highlights that brand packaging affects consumer behaviour, and it may even be used to direct consumer behaviour in retail environments as well as at home. Third, the study can enhance brand and marketing managers' knowledge, as the findings revealed the importance of packaging in consumers' daily lives. Importantly, the findings show that packaging travels alongside consumers throughout the consumption processes. Acknowledging the consumer–packaging interaction in the retail setting is essential (e.g. Martinez *et al.*, 2021), but managers should also recognise that the interaction continues with colours in consumers' homes. Understanding this interaction is key to understanding how to influence consumer responses, such as in-store purchase decisions, how to create customer relationships and how to direct consumer behaviour – in-store, at home and beyond – toward more informed and sustainable behaviour. Indeed, the importance of consumer–packaging interactions warrants recognition.

To conclude, managers as well as designers should pay extra attention to the increasingly important issue of sustainability and its multiple meanings. This includes understanding colour not only as a visual brand cue but also as a tangible material that may be perceived as waste and become a waste and recycling concern.

### 5.3 Limitations and suggestions for further research

This exploratory study has limitations revealing avenues for future research. First, the study was performed in a Finnish context. Practices involving the reuse and recycling of packaging may be contextual and should be validated in other country settings. Second, the sample was biased toward women. Hence, a follow-up study could involve a more equal gender distribution as well as more variety in consumers' demographic backgrounds in general (household, education etc.). Third, in addition to reconsidering the sampling strategy, future research could operationalise the journey and the identified meanings in a quantitative study. Fourth, the study explored the consumer–packaging interaction and focussed solely on colour in retail environments and at home. Hence, future research could explore the dynamic nature of other packaging cues (e.g. shape or size) in that interaction in other contexts, such

as parks and the workplace. Finally, further research on the packaging journey and the dynamic nature of the consumer–packaging interaction could provide insights on how businesses could develop their own strategies to foster longevity and assist consumers in building sustainable practices.

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