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Understanding a SPSS-aided packaging-free shopping practice

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Abstract

Sustainable service-product systems (SPSSs) aided packaging-free shopping are expected to promote sustainable behaviour through enhanced user experience. Yet, understanding about this kind of practice is scarce. In this study, we adopted a qualitative approach through observations and semi-structured interviews with fifteen young consumers. The results present three stages of the practice and identify the challenges in each stage, using the practice theory as a theoretical basis. In light of these, the future offerings of SPSSs are proposed.

Keywords: packaging, practice theory, design, sustainability

1. Introduction

Single-use packaging has created significant waste problems. With the general belief that not producing is the most efficient way to reduce waste (Barata, 2002), packaging-free shopping is back in vogue. Before the mass use of plastic bags, consumers also practised packaging-free shopping, where they simply brought baskets, cloth bags or glass containers etc. from home to carry their groceries. However, this type of packaging-free shopping has become outdated and is mainly associated with older consumers or those with a strong motivation to promote sustainability.

As sustainability becomes more important, there is a growing effort in the design discipline to promote packaging-free shopping. As the traditional way of shopping without packaging is inconvenient, many sustainable product-service systems (SPSS) have emerged to improve user experience and attract younger consumers. For example, both LOOP and Pieter Pot offer online shopping and delivery to relieve consumers from carrying containers, in line with the consumption habits of young consumers. Another example is that both MIWA and Algramo use Radio Frequency Identification (RFID) systems to present product information online or on a smartphone. However, little research has been done on how these SPSSs have changed packaging-free shopping and what improvements can be made.

There have been studies on promoting packaging-free shopping by addressing one or a set of factors, such as Gordon-Wilson et al. (2022) which found consumers' green values can contribute to packaging-free shopping, and Su et al. (2021) which found both personal factors and marketing stimuli factors have effects on consumers attitude of shopping at retailers practicing sustainable grocery packaging. Such causal models have provided designers and researchers systematic discourses to promote packaging-free shopping. Yet, the dynamics and complex nature of shopping as a practice has been overlooked. Whether consumers are recruited is not a simple sum of independent factors, but a complex trade-off between meanings, competences, and materials, three of which need to dynamically nudge each other to achieve a balance (Kuijer, 2014). Realising this, social and ethnographical studies have been conducted (e.g., Fuentes, 2014; Fuentes et al., 2019), but mainly focused on the traditional packaging-free shopping instead of the ones aided by SPSSs. In addition, as such social and ethnographical studies are mainly for improving understanding, these studies mostly ceased at providing a complete panorama

but not enough insights on designing for sustainability. This lack of translation from understanding to inspiration prevents packaging-free shopping SPSSs from improving and engaging new audiences.
In addition, the understanding of young consumers' (young adults aged around 19 - 29) preferences for packaging-free shopping is limited. Young consumers are born familiar to plastic and disposable packaging, while at the same time, they were found concerned about sustainability in food consumption (Bonadonna et al., 2022). This conflict may have made many young consumers willing to be engaged in packaging-free shopping but detained for difficulties in change. A switch of them from packaging to packaging-free shopping would be a promising advancement for sustainable consumption, which may have been a reason for the mass rise (as previously mentioned) of SPSSs that incorporate technologies. More research should be conducted among young consumers for the broader engagement of new consumers. This article, therefore, sets off on this topic and illustrates a qualitative study on a SPSS for packaging-free grocery shopping practice. The research goals of this study, in order, are:

1. Understand young consumers' grocery practices that involve the packaging-free SPSS.
2. Understand whether, why and why not the practices with SPSS can engage young consumers.
3. Spot opportunities to improve the SPSS, so that packaging-free grocery shopping practices with SPSS can engage more young consumers.

In the research goals, the "practice" of shopping is the focal point. We take shopping as a practice, which is a collection of mental activities and physical activities (Reckwitz, 2002), instead of taking it merely as a consumption manner. This perspective, which is based on sociology's Practice Theory (Kuijer, 2014), provides a deeper understanding of packaging-free shopping by considering shopping as a dynamic presentation of materials, competences, and meanings.

2. Methodology

A practice is an interconnection of materials, competences and meanings which are closely connected to each other (Reckwitz, 2002; Fuentes et al., 2019). Based on this definition, the practice theory takes practices as the fundamental and smallest unit of understanding society (Reckwitz, 2002; Kuijer, 2014). The practice theory is decided as the theoretical basis for understanding SPSS-aided packaging-free shopping for three reasons.

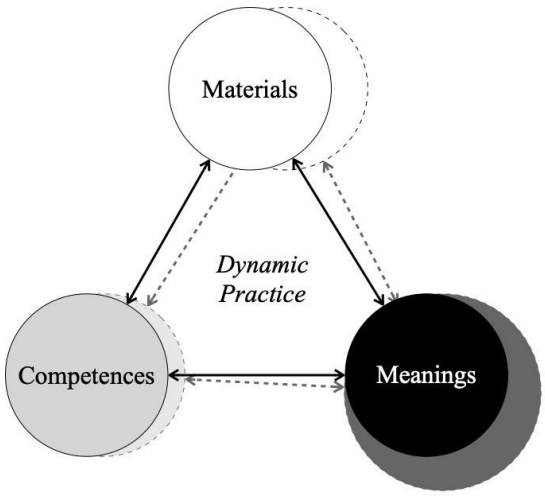

Figure 1. A practice is an interconnection of materials, competence and meanings

First, the practice theory recognises the complexity of practices instead of assuming behaviours as a linear result of multiple individualistic factors (Cetina et al., 2005; Hargreaves, 2011). Going beyond common factors such as intentions, values, and culture, taking shopping as a practice allow researchers to recognise the connections between material elements — such as stores, product dispensers, containers, and phone application; competence elements — such as skills of planning, adeptness in measuring portions, and knowledge for choosing a product; and meanings — such as believing packaging-free is sustainable, and self-service shopping is more "calming" etc.

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Second, the practice theory takes a practice as dynamic instead of set-as-stone. Consumers are subject to social norms and cultural settings. and need to constantly change their behaviours in response to the random variants in real life, such as individuals, social dynamics, organisational structures, technical improvements and living context (Fuentes et al, 2019). For example, the prevalence of single-use plastic bags has deprived consumers' competence in preparing receptacles. This decrease in "competence", from a practice perspective, can be addressed by adjusting "materials" and "meanings" accordingly to stabilize packaging-free practice. For example, stores can offer containers-to-rent on site (materials) to stabilize the consumers lacking the competence in preparing containers. Another example is that young consumers are acquiring online purchasing "competences" (Lissitsa and Kol, 2016), which popularises the "meaning" among some young consumers that shopping should involve less carrying and transportation.

Third, the practice theory has been used in studies of packaging-free shopping. For example, Fuentes et al. (2019) drew on an ethnographic study of a Swedish ecological food store, to argue the shopping practice must be reinvented to successfully remove a key artefact. Barbosa et al. (2023) also took a practice theory perspective and produced interesting insights that packaging-free and alike sustainable practices raises a brand's image by leveraging the meaning elements (customer loyalty) among consumers. These investigations opened a more intensive understanding of the multitude of theoretical and practical components encompassing individual consumers in their daily consumption practices.

However, existing studies are mainly scoped within traditional packaging-free shopping approaches, while little research has focused on SPSSs that incorporate new technologies. To help with the development of these new shopping approaches, a comprehensive understanding of the intervened consumption practices is needed.

3. Study set-up

Packaging-free shopping is a shopping approach which refuses disposable product packaging and one-use bags for carrying. Among various product types including grocery (food and drinks), clothes, daily use commodities, electric products etc., this research focuses on grocery to obtain more specific findings and avoid being general.

The packaging-free grocery shopping SPSS studied was being implemented in a few, specialised supermarkets at the time the study took place (December 2021). This SPSS involves an in-store kiosk device (hereinafter referred as the Kiosk), reusable cups with RFID chips embedded (hereinafter referred as the Cup), and a smartphone application. To purchase with the SPSS, consumers can either rent a Cup provided at the Kiosk or take their personal containers from home. When renting the cup, consumers need to pay a rent but can get refunded when they return the Cup to the Kiosk. The returned Cups will be collected by the corporate, then sent for disinfection and re-distribution. Consumers can also keep the Cup and rent will not be refunded.

We recruited fifteen participants aged between 19 to 29 from the university (females = 6). The participants varied regarding their ecological attitudes and cultural backgrounds. Their dwellings varied and included student studios, apartments, and residential houses. This served to sensitise us to the dynamics of the practice which might be invisible in more homogenous cohorts. The study was conducted in a consumer research lab facility of the university. During the study, each participant was invited to go through the steps of using the SPSS (each lasting 10 ~ 40 minutes) for observation and then participated in a semi-structured interview (each lasting 30 ~ 50 minutes). The observations focused on consumers' activities and interactions with the SPSS. As the smartphone application was not fully deployed at the time of research, interaction with it was not observed but was discussed referring to the application paper prototypes. Through observation, we collected data for the in-store shopping from the direct interaction between consumers and the SPSS. Each interview was audio recorded and then transcribed in full. The scope of the interview was not limited to the in-store process of shopping, but also involved pre- and post-in-store procedures. In addition, the interviews deepened our understanding of whether, why and why not the practices with SPSS will (not) stick among the consumers. We addressed the details of planning, purchasing, storing, preparing, consuming, and even discarding foods in their everyday life, with a focus on interactions with packaging/containers. In

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addition to these general themes, we allowed for follow-up questions that emerged during the discussion.

Audio and video recordings of the experience sessions and interviews were used to collect data. We transcribed and analysed the interview data in a context-mapping approach (Visser et al., 2005). The materials were analysed guided by the research goals. To understand consumers' grocery shopping practice when involving the SPSS and whether consumers can stick to it, we analysed the materials following a constant comparative method. We identified the knowledge, skills, material preparation, external factors and social practices used or needed by participants for packaging-free grocery practice. To spot opportunities for improvement, we let open the choices of topics mentioned by consumers and avoided judging the inspirations.

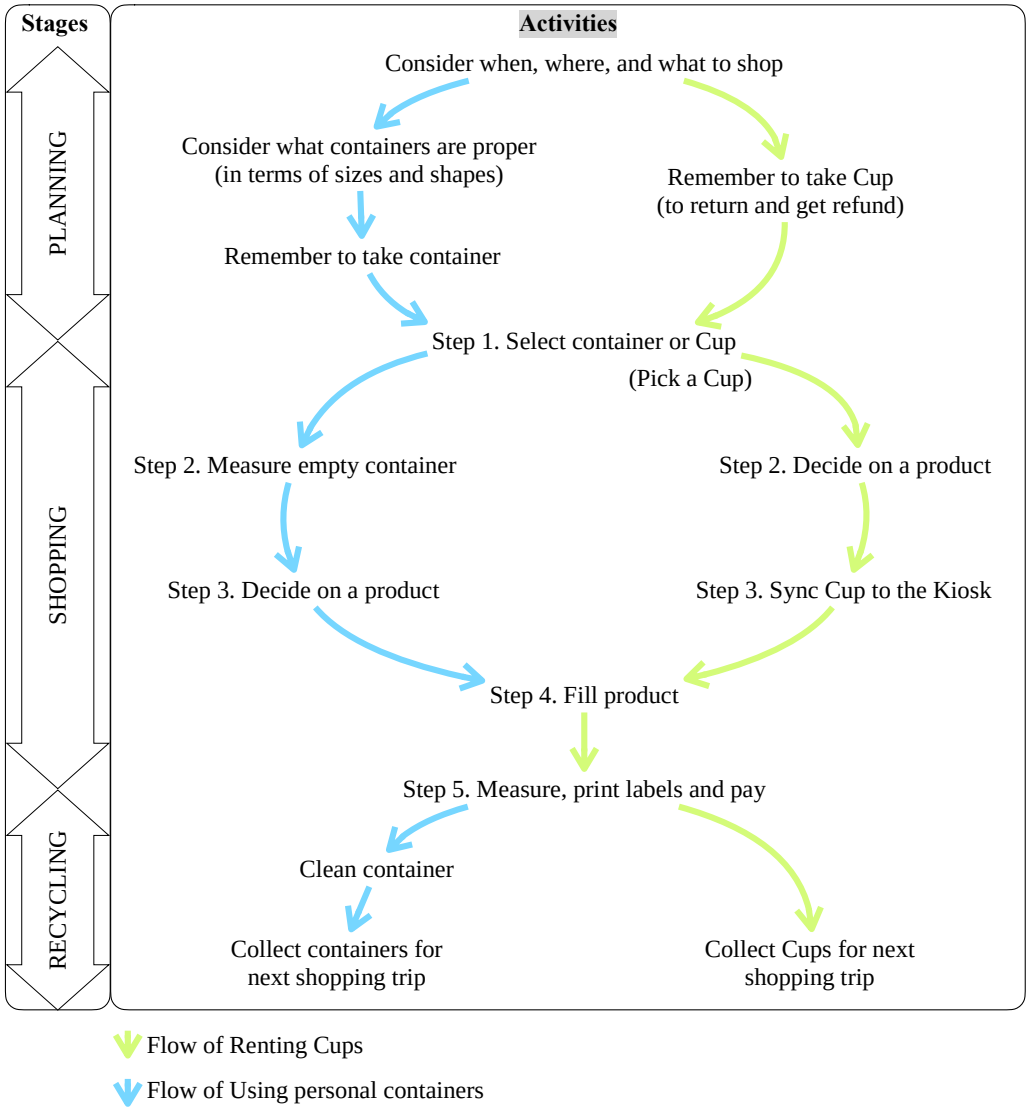

Figure 2. Overview of stages and activities in SPSS aided practice

4. Understanding the practice and issues

In this section, we present our main findings in understanding the packaging-free grocery shopping practice with the SPSS (hereinafter referred as "SPSS aided practice"). In general, although most participants agree with the environmental value of the system, they are not necessarily willing to use it for sustainability, which is consistent with past research by Longo et al. (2019).

It is important to note that, apart from the in-store process, a complete shopping practice also incorporates pre- and post- store shopping stages (Fuentes, 2014). Therefore, we divide the grocery

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shopping practice with the SPSS into three stages of planning, shopping, and recycling, inspired by the six-stage domestic food consumption practice by WRAP (2020). Three sub-sections in this section correspond to the three stages. In each sub-section, we describe what each stage is like and present the issues of the SPSS practice based on consumers' insights. Not being able to observe the behaviours in domestic and real supermarket environments, we try to stimulate participants to reflect on their performances and accounts for them (Giddens, 2004).

First, we describe what activities — including thoughts and deeds — are carried out in each stage of the SPSS aided practice. More specifically, we note the differences between the studied practice and regular shopping practice that incorporates disposable packaging. Next, based on the improved understanding of the practice, we extract consumers' opinions and explanations on whether, why and why not they would switch to the SPSS aided practice. Generally, consumers are willing to use the SPSS in their future shopping practices, but issues from various aspects still require addressing.

4.1. Planning stage

The planning stage of the SPSS aided practice involves four activities which are, considering (1) when and where to shop, (2) what to shop, (3) what containers or bags are proper, and (4) remembering to take containers or bags. In these activities, concerns of consumers mainly fall on two topics, namely the accessibility of the SPSS and competence of taking containers.

4.1.1. Accessibility of the SPSS

In considering (1) when and where to shop, the SPSS Practice requires more mental effort than regular shopping. This is because SPSSs are only available in limited number of stores, which was also mentioned by Fuentes et al. (2019) as an issue. Some consumers imagined it difficult to travel to the SPSS. This unwillingness to take a detour may hinder the adoption of the SPSS. However, as the SPSS almost involves no human labour, several consumers thought the SPSS had the potential to work as a 24/7 Kiosk stand near residential areas or on campus:

> *[P2] Or if you have this machine in your apartment or near your apartment, and then when you want to cook and you find out there's no more rice, or it's not enough, you can take your container to this machine. And it's quite near, you do not have to travel to the supermarket and take your container to the supermarket.*

In considering (3) what to shop, the SPSS Practice presents inferiority than the other two. Most participants hoped to buy all the products in the same store, but at least for now, only limited products are available from the SPSS. Consumers must plan other shopping trips for the products not available or go to a SPSS that is close to a normal market/supermarket. This may decrease consumers' willingness to perform the SPSS Practice.

4.1.2. Taking containers

Activities of (4) considering, and (5) remembering to take containers or bags are necessary for packaging-free shopping either in a traditional manner or with the SPSS. These two activities are also subjected to (3) considering what to shop. For example, for most vegetables, a cloth bag would be enough. While for eggs, a tougher metal container would be better. For liquid in glass bottles, stuffing to avoid brokerage is needed. Inevitably, these two activities entail much mental effort for consumers and can result in a decreased willingness to pursue a packaging-free manner, which confirmed the insights of Fuentes et al. (2019). First, consumers may fail to choose a proper container, either in terms of size or shape. For example, a consumer from Asia said he needed larger containers for rice:

> *[P3] I would say that depends on the product. but I don't think I would have rice in the cup because we are Asian, and we eat a lot of rice.*

Second, consumers may forget to take containers or feel troublesome for taking containers to work/school before shopping.

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[P2] If I leave the room quite harshly like I wanted to catch a train or something, I won't really decide what I want to have in my bag.

4.2. Shopping

The shopping stage is the in-store process during which consumers get and pay for products. As depicted in figure 2, consumers go through 5 steps in this stage. First, consumers (1) select on the Kiosk screen whether they need a Cup or have brought a personal container. Based on this selection, consumers perform shopping in different user flows. Consumers using personal containers need to (2) measure the empty container, (3) decide which product to purchase, (4) fill the product, (5) measure the product, print labels and pay. While consumers renting a Cup need to pick a Cup, (2) decide which product to purchase, (3) sync the Cup to the Kiosk, (4) fill the product, (5) measure the product, print labels and pay. In these activities, four major topics of insights include, the (un)unified user flows of the SPSS, information for choosing products, competence of measuring portions, and the context for learning.

4.2.1. Different user flows of the SPSS

One significant issue lies in the difference between the two user flows. The difference causes confusion and hamper consumers from memorising how to use the SPSS. With a personal container, consumers measure the container on the scale again to tare its weight. In contrast, with the Cup, consumers sync the Cup to the Kiosk to tare its weight automatically. At the same time, this syncing action is also where consumers choose the product to purchase. Confusion of consumers is bifold. First, without a process of weighing the empty Cup, some consumers mistook that the weight of Cup was also included in the total weight of products, although they later recognised it might not be the case:

[P8] I wonder if the weight of the cup has been subtracted … I think maybe [the system] knows what the weight of this cup is, so that's why it didn't ask me to tare.

Considering these, unifying the way to tare containers and the timing of choosing product in both cycles could be a solution.

4.2.2. Needing information for choosing products

Another issue is in accessing information for choosing products. To compensate for the information missing on packaging, labels that convey basic product information are printed by the Kiosk and detailed information can be accessed on the screen and smartphone application. However, consumers met issues in accessing information for decision-making. First, the information about product on the Kiosks are not enough for consumers to make decisions. For succinctness, information such as allergen and ingredient details were missing from the label. Second, although the Kiosk screen has offered more detailed information, consumers could not occupy the screen for too long when there are many consumers using the SPSS. Third, products were not visible to the consumers, which decreased consumers' trust in food quality. Fourth and a most interesting issue is that new types of information are expected to explain more about the SPSS. For example, how and when are products refilled into the Kiosk, who performs the refilling work and why the person can be trusted, whether the Cups have been separated for different allergen in distribution, etc. Inability in finding answers to these questions would decrease consumers' trust in food safety and hygiene.

[P11] When changing the capsules, do they change the whole capsule after this is empty or change it, for example, once a day?

4.2.3. Measuring portions

There is also a major issue in measuring product portions. Without disposable packaging separating products into standardised portions, the SPSS grants a higher flexibility, while at the same time requires consumers the competence to decide the weight or volume of products. Some consumers suggested that some weight or volume samples should be provided nearby for a reference.

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[P6] You can put a few samples next to this (system) and then how much is this (sample) and how much is this (the Cup) in grams? To give an intuitive feeling of weight.

4.2.4. Context for learning

In addition, the SPSS Practice presents a cliffy learning curve. Six consumers remarked the learning process "time-consuming". This would refrain consumers from trying the SPSS, especially if they are in the context of a busy supermarket. Eight participants thought they may not try the SPSS when there were many consumers around:

[P6] If there is a line of five or six people, I would feel embarrassed … at least not at ease to read the texts.

This can be attributed partly to the above-mentioned difference between two cycles, and partly to the common usability issues. One example of usability issue is consumers were not informed of their progress and how many steps are left.

4.3. Recycling stage

The recycling stage is both the closure to one complete shopping practice, and the start of another. Making this stage easy for consumers, therefore, is vital in retaining consumers to the packaging-free practice and increase customer retention rate. In addition, the performance quality of the recycling stage has more direct effect on sustainability than the other two stages. For example, if a consumer discards the containers or Cups, instead of recycling them, inevitably this shopping practice will become less sustainable and even become more energy-costing than regular packaged shopping. Consumers need to perform two activities in the recycling stage: (1) cleaning containers, and (2) collecting Cups/containers for their next shopping trip. Lack of information was found as the major cause of issues in both activities.

4.3.1. Cleaning

First, consumers have no idea whether they should perform cleaning before returning the Cup. In fact, the Cups will be collectively cleaned by the SPSS supplier. Self-cleaning is not only unnecessary but would also cause an extra cost of energy and water. However, consumers were not informed of this knowledge. Some consumers mistakenly thought:

[P3] Cleaning by myself is more sustainable.

4.3.2. Meaning for continuing

Second, consumers need a good reason to stick to the SPSS (meaning), as both cleaning and returning activities require high involvement and mental effort. To engage consumers interested in sustainability, it is not sufficient to merely say the SPSS is sustainable. Young consumers required more solid data for proof. For example, the average times that one Cup should be used to offset the greenhouse gas emission related to its production. In addition, consumers' doubts about the safety of shared containers and collective cleaning need to be addressed, especially during epidemic:

[P5] Do they also make sure cups for allergen can be separated throughout the process? I don't think consumers can separate them when they return the cups right? Then that would be dangerous.

5. What should future SPSSs offer?

As mentioned in Section 2, a practice is an interconnection of three types of elements, namely material, competence, and meaning. Based on insights from the research, we argue that designers of future SPSSs should tap into all these three elements, to make packaging-free shopping stick among young consumers. This section summarises and classifies the recommendations that emerged from the issues identified in section 4. An overview of the issues and resulting recommendations is presented in Figure 3.

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5.1. Material elements to offer

To start with, the *material* elements —the physical externalities of the SPSS — requires improvement. As mentioned by the participants, their willingness to shop in a packaging-free manner would fall if they cannot easily access to the SPSSs, if the accessible SPSSs apply distinct user flows, or if they as newcomers feel anxious in onboarding experiences/contexts. Accordingly, the material elements that future packaging-free shopping SPSSs should offer include:

1. Better informed accessibility,
2. More unified user flows, and
3. More comfortable context for learning or onboarding.

One practical concern of consumers is unwillingness to detour for the packaging-free SPSS. Forms of vendor machines (e.g. Selfly Store) or express delivery (e.g. Pieter Pot) have addressed this issue in a way. Combining packaging-free lifestyle into existing businesses and infrastructures, such as supermarkets and drive-through fast food shops etc., can further improve accessibility but requires highly close cooperation between designers and businesses.

Besides, designers can help achieve unified user flows by disassembling the flows and standardizing parts of them across businesses. Consumers can hence switch between different containers or SPSSs effortlessly. This also requires collaboration between businesses and designers of different brands, which hopefully can scale up packaging-free shopping.

In addition, to successfully engage newcomers, the context for onboarding and for learning how to use the SPSS should be designed more comfortable. The presence of crowded consumers should also be considered. For example, it can be set at home by sending an onboarding package to consumers. Before entering stores, the consumers would have expectations of the shopping experience. Designers experienced in interaction design and human-computer interaction are welcomed to contribute to this.

5.2. Competence elements to support

Besides, as change has been made on *material* element — namely replacing disposable packaging with the SPSS and reusable containers — changes on *competence* are required to stabilize the practice of shopping (as discussed in Section 2). To compensate the removal of disposable packaging, consumers need at least the following four competences, for which designers should provide support:

1. Taking containers — including the competence to remember and the competence to choose proper containers,
2. Choosing products,
3. Measuring portions, and
4. Cleaning containers.

Designers might take various measures to support these competences, such as providing tips, providing samples etc. We specifically mention two for inspiration. The first is allowing easier alternatives to the difficult activities. For example, the studied SPSS provides "renting" as an alternative to "taking" containers. Hence consumers without the competence to (1) Taking containers, can also be engaged.

The second way to support lies in technologies such as the Internet and smartphones, in line with the insights of Fuentes and Svingstedt (2017). For example, information and tips needed for (2) Choosing products and (4) Cleaning containers can be accessed online, which at the same time is more up-to-date and in favour of young consumers' information acquisition habits. Another example is that the smartphone application can push notifications to remind consumers to take containers.

5.3. Meaning elements to confirm

Besides, future SPSSs should support to confirm the "meaning" elements that young consumers care about to maintain the shopping practice stable among them. Young consumers look for meanings of engaging in packaging-free shopping. Two meaning elements of packaging-free shopping have been considered the most essential by young consumers:

1. Packaging-free shopping can guarantee access to high quality products.
2. Packaging-free shopping is indeed more sustainable than shopping with disposable packaging.

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Regarding the first issue, designers of the SPSS should probe ways to prove the product quality.
Regarding the concern of sustainability, designers need to provide consumers accesses to data to prove packaging-free shopping is more sustainable. For example, how many uses of one Cup can offset the resources and emissions caused by producing the Cup, and how many uses can offset one disposable packaging used in regular shopping etc. This is in line with the insights of Miao et al. (2023), which conditions of using a SPSS can achieve the expected sustainability effects need to be communicated to young consumers. Designers and marketers for packaging-free shopping SPSSs should address on these meaning elements and help consumers confirm that their endeavours are worthwhile.

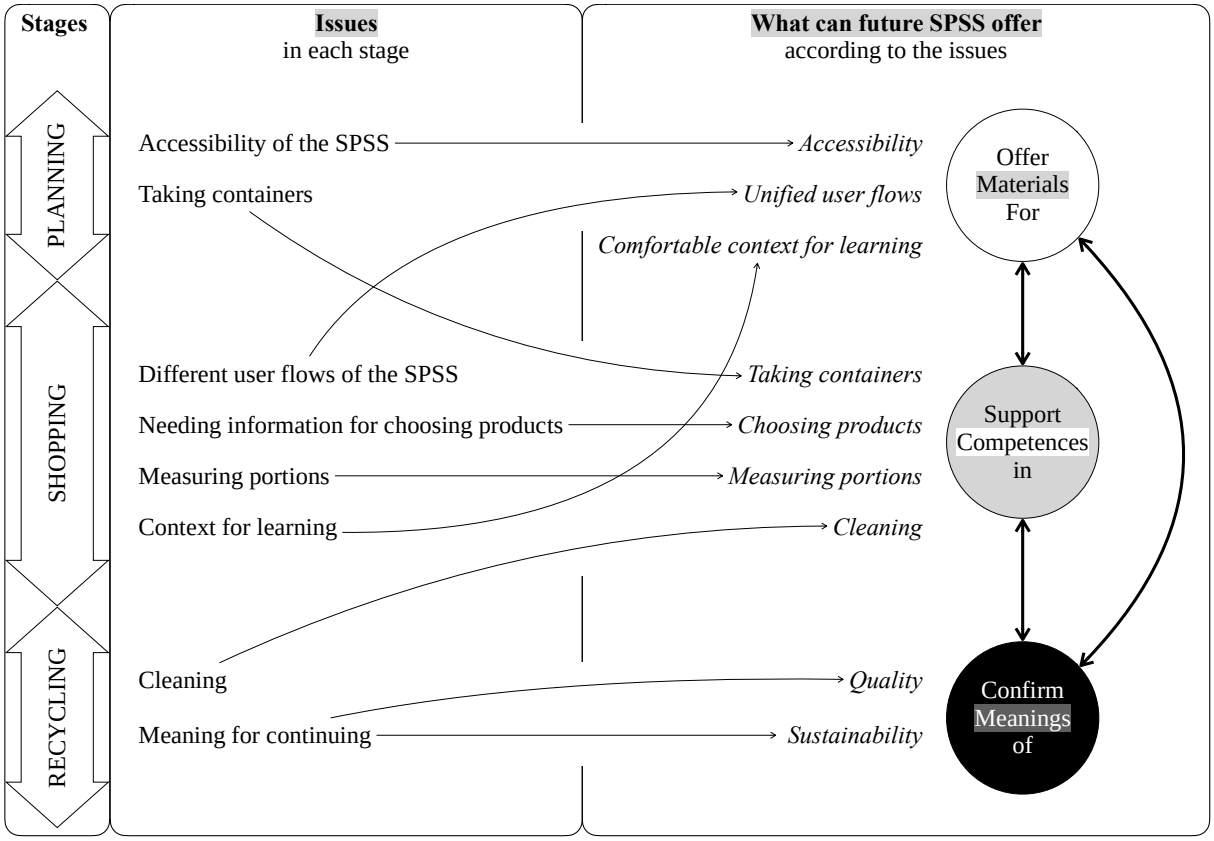

Figure 3. Generating insights according to the issues

6. Discussion and conclusions

In this article, by utilizing a shopping-as-practice methodology and conducting a qualitative study, we demonstrate the actions and reactions of young consumers towards packaging-free shopping practices supported by a SPSS. This enhanced comprehension of the practice enables the identification of potential advantages and obstacles regarding the SPSS to encourage or impede packaging-free shopping among young consumers. We discovered that young consumers hold positive opinions on the studied SPSS and its impact on shopping practices. Although most desire to act responsibly and sustainably during their daily grocery shopping, they are unconsciously influenced by various activities like pre-store planning and post-store recycling.

This study serves as a precursor towards promoting packaging-free shopping and has its limitations. First, it focuses on a single SPSS. We recommend future research to explore various types of SPSSs to validate and enrich these insights. This can assist in the enhancement of SPSSs that target diverse consumer groups or product categories, whilst contributing towards sustainable shopping through collective efforts by various packaging-free businesses.

Second, the study only included university students and excluded other groups. While this provides an intensive examination of practices among uni-students, future studies should involve a more diverse range of demographic and cultural profiles for a more extensive understanding of young populations. In

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addition, as interview questions about consuming food at home were answered by participants' recalling their past behaviours, we acknowledge the possibility that participants may give socially desirable responses to improve their images. A more solid way to address this would be having a room tour and observe how participants consume food.

Ultimately, our study aims to give an overview of issues involved in packaging-free SPSS practice and provide opportunities for its improvement. To propose a formal set of requirements, further tests among designers and consumers are required. We hope this article inspires future research and designs to engage more consumers in a sustainable shopping practice and contribute to a more sustainable society.

References

Barata, E. (2002). “Municipal waste”. In: *Waste in Ecological Economics*, pp. 117-145.

Barbosa, B., Shabani Shojaei, A., and Miranda, H. (2023). "Packaging-free practices in food retail: the impact on customer loyalty", *Baltic Journal of Management*, Vol.18 No. 4, pp. 474-492. https://doi.org/10.1108/BJM-10-2022-0386

Bonadonna, A., Duglio, S., Bollani, L., and Peira, G. (2022). "Mountain Food Products: A Cluster Analysis Based on Young Consumers’ Perceptions", *Sustainability*, Vol. 14 No. 19, 12511. https://doi.org/10.3390/su141912511

Cetina, K. K., Schatzki, T. R., and Von Savigny, E. (Eds.). (2005). *The practice turn in contemporary theory*. Routledge.

Fuentes, C. (2014). "Managing green complexities: consumers' strategies and techniques for greener shopping", *International Journal of Consumer Studies*, Vol. 38 No. 5, pp. 485-492. https://doi.org/10.1111/ijcs.12124

Fuentes, C., and Svingstedt, A. (2017). "Mobile phones and the practice of shopping: A study of how young adults use smartphones to shop", *Journal of Retailing and Consumer Services*, No. 38, pp. 137-146. https://doi.org/10.1016/j.jretconser.2017.06.002

Fuentes, C., Enarsson, P., and Kristoffersson, L. (2019). "Unpacking package free shopping: Alternative retailing and the reinvention of the practice of shopping", *Journal of Retailing and Consumer Services*, No. 50, pp. 258-265. https://doi.org/10.1016/j.jretconser.2019.05.016

Giddens, A. (2004). "The constitution of society: Outline of the theory of structuration: Elements of the theory of structuration". In: *Practicing History*, Routledge, pp. 121-142.

Gordon-Wilson, S., Modi, P., and Eastman, J. K. (2022). "Values, personality traits, and packaging-free shopping: A mixed-method approach", *Business Ethics, the Environment & Responsibility*, Vol. 31 No. 2, pp. 546-561. https://doi.org/10.1111/beer.12418

Hargreaves, T. (2011). "Practice-ing behaviour change: Applying social practice theory to pro-environmental behaviour change", *Journal of consumer culture*, Vol. 11 No. 1, pp. 79-99. https://doi.org/10.1177/1469540510390500

Kuijer, L. (2014). *Implications of social practice theory for sustainable design*, Delft University of Technology.

Lissitsa, S., and Kol, O. (2016). "Generation X vs. Generation Y–A decade of online shopping", *Journal of retailing and consumer services*, Vol. 31, pp. 304-312. https://doi.org/10.1016/j.jretconser.2016.04.015

Longo, C., Shankar, A., and Nuttall, P. (2019). ""It’s not easy living a sustainable lifestyle": How greater knowledge leads to dilemmas, tensions and paralysis", *Journal of Business Ethics*, No. 154, pp. 759-779. https://doi.org/10.1007/s10551-016-3422-1

Miao, X., Magnier, L., and Mugge, R. (2023). "Switching to reuse? An exploration of consumers’ perceptions and behaviour towards reusable packaging systems", *Resources, Conservation and Recycling*, Vol. 193, 106972. https://doi.org/10.1016/j.resconrec.2023.106972

Reckwitz, A. (2002). "Toward a theory of social practices: A development in culturalist theorizing", *European journal of social theory*, Vol. 5 No. 2, pp. 243-263. https://doi.org/10.1177/13684310222225432

Su, D. N., Duong, T. H., Dinh, M. T. T., Nguyen-Phuoc, D. Q., and Johnson, L. W. (2021). "Behavior towards shopping at retailers practicing sustainable grocery packaging: The influences of intra-personal and retailer-based contextual factors", *Journal of Cleaner Production*, Vol. 279, 123683. https://doi.org/10.1016/j.jclepro.2020.123683

The WRAP (2020), Food and Drink Federation Members' Waste Survey 2015, WRAP, England.

Visser, F. S., Stappers, P. J., Van der Lugt, R., and Sanders, E. B. (2005). "Contextmapping: experiences from practice". *CoDesign*, Vol. 1 No. 2, pp. 119-149. https://doi.org/10.1080/15710880500135987

https://doi.org/10.1017/pds.2024.125 Published online by Cambridge University Press