Conversations with the Circular Consumer

by

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ABSTRACT

The circular economy is viewed as a solution to many of the environmental and social ills that the linear economy has exacerbated. Whether it is through refill solutions or redesigning a cardboard shipping container, fast-moving consumer goods (FMCG) brands are rethinking the way their products are delivered to consumers through business model innovations that promote circularity. The consumer plays the important, often overlooked, role of enabler within circular business models. This study aims to increase broader understanding of what motivates circular consumption of fast-moving consumer goods while analyzing the relationship between motivators and the behaviors required to participate. Semi-structured interviews provide insights from consumers who are currently purchasing household cleansers from brands that operate with a circular business model. Results from this study highlight a group of consumers that are distinguished by their common desire to reduce their personal consumption of plastics. There is clear indication that these consumers are in fact seeking out ways to consume more sustainably. A significant subset of this group expresses concern regarding ingredients used in the products. Health concerns for themselves, their family, or a pet are driving a desire to understand product ingredients. There is evidence to indicate that the concern for personal consumption of plastics is being driven by information distributed via social media and supported by targeted advertisements for brands that address this concern.

Keywords: circular economy, circular business models, sustainability, fast-moving consumer goods, consumption, consumer, single-use plastics, household-cleansers

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Conversations with the Circular Consumer

The circular economy (CE) is a means by which sustainable development can be systematized and operationalized to assist the public and private sector in achieving sustainable development goals (Kirchherr et al., 2017). Businesses, communities, and governments are increasingly embracing this economic system even though the CE still lacks common understanding, clarity of intention, or an agreed upon definition (Kirchherr et al., 2017).

Developed economies are consuming too much, developing economies need to consume more; this is a consumption conundrum compounded by global epidemics of biodiversity loss, climate change, environmental degradation, and resource loss. Globalization has pushed the resource and emission heavy production of goods to be consumed by developed nations into developing and lesser developed nations leaving the latter with the residue of industrial and socioeconomic pollution.

While globalization of production has raised the GDP of many lesser developed nations, improving quality of life via access to much needed consumables and services; developed nations continue to consume at the same rate. This is causing the consumption of resources to increase, pushing the needle ever closer to the edge of the planet's boundaries. It is within this paradigm that China and the EU—leaders in global production and consumption—are enacting legislation in order to promote shifts in their traditionally linear economies (*China circular economy promotion law | Public Private Partnership*, n.d.; *City governments and their role enabling a circular economy transition*, 2019; *Implementation of the circular economy action plan*, 2019). These nations, among others, envision the CE as a powerful way to look at production and consumption systemically and shift from a process that takes resources, makes products, and ultimately wastes the byproducts to one that is both regenerative and restorative.

The CE is defined by its interdependent relationship between production and consumption in the cycling of biological and technical resources (Alfredsson et al., 2018). In this socio-technical system, resources transformed into consumer goods are passed into the possession of consumers who take the utility they need from the goods. When the item is no longer useful to the consumer it is put back into the system to be restored for further use, recycled for its resources, or in the case of biological nutrients, restored to the biosphere.

The CE envisions a better way to consume and a healthier way to produce the goods that all people need. This includes non-durable necessities like food, clothing, medicine, or cleansers and durables like vehicles, washing machines, or computers. CE business models look beyond traditional ownership to models that promote sharing or access; they advocate for durability over obsolesce and rethink the delivery of highly wasteful fast-moving consumer goods (FMCG).

The CE is being embraced because it provides a solution to the consumption conundrum. Resources used in production cycles are valued. Renewable energy sources are promoted to preserve valuable non-renewables. Products are designed to be more durable, more easily refurbished, more recyclable, or more compostable so that resources are kept in the system and out of the landfill. Through these processes, developed countries can limit their use of virgin materials and developing countries can increase their consumption as needed while not stressing the globe's finite resources.

The Resource Problem

The CE is envisioned as a systems level solution to some of the world's most wicked problems—biodiversity loss, climate change, environmental degradation, resource loss, and social inequity. It is utilized as a means to achieve sustainable development goals in the transition toward a sustainable economy (Camacho-Otero et

al., 2018). In its most modern form, it is a regenerative system of production built on philosophies from the disciplines of design, economics, ecology, engineering, and sustainability (Circular economy schools of thought, n.d.).

Globally, developed nations are adding to rising greenhouse gas emissions and natural resource depletion through unsustainable consumption patterns; while developing nations need to increase their consumption and gain access to much needed goods (Alfredsson et al., 2018). Alfredsson et al. assert that aggregate levels of production and consumption must be reduced in order to decrease greenhouse-gas emissions. Circular models of production can keep resources in the use phase longer, reduce dependencies on non-renewable forms of energy and provide more sustainable means of production for both durable and non-durable goods.

The concepts of resource conservation, feedback loops, and systems thinking espoused by the CE are not new ideas. Merli, Preziosi, and Acampora (2018) point back to Boulding (1966, as cited in Merli et al., 2018) whose mid-20th century work highlighted the concept that the natural resources available to humans are limited. The Ellen MacArthur Foundation references ancient philosophy with a resurgence in these concepts post WWII when computer technology first allowed for the modeling of complex systems (*What is a circular economy?*, n.d.). Andersen (2007) credits Pearce and Turner (1990, as cited in Andersen, 2007) for first using the phrase 'circular economy' in 1990 to explain environmental and economic relationships, and looks to the field of industrial ecology for modern manifestations of the concept.

Many CE business models rely heavily on the recycling of materials as a means by which resources are cycled back into systems. Anderson (2007) notes that this is an unsustainable path for circularity and economic value. He writes:

> While the first and most straightforward recycling options provide evident benefits, once the recycling road is embarked upon, the subsequent benefits gradually become more and more difficult to achieve. It has to be acknowledged that at some stage there will be a cut-off point where recycling will become too difficult and burdensome to provide a net benefit. A circular economy cannot promote recycling in perpetuity. (Andersen, 2007, p. 133-134)

Circular models must address the lifetime of a resource. It is not enough to downcycle a material like plastic through 3 loops, only to have it ultimately rendered useless. CE solutions must address the full lifecycle of created materials.

Defining the Circular Economy

Kirchherr, Reike, and Hekkert (2017) assert that the CE has yet to be well defined. They identified varying degrees of definitions in literature, from that of an impetus toward sustainable development to a focus on the resultant economic prosperity, or environmental benefits. One school of thought recognizes a definition for the CE as a system that has the potential to address many of the world's most complex problems, including climate change and biodiversity loss, as well as the social and economic needs of the world's population (Kirchherr et al., 2017; Lahti et al., 2018; Moreno et al., 2016). Other definitions, tend to focus on the economic and environmental benefits of the CE with less emphasis on equitable futures (Kuzmina et al., 2019; Repo & Anttonen, 2017; Wastling et al., 2018). The Ellen Macarthur Foundation, a think tank promoting the global transition to a CE defines it as:

> an industrial system that is restorative or regenerative by intention and design. It replaces the 'end-of-life' concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials,

products, systems, and, within this, business models. (*Towards the circular economy*, 2012, p. 7)

Resulting from a review of over 100 pieces of literature Kirchherr et al. (2017) propose a definition of CE "an economic system that is based on business models which replace the 'end-of-life' concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes" (p. 224) The authors go on to further explain the micro, meso, and macro levels at which the CE operates and specify (where other authors haven't) that the CE's aim is to accomplish sustainable development, promoting "environmental quality, economic prosperity and social equity, to the benefit of current and future generations" (p. 225). They emphasize a need for the pursuit of a common definition and understanding of the CE to avoid dilution and a never-ending contention of its definition and purpose. They highlight that as it stands, the concept is often boiled down to a message of "reduce, reuse and recycle" (p. 229) ignoring the profound changes the CE requires within industrial and post-industrial economies (Kirchherr et al., 2017).

In a literature review of consumption in the CE, Camacho-Otero, Boks, and Pettersen (2017) confirm the usefulness of the definition by Kirchherr et al. despite its reference to a limited number of actors within the system. This research will refer to the definition by Kirchherr et al. as the means by which to analyze the circular business models referenced:

> A circular economy describes an economic system that is based on business models which replace the 'end-of-life' concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes, thus operating at the micro level (products, companies, consumers), meso level (eco-industrial parks) and macro level (city, region,

> nation and beyond), with the aim to accomplish sustainable development, which implies creating environmental quality, economic prosperity and social equity, to the benefit of current and future generations. (Kirchherr et al., 2017, p. 229)

Implementing the Circular Economy

Adoption of the CE has gained momentum in recent years as evidenced by the uptick in research written on the subject (Kirchherr et al., 2017; Merli et al., 2018) and by the increasing number of governments adopting CE initiatives (City Governments and Their Role Enabling a Circular Economy Transition, 2019; Merli et al., 2018). Policy makers at the local, national, and international levels are developing road maps for implementing CE strategies that will ultimately help these principalities achieve the 17 Sustainable Development Goals adopted in 2015 (*City governments and their role enabling a circular economy transition*, 2019).

In 2009 China led the way in CE legislation with adoption of "The Circular Economy Promotion Law" (*China circular economy promotion law | Public Private Partnership*, n.d.). Six years later the EU developed "The Circular Economy Action Plan" as all United Nations Member States were adopting "The 2030 Agenda for Sustainable Development" (*Implementation of the circular economy action plan*, 2019). Cities like Amsterdam, London, Paris, Shenzhen, São Paulo, and Charlotte have developed CE strategies to complement national strategies or in some cases lead the way where there is no national strategy (*City governments and their role enabling a circular economy transition*, 2019).

Kirchherr et al. (2017) define implementation of the CE at three systems levels: micro, meso, and macro—this characteristic of systemic implementation is confirmed as necessary by several groups of researchers (Hazen et al., 2017; Merli et al., 2018). Though Hazen et al. (2017) refer to just two levels—micro and macro. Effective

implementation of the CE requires system wide change starting with local, national, and global legislation, funneling down to changes at the industrial level and finally affecting companies and consumers (Kirchherr et al., 2017).

Problem Opportunity

The CE is moving ahead and gaining traction quickly through governmental legislation, corporate adoption and consumer participation. This is evident in the academic literature, supported by gray literature and quantified by activity in the private sector. Academic research highlights the opportunity for advancement of knowledge in the area of consumption and the consumer as an important actor within the CE (Camacho-Otero et al., 2018; Kirchherr et al., 2017; Kuzmina et al., 2019). Gray literature fills in some of these gaps in knowledge with deeper insight on circular business models and the actions required by the consumer in these models (Circular advantage, 2014; Harnessing the fourth industrial revolution for the circular economy consumer electronics and plastics packaging, 2019; Reuse, Rethinking packaging, 2019; The circularity gap report, 2019).

Questions remain around consumption behavior, behavior change, and adoption of new business models. The fields of consumption theory and sustainable consumption can provide some insight into defining how to examine these questions. For example consumption theory labels acts of consumption as reflected and non-reflected to distinguish the amount of consideration given to an act. Acts are also labeled essential and non-essential to communicate the level of significance an actor assigns to the act of consumption (Kaufmann-Hayoz et al., 2012). Fischer, Michelsen, Bliittel-Mink, and Di Giulio (2012) break down the act of consumption even further to include the individual actions of “selecting, acquiring, using, as well as disposing of, recycling and co-

producing" (p. 71). They describe each of these actions as able to satisfy an "objective need" or a "subjective desire" (p.71).

With so many variables involved in a single act of consumption, it is no wonder that many authors question the validity of attempting to change consumer behavior in order to participate in the CE (Wastling et al., 2018). Moreno et al. (2016) argue against the need for the consumer to change behaviors to participate in the CE, stating that "design will be mindful and that in order to implement circular design, designers will successfully adapt circular resources to user needs both for function and pleasure, as an evolutionary role of design for closed loops" (p. 6). Perhaps this evolution is best seen in the adoption of product service systems that provide access to transportation, lodging, or clothing through what has come to be known as the sharing economy. The novelty of mobile technology combined with new ways of establishing trust between individuals caused a shift in consumer behavior and opened a large market opportunity while disrupting the status quo.

Kuzmina et al. (2019) indicate that research in the area of FMCG within the CE is minimal; yet overall growth in this area can be seen throughout gray research. Research from ING shows that existing consumer demand is a major factor influencing businesses to adopt a circular business model (*Opportunity and disruption: How circular thinking could change US business models*, 2019). Major growth is documented in the apparel resale market as evidenced by both consumer adoption and private investments (8 things that moved the circular economy forward in 2018, n.d.; The RealReal, n.d.; The resale market is taking over fast fashion, Report says, n.d.; Yerdle recommerce, n.d.; Machado, Almeida, Bollick, & Bragagnolo, 2019). Global consumer product brands like Unilever and Procter & Gamble are participating in a pilot with TerraCycle, a recycler of hard to recycle goods. The pilot is launching with products from popular FMCG brands

packaged in reusable, returnable containers and shipped directly to the consumer's home (Peters, 2019); Loop is an experiment in zero waste collaboration among brands with global impact.

Research Question

With evidence in the marketplace that circular business models are gaining traction with consumers it stands to reason that consumer behavior is evolving to allow for participation in these models. The aim of this study is to increase the broader understanding of characteristics that motivate the consumer that is choosing to participate in FMCG circular business models. It first asks the question, "What are the primary motivations that caused each individual to choose to purchase FMCG through a circular business model?" This is accomplished through interviews with individuals who are participating in these models specifically, businesses that produce and sell household cleansers and laundry detergents. The interviews will address the primary motivations that caused each individual to choose to purchase goods from a system that is markedly different than the established linear economy. The study will also analyze any changes required in the individual actions of consumption involved in participation in this type of circular system. The research asks the second question of "What changes are required in the individual actions of consumption involved in participation in this type of circular business model?"

Literature Review

Consumers and Acts of Consumption in a Circular Economy

It is important to note that not all circular business models are sustainable business models. Kirchherr et al.'s (2017) analysis of 114 definitions of CE as sourced from scholarly literature, policy papers, and reports paint a comprehensive picture of why this disconnect between circularity and sustainability exist. The study's findings

show that most definitions of CE first highlight economic prosperity. This is the followed by environmental quality and the rarely mentioned third aspect of sustainable development, social equity. Kirchherr et al. (2017) emphasize the importance of the CE as it is a means by which sustainable development can be systematized within businesses. A lack of common understanding and clarity of intention however may cause an implosion of the concept into "permanent conceptual contention" (p. 228).

The Sustainable Development Goals provide a framework by which sustainability efforts can be enacted globally. Sustainability however, remains a normative concept and thus Fischer, Michelsen, Bliittel-Mink, and Di Giulio (2012) provide a succinct assessment of why evaluating sustainability in consumption acts can be difficult with three conclusions from their research. First, they label the concept that a consumer would be fully aware of all consequences from their acts of consumption as "unreasonable" (p. 77). Leading to the second conclusion, that a consumption action can produce a sustainable outcome without any intention from the consumer to act sustainably. Finally, Fischer et al. conclude that sustainable intention on the part of the consumer does not always result in a sustainable outcome.

It is from within this perspective that the role of the consumer within the CE becomes quite difficult. In a mixed economy like that of the US, consumers first choose to participate in a circular business model over a linear model. This participation by the consumer supports the economics of supply and demand required for a consumer goods business model to thrive. The marketplace can be flooded with competitive brands vying for consumer dollars through the marketing of brand values and propositions. Intended sustainable consumption therefore, can require a level of research and knowledge that may seem out of reach or unobtainable to some consumers. This information overload can look as such:

> Faced with an abundance of different kinds of information about products (e.g. origin and quality), people have to be able to critically evaluate information and carefully choose between different sources of information. People are thus required to make a real effort to go out and gather information, as well as be ready to deal with the tensions and insecurities aroused by contradictory information. (Fischer et al., 2012, p.76)

The consumer as actor in the CE plays the pivotal role of assuring that resources continue to reverse loop though the supply chain (Maitre-Ekern & Dalhammar, 2019). The Ellen MacArthur Foundation has developed a well-known butterfly diagram that visualizes the central role that consumers play in the circling of resources through both technical and biological loops (Towards the circular economy, 2012).

Whether or not a consumer chooses to become an actor in the CE, what motivates someone to be an active participant and how they participate is not well understood in literature. Many researchers note that consumer behavior in the context of the CE is an area that lacks understanding (Camacho-Otero et al., 2018; Kirchherr et al., 2017; Kuzmina et al., 2019; Maitre-Ekern & Dalhammar, 2019; Muranko et al., 2018). Kirchherr et al. (2017) found that the consumer's role as an integral actor within the CE is ignored in most definitions. This lack of awareness is blamed on the minimal research on the topic of consumer perspectives on CE. The authors point out that this lack of awareness could lead to the development of business models that do not gain market share.

Based on the Kirchherr et al., (2017) definition of the CE achieving sustainable development should be a goal of this system. Therefore, consumption within a circular business model can be defined as a sustainable consumption (Camacho-Otero et al., 2018). There are a number of theories as to why consumers choose to make sustainable

or proenvironmental consumption decisions, but no definitive reason or even set of reasons.

Jackson's (2005) comprehensive assessment of consumer behavior and behavior change presents two synthesized concepts to understand about consumption. First, the material goods that are consumed play a symbolic role in our lives. "This symbolic role of consumer goods facilitates a range of complex, deeply engrained 'social conversations' about status, identity, social cohesion, group norms and the pursuit of personal and cultural meaning (Jackson, 2005)." The second concept is that people are 'locked-in' to unsustainable consumption patterns through exogenous structures, restrictions, institutional barriers, norms, habits, or societal values.

Recent articles recognize the consumer as an important facilitator in this socio-technical system. Several research teams have made initial attempts to bring understanding to this area though the development of frameworks or models of consumer behavior in the context of CE. (Camacho-Otero et al., 2018).

Maitre-Ekern and Dalhammar (2019) started their research by developing a list of roles the consumer can act in within the CE including: purchaser, maintainer, repairer, seller, sharer, collaborator, engaging with waste, sorting, and reuse. They then developed a hierarchy of consumer behavior where actions are mapped from avoidance of purchasing to recirculating a purchase. This hierarchy is intended to inform both policy makers and consumers of the behaviors that should be prioritized within the CE.

Singh and Giacosa (2019) developed a framework that identifies through the use of cognitive theory consumer reluctances and barriers to pro-circular behavior in the context of transitioning to participating in CE models. The researchers identified key barriers from previously published research and through a lens of cognitive biases

explained how CE business models are "not fulfilling their psychological, social and cultural needs – resulting in barriers in the diffusion of the CE models" (p. 931).

Singh and Giacosa sought out the barriers that keep individuals from participating in the CE; Repo and Anttonen conversely determined the concepts that Europeans care about that can be used to promote the CE. Through a process of topic modeling the researchers determined 10 topics for a future CE from interviews of over 1000 EU citizens (Repo & Anttonen, 2017). This type of work communicates the collective values of this group of potential CE actors.

CE literature, in general, recognizes that the consumer can play various roles within the system. There are four activities that are identified within the CE in order to promote resource longevity and close loops; these are reuse, repair, remanufacturing, and recycling (Sinclair et al., 2018; Towards the Circular Economy, 2012). Research in this area often focuses on a specific action for the consumer to take, and analyzes the consumer's propensity to do that action (Abuabara et al., 2019; Borrello et al., 2017; Gaur et al., 2019; Hazen et al., 2017; Lieder et al., 2018; Machado et al., 2019; Takahashi, 2020).

Literature indicates that there is no one reason why a consumer would choose to participate in a circular business model. Fischer et al. (2012) and Jackson (2005) both indicate that the circular consumer can be motivated by a number of intrinsic or extrinsic factors and in some cases, may not even be aware that they are making a sustainable consumption decision.

Fast-Moving Consumer Goods and Circular Business Models

While these actions of reuse, repair, remanufacturing, and recycling are relevant to the consumer in many CE business models, only some are relevant for FMCG circular business models. This is because FMCG are, by design and purpose easily disposable or

quickly degrading. They are usually cheap and the timespan of their utility is limited (Kuzmina et al., 2019). Repair and remanufacturing and its corresponding design values; design for durability, maintenance, disassembly, and remake do not apply to goods that naturally degrade or are quickly consumed and consumed in large quantities (Kuzmina et al., 2019; Wastling et al., 2018). Kuzmina et al. provide a succinct definition of a circular business model from which to base this discussion on:

> Through circular business models it is proposed that value can be derived for businesses through savings on labour, material and energy while in parallel having the capacity to reduce negative externalities such as toxic substances, water and greenhouse gas emissions. (Kuzmina et al., 2019, p. 75)

Several reports and articles outline circular business models specifically designed for FMCG. Kuzmina (2019) highlights product service systems, where businesses provide services that enhance the product experience and a 'Hybrid' business model where a business provides access to a durable product, designed for longevity and durability, and a corresponding nondurable item that is consumable. The Ellen MacArthur foundation produced a report *Reuse: Rethinking Packaging* that highlights four business models that champion reuse in the FMCG industry. These four models are: Refill at home "users refill their reusable container at home", Return from home "packaging is picked up from home by a pickup service", Refill on the go "users refill their reusable container away from home" and Return on the go "users return the packaging at a store or drop-off point" (Reuse, Rethinking packaging, 2019, p. 12-13).

It is important to note that each of the four business models highlighted in the *Reuse* report require the consumer to act in a way that they may not have acted previously in order to participate in the model and close the loop or keep resources cycling through the loop. In the case of packaging for FMCG the consumer is often asked

to refill, return, or recycle something. Wastling, Charnley, and Moreno's article on Design for Circular Behavior argues that:

> much of the research in design for a circular economy, to date, addresses the question: 'how can the design of products help enable a circular economy?' However, it would be also helpful to ask the question: 'what is the user required to do to enable a circular economy?' Which naturally leads on to a design question of: 'How can the design of products and systems encourage or enable users to behave in this way?' (2018, p. 4)

Circular Economy as Socio-Technical System

There is an interdependent relationship between production and consumption in the cycling of biological and technical resources within the CE (Alfredsson et al., 2018). Consumers are a significant actor in this socio-technical system when it comes to the system's functions at the micro and meso level in the areas of production, use, and end-of-life scenarios for consumer goods (Maitre-Ekern & Dalhammar, 2019; Hazen et al., 2017). The consumer's role within the context of the CE and specifically within FMCG has not been well documented. (Camacho-Otero et al., 2018; Kirchherr et al., 2017; Kuzmina et al., 2019). Kirchherr et al.'s research regarding definitions of the CE concluded that only 19% of papers referred to consumption—the authors see this as neglect to understand consumer perspectives on and attitudes toward participation in the CE (2017).

A CE functioning within a market economy requires consumer adoption of goods and services to maintain or acquire sustainable, affectual market share. It also requires consumer participation in the cycling of resources through the proper channels. In some cases it requires consumers to accept access over ownership, which can be a paradigm shift in an individual's understanding of their role within an economy (Wastling et al.,

2018). The consumer should be viewed as an enabler of the CE as much as legislation is viewed as a necessity for adoption by corporations at the meso level (Kirchherr et al., 2017; Wastling et al., 2018).

Household-Cleansing Market

In 2017 Geels, Sovacool, Schwanen, and Sorrell published an article in *Science* that outlined a framework for finding the window of opportunity within existing socio-technical systems where innovation can come in and bring rapid system change in order to accelerate a transition to a low-carbon future. The authors describe the framework and its resultant outcomes in this way:

> In this framework, acceleration of sociotechnical transitions involves three mutually reinforcing processes: increasing momentum of niche innovations; weakening of existing systems; and strengthening exogenous pressures, which when aligned can create windows of opportunity. The resulting sociotechnical transitions go beyond the adoption of new technologies and include investment in new infrastructures, establishment of new markets, development of new social preferences, and adjustment of user practices. (Geels et al., 2017, p. 1242)

The household-cleanser market in the United States is currently seeing this type of multidimensional disruption and could possibly see a socio-technical transition in the near future. Niche innovation is happening where small competitors are experimenting with circular business models that remove the bulk of one-time use plastic packaging from the system. In some cases, water rich cleansers are replaced with concentrates, delivered in various forms for use in a reusable bottle.

According to a Nielsen survey from 2016 the majority of North American households still buy household cleaners at large retail chain stores (The dirt on cleaning, 2016). Despite this fact a subset of consumers is trying new alternatives such as,

choosing private-label products over branded products or using home-made cleaners over store bought. Additionally, online shoppers and urban dwellers are driving demand for cleansers that are smaller, less bulky, more concentrated and thus easier to transport (The dirt on cleaning, 2016). This indicates potential weaknesses in the existing system. Lastly, exogenous pressure is coming in the form of regulations from national retailers to remove certain toxic chemicals from home cleaning products ("Wal-Mart names eight chemicals to be removed from products," 2016).

There are several companies in the United States that are experimenting with circular business models in the household-cleaning market. These include, Blueland, Cleancult, Dropps, Force of Nature, and Replenish among others (*Blueland*, n.d.; *Cleancult*, n.d.; *Dropps*, n.d.; "Force of Nature," n.d.; Replenish, n.d.). The novelty of the business models and the common goal of removing single-use plastics and toxic chemicals from the system unite these models. They are niche innovations working together to phase out an existing linear system. Most importantly, they are testing the waters for consumer behavior change in this sector. They beg the questions: "Are consumers willing to opt for concentrated cleansers?" "Will they choose refillable bottle systems over single-use bottles?"

This market provides a novel opportunity to research the attitudes of consumers that have already chosen to participate in these circular business models. Insights are garnered around what macro-level factors like price and environmental benefit or micro-level factors like attitudes guided the consumers decision to migrate from a linear business model to a circular one. (Hazen et al., 2017)

Linearity in the Household-Cleanser Market (Business As Usual)

What do FMCG systems currently look like for the average consumer? The plastic pollution problem paints a picture of businesses and consumers still operating in a

system of take-make-waste: where resources are extracted, used, and disposed of in a way that makes them no longer accessible for further use (*What is a circular economy?*, n.d.). In the case of FMCG often the product in question is consumed while the packaging it is delivered in, is left behind without further usefulness. Plastic packaging has become ubiquitous with FMCG prized for its lightweight qualities and durability. Over the past 70 years FMCG manufacturers have chosen lighter weight materials over their heavier counterparts, reducing packaging costs but also decreasing recyclability (Szaky, 2019).

In 2015 Golsteijn, Menkveld, King, Schneider, Schowanek, and Nissen produced an informative life cycle assessment (LCA) of cleaning products in 6 different categories: manual (hand) dishwashing detergent, compact powder, and tablet laundry detergent, window glass trigger spray, bathroom trigger spray, acid toilet cleaner, and bleach toilet cleaner. Their research determined that for laundry and dish washing detergent the use phase, particularly energy consumed heating water, had the largest environmental impact of all categories measured. The second highest level of environmental impact was coming from sourcing of oleo chemicals—of palm and coconut origins—which are negatively impacting the categories of natural land transformation and agricultural land occupation.

Golsteijn et al. (2015) concluded that in the case of window glass and bathroom trigger sprays where there is no energy consumed in the use phase the environmental impacts are more evenly spread across the categories of ingredients, packaging, and transport. Where again, sourcing of oleo chemicals plus citric acid is negatively impacting natural land transformation, agricultural land occupation, and water depletion including impacts on marine and freshwater ecosystems. In both of these products, notable impacts on climate change, fossil depletion, and particulate matter

formation were related to the blow molding process as well as the production of plastics for the bottles. Both products also showed significant negative environmental impacts resultant from transportation to the retailer. It is important to note that the Golsteijn et al. study does not include environmental and human toxicity impacts within the assessment.

Another LCA assessment of green cleaning products produced some similar conclusions. The use phase of hand and dish soaps assessed had a high environmental impact due to the use of hot water during the cleaning process (Van Lieshout et al., 2015). Additionally, the presence of sodium lauryl sulfate, lauryl glucoside, and decyl glucoside in the formulations contributes to environmental impacts in the same way these oleo chemicals were found to have negative impacts in their conventional counterparts. It is important to note that this study does not include an assessment of product packaging.

In a third LCA study comparing the environmental impacts of conventional (typical) and green industrial and institutional cleaning products, researchers concluded that green cleaning products had significantly lower impacts (Kapur et al., 2012). The green products included in this research were Green Seal Standard compliant. This particular standard has a requirement that products be distributed at minimum concentrations. The requirements for concentrated formulas were found to have a positive effect on the negative impacts from product packaging.

With this research in mind there are two important areas of impact for household cleaning products—packaging and ingredient sourcing. As Kapur, Baldwin, Swanson, Wilberforce, McClenachan, and Rentschler (2012) noted, concentrated formulations can help reduce impacts from packaging. The impacts of ingredient sourcing on ecosystems, even natural ingredients, must be addressed.

Nielsen reports that 79% of North American consumers are purchasing household cleaning products in large retail chain stores (*The dirt on cleaning*, 2016). For over a decade retailer Wal-Mart has sold only concentrated liquid laundry detergents in its US stores, this prompted a shift to concentrated detergents across the industry (*Wal-Mart completes goal to sell only concentrated liquid laundry detergent*, n.d.). Moves like this reduce water and plastic consumption in the manufacturing process—but do not necessarily move the needle on end of use solutions for the plastics consumed.

Similar shifts have not yet taken hold at instore retail in the conventional spray cleanser market but are being tested online. In 2019 SC Johnson launched a line of concentrate refills for several of their spray cleanser products sold in easily recyclable mini plastic bottles (*SC Johnson makes the case for reuse*, n.d.).

Large consumer packaged goods brands like Procter & Gamble and SC Johnson have joined organizations like Roundtable on Sustainable Palm Oil (RSPO) which advocates to make palm oil sustainable (*P&G environmental sustainability*, n.d.; *SC Johnson to buy only sustainable palm oil*, n.d.). Each of these consumer packaged goods brands include intent to purchase responsibly sourced palm oil as part of their sustainability initiatives.

Searching for circularity in the sourcing of ingredients for household cleansers is beyond the scope of this research which assesses the consumer's role and behaviors in circular business models. However, it is important to understand the environmental impacts that are prominent in the household cleanser market to understand how the circular business models are or are not solving for these issues.

Summary of Methods

Research Design

Semi-Structured Interviews and Sampling

A total of 13 interviews were conducted via telephone during a two-week period in February 2020. One-on-one, semi-structured, 30 to 45 minute interviews allowed for fluid conversation and retelling of the interviewees account of their purchasing decisions. Interviews were digitally recorded and transcribed for coding.

The sample consists of individuals who are currently living in the United States and participating in a circular business model to gain access to household cleansers. Social media platforms (Facebook, Instagram, Twitter) were used as a means by which to find study participants. Criterion and convenience sampling were used in order to pinpoint individuals in this niche group who are making similar purchasing decisions. In order to recruit for this study, individuals who have self-identified as users of these products via reviews or posts on the social feed of a particular brand were contacted via social media with a recruitment message. One respondent was also identified via a poll on Instagram stories.

Individual interviews were scheduled with each respondent via telephone conferencing service. Prior to the interview a message of consent was read to the interviewee and verbal consent to conduct the interview was attained. Participation in the study was voluntary and compensation was not provided.

Interview Script

The interview script was developed with four categories of content as a directive for each question and written in a way to mimic natural conversation. In general, the goal was to build rapport with the subject, gather a base level of data about the subject's household and lifestyle and create opportunities for the subject to describe their

purchasing decisions, allowing them to communicate activities and circumstances that build a narrative to support motivations. Each question fell into one of five categories: needs, sentiment, behavior, motivation, and persona.

The beginning of the interview focused on demographic questions to help frame a persona. The second section then helped to establish an understanding of the interviewee's established consumption behavior particularly in the area of non-durable household items. The third section focused specifically on asking questions to determine the interviewee's motivation for purchasing home cleanser product(s) that are part of a circular business model. This was accomplished by having the interviewee recount how they found the brand/product in question and what actions they took or decision-making process they went through before determining to make the purchase. This line of dialogue led to questions that highlighted the interviewee's needs, new behaviors, and sentiment as it pertains to the product in question.

Prior to the last section of the interview participants were given a list of 12 topics to be rated on a Likert scale. Each statement was a quality of the products in question that has been used to describe the product on the company's website; the statements are phrases used to market the products. Because the interview was conducted by phone and the interviewee had no visual reference during the interview it was determined that a scale of three options would be easiest to remember. Interviewees were asked to give each phrase an assigned level of importance as it pertains to them: (1) *not important*, (2) *important*, or (3) *very important*. Several interviewees naturally turned the scale into a five-point system with responses like, "between not important and important." Thus, the scale has been converted to a five-point scale for evaluation purposes.

The last section of the interview focused on big picture questions that helped to build a more robust understanding of the interviewee's persona and broader

motivations. The inquiries in this section were informed by consumer research conducted by BBMG, brand and social innovation consultancy in which interviewees are asked to describe elements that define "The Good Life" for them (*The pull factor report*, 2019). BBMG's research is ongoing and looks at how the definition of "The Good Life" is shifting for American consumers. This concept was used in this interview for the purpose of better understanding the interviewee's motivations beyond what may be explicit in their retelling of the discovery and purchase story.

Product/Brand Selection

Criteria for participation in this study requires that interviewees be consumers of household cleaner products that are part of a circular business model. An initial list of 14 brands was considered to be a focus for finding study participants. Brands were then eliminated that were not operational within the United States. Three efforts were made to contact users of these brands: (1) direct contact with the company in order to get user contacts (2) general inquiry via Instagram stories to find users (3) direct message contact via social media platforms.

Direct messages via social media proved to be the most successful way to contact users. This method of contact naturally eliminated some brands from the initial list of 14 as brands that have a more active following on social media had more users commenting on posts and reviewing products. Initial efforts were made via Twitter, but no responses were received. Product users were then located and contacted via Instagram and Facebook. A total of 13 users were identified; seven were identified via Facebook and six were identified via Instagram.

This method of sourcing study participants resulted in a group of interviewees that are mainly using three of the initial 14 brands identified: Blueland, Dropps, and cleancult. Each of these three brands has varying types of behaviors required for using

the brand. With this in mind it is important to understand the business model of each brand. An overview of each business model is outlined below—providing insight into the circularity of the manufacturing process as well as the role that the consumer plays while participating in each model. Table 1 provides a comparison of select brand attributes.

Table 1

Comparison of Circular Business Model Brand Attributes

	Blueland	**Cleancult**	**Dropps**
Product category	Household cleansers Hand soap	Household cleanser Hand soap Dish soap Laundry detergent tablets Dishwasher detergent tablets Bar soap	Laundry detergent pods Scent booster Fabric softener pods Oxi booster pods Dishwasher detergent pods
Cleanser format	Concentrated tablets	Liquid cleanser Liquid soaps Tablets	Liquid or powder detergent encased in polyvinyl alcohol membrane
Dispenser/ storage container	Reusable acrylic spray bottle Reusable glass jar with pump	Reusable glass and silicone dispenser with plastic spray nozzle or pump Glass and silicone storage jars	None
Packaging	Cardboard shipping box Paper tablet wrappers	Cardboard shipping box Milk cartons for liquids Paper mailers for tablets	Cardboard shipping box
Use preparation requirements	Mix tablets with water	Pour liquids into dispensers	None

	Blueland	Cleancult	Dropps
Post-use	All packaging is recyclable, tablet wrappers compostable (where facilities exist)	All packaging is recyclable (where facilities exist)	All packaging is recyclable (where facilities exist)
Purchasing options	Purchase at *blueland.com*; No subscription option	Purchase at *cleancult.com* and select retailers online and in-store; Subscription model required	Purchase at *dropps.com* and *amazon.com*; Subscription model optional

Blueland

Blueland produces and sells a cleaning system that consists of four household cleansers: multi-surface, glass and mirror, and bathroom cleaners plus a foaming hand soap. The system contains a reusable acrylic spray bottle for each cleanser and a reusable glass jar with pump for the hand soap. The Blueland cleansers come in the form of concentrated tablets, each tablet is individually packaged in a paper packet that is recyclable or compostable. The cleansers and hand soap are made by adding water to the container and dropping in the appropriate tablet. The tablet takes several minutes to completely dissolve. The mixture results in 20oz of spray cleaner per tablet and 8oz of foaming hand soap. (*Blueland FAQ*, n.d.)

Blueland has received Cradle-to-Cradle Platinum certification which assesses environmental performance and social impact throughout their manufacturing process. Five categories of sustainability are addressed: "material health, material reuse, renewable energy and carbon management, water stewardship, and social fairness (*What is Cradle to Cradle certified?*, n.d.)." The cleansing products have several

certifications that indicate no toxic chemicals are used in the formulations, additionally the products are non-GMO, vegan, and cruelty free (*Blueland FAQ*, n.d.).

Users are currently able to order Blueland products only from the brand's website—blueland.com. Therefore, bottles and tablets require shipping and the appropriate packaging for shipping. All of Blueland's packaging, including the refillable bottles are recyclable; tablet wrappers are compostable and biodegradable. The products are currently only available to US customers. The tablets are made in the US and the bottles are manufactured in China (*Blueland FAQ*, n.d.). The Ellen MacArthur Foundation included Blueland in their *Reuse* report on reusable packaging, making note that this particular business model reduces shipping and packaging costs (*Reuse, Rethinking packaging*, 2019).

Participation in Blueland's model requires consumers to order products from their website, recycle or compost the packaging when new products or refills are shipped. The consumer must then continue to order tablet refills from Blueland to continue use of the refillable bottles.

Cleancult

Cleancult produces and sells cleansers that use coconut oil as their main cleaning ingredient; they are promoted as containing natural, biodegradable ingredients. Their system of cleansers include all-purpose cleaner, liquid dish soap, liquid hand soap, laundry tablets, dishwasher tablets, and a natural soap bar. The system contains a suite of glass and silicone pumps and storage jars for the products. The all-purpose cleaner, liquid dish soap, and liquid hand soap ship in the glass bottles, subsequent refills of the cleansers ship in paper based milk cartons (*Cleancult*, n.d.; *Our Refills | Cleancult*, n.d.). The laundry and dishwasher tablets ship in paper mailers. All of their packaging is

recyclable, provided that the consumer has access to recycling though their local municipality (*Our refills | Cleancult*, n.d.).

Cleancult offsets the carbon produced by its shipping though purchasing carbon offsets, investing in carbon reduction projects and planting. Empty milk cartons, prior to filling are shipped flat, taking up less space than a conventional plastic bottle this process also lowers carbon emissions trees (*Carbon neutral | Cleancult*, n.d.). Cleancult products are cruelty free, this is their only current certification. Cleancult complies with the "California Transparency Supply Chain Act" by disclosing their efforts to eradicate slavery and human trafficking within their supply chain (*California Transparency Supply Chain Act | Cleancult*, n.d.). They also look for human rights violations within their supply chain by inquiring about the origin of any conflict materials they may use in their products (*Conflict Minerals | Cleancult*, n.d.).

Users are able to purchase cleancult's products from their website cleancult.com or from a select number of retailers including online and instore. Cleancult's business model requires users of cleancult.com to be signed up for the recurring refill feature. This means that refills are automatically shipped to the consumer at the monthly interval that they choose (*Cleancult*, n.d.).

Participation in cleancult's model requires consumers to purchase the product through cleancult.com and sign up for recurring refills. The packaging from cleancult—milk cartons, cardboard boxes, and paper mailers must then be recycled. Consumers can also purchase cleancult refills through a select few retailers (online and instore) and do not require the subscription agreement.

Dropps

Dropps manufactures and sells laundry detergent products and dishwasher detergent. Their line of products include laundry detergent pods, scent booster pods,

fabric softener pods, oxi booster pods, and dishwasher detergent pods. Dropps cleansers come in the form of liquid or powder detergents encased in a polyvinyl alcohol membrane. The polyvinyl alcohol membrane is water soluble and able to be broken down to water and alcohol in the environment of a water treatment plant (*Our ingredients | Dropps*, n.d.). Dropps is certified as an EPA Safer Choice Product; this certification takes into account ingredient synergies, energy, and water efficiencies and promotes "green chemistry alternatives" that prevent pollution (*EPA's safer choice standard*, 2015, p. vii). All Dropps products are dye free, some are fragrance free as well (*Our ingredients | Dropps*, n.d.). Their products are vegan and not tested on animals. Any palm oils used in their products are certified to be sustainably and ethically sourced (*General product questions – Dropps*, n.d.).

Dropps products ship in a recyclable, compostable box. The cardboard boxes are 50% post-consumer recycled material the remaining material is certified by the Forestry Stewardship Council and comes from sources conforming to the Sustainable Forestry Initiative Program (*What is Dropps packaging made Oo?*, n.d.). Their cleansing products are manufactured in the United States from globally sourced ingredients (*What ingredients do your products contain?*, n.d.). Dropps purchases carbon offsets, to offset the carbon produced by their shipping; this is promoted as carbon neutral shipping to their customers (*Our carbon neutral shipping commitment*, n.d.).

Dropps products are available to consumers via Dropps.com and Amazon.com online stores. They offer their products as a one-time purchase or as a subscription plan, where products are shipped to consumers on a recurring basis. Pricing discounts are offered to subscription customers.

Participation in Dropps model requires consumers to purchase their products online. The cardboard shipping boxes are to be recycled by the consumer. Customers can make a one-time purchase or participate in the subscription program.

Analysis

A process of qualitative text analysis is used to analyze the data (Kuckartz, 2014). Audio from the interviews was recorded and transcribed for analysis. Categories were developed inductively based on the data and research topics. Data was coded with four main categories: persona, motivations, post consumption behavior, and consumption behavior. Each of the four categories were subdivided further. Consumption Behavior was subdivided to represent the temporal framework of past, current, and future (desired) consumption actions. The categories of persona, motivations, and post consumption behavior were subdivided inductively as common themes presented themselves in these areas. First, interviews are coded to categorize statements that represent values, norms, or beliefs that are identified by the interviewee during the explanation of their past and current consumption behaviors. This data is then segmented to highlight values, norms, and beliefs that are mentioned specifically during the interviewee's retelling of the discovery and decision to purchase the circular product(s) in question.

Summaries of the coded statements were analyzed in a thematic matrix and common values, norms, and beliefs were identified from the explanation of all past and current consumption behaviors. Table 2 provides a synopsis of the identified themes present in three or more interviews.

Table 2

Themes Identified

1. Affordability	6. Environmental values	11. Reduction of single-use plastics
2. Aesthetics	7. Health of a child	12. Supporting small business
3. Animal Welfare	8. Health of a pet	13. Waste reduction
4. Convenience	9. Ingredient concerns	
5. Durability	10. Innovation	

The segmented portion of the data that specifies the interviewee's retelling of the discovery and decision to purchase the circular product(s) in question is analyzed to bring focus to the specific values, norms, beliefs that the interviewee highlighted as being activated with their decision to take a new action or try a new consumption behavior. This part of the analysis was used to answer the first research question: what are the motivations that cause consumers to participate in circular business models as consumers? Analysis of the section of the interview in which participants rate topics on a five-point Likert scale from *not important* to *very important* is used to support or further inform this data.

In the field of environmental psychology values are used to predict proenvironmental behaviors. They are viewed as a way to inform and influence behavior. Universal values have been measured and systematized by researchers in various ways to measure and predict propensity to act. The best, most widely accepted, empirically validated set of universal values based on cross-cultural studies was developed by Shalom Schwartz. Schwartz's theory of basic individual values, initially based on 10 values has since been refined to include 19 values, allowing for greater explanatory power (de Groot & Thøgersen, 2018; Schuster et al., 2019; Schwartz et al., 2012). This

model is circumplex, meaning the values themselves have relationship to each other based on their placement. Nearness on the circular model represents a positive relationship of values; while polarizing relationships are indicated by placement across from each other within the circle. Values are also categorized by hemispheres labeled, *personal focus* and *social focus*. Schwartz's value system is used as a tool to categorize and analyze themes that are common to this group of interviewees.

In order to assess the second research question "What is the relationship between these motivations and any behavior change that may be required in order to participate?"; summations were developed from responses categorized as, past consumption behavior, current consumption behavior, and post consumption behavior. The first two categories of behavior draw relationships between past and current consumption patterns and highlight any changes. Post consumption behavior highlights the types end-of-life actions the subject is accustomed to participating in, such as recycling, composting, reuse or refill. Three categories of behavior are initially identified, *purchase*, *use*, and *post-use*. Two additional categories are subsequently identified as important for this sample group those are *research* and *discovery*.

Limitations

It is beyond the scope of this research to determine the environmental or social impacts of the products highlighted in this research. These products are identified as circular solutions based on the identifiable characteristics available. A second limitation is the sampling method for this research as it is limited to convenience sampling based on timeframe and access.

Results

Profiles of Interviewees

A total of 13 US residents are profiled for this study. Participants range in age from 28 to 46. Seven participants were contacted via Facebook to participate and six via Instagram. Reported total household income ranges from $95,000 to $200,000. Eleven of the 13 total respondents are married and six have children. Ninety-two percent of these households report that they are recycling and 54% are composting. Most respondents, 62%, report living in suburban areas, while 31% report living in urban environments. All respondents were contacted via social media platforms and are ordering products online, so it can be assumed they are technologically adept. Table 3 provides an overview of the group demographics.

Table 3

Demographic Variables Self-Reported During Interviews

Participant	Age	Location	HHI ($)	House size	Married	Recycle	Compost
1	28	URBN	$160000	2	Y	Y	Y
2	42	URBN	$180000	2	Y	Y	N
3	34	SURBN	/	3	Y	Y	N
4	28	SURBN	$195000	3	Y	Y	Y
5	46	SURBN	$150000	3	Y	Y	Y
6	43	RRL	$95000	3	Y	Y	N
7	38	SURBN	$165000	1	N	Y	Y
8	40	URBN	/	3	Y	/	Y

Participant	Age	Location	HHI ($)	House size	Married	Recycle	Compost
9	36	URBN	/	2	N	Y	N
10	42	SURBN	/	4	Y	Y	Y
11	33	SURBN	$200000	2	Y	Y	N
12	29	SURBN	$110000	3	Y	Y	Y
13	29	SURBN	$120000	2	Y	Y	N
Totals	36 Avg	31% U 62% S	$153000 Avg	3	85% Married	92% Recycle	54% Compost

Note. Location: URBN=*urban*, SURBN=*suburban*, RRL=*rural*, HHI: total reported household income in USD, House size: number of adults and children living in house, Recycle: Participant reports household recycling, Compost: Participant reports household composting.

Thematic Analysis of Motivations

Interview data was coded into for motivations to make purchasing decisions, consumption actions, post consumption behaviors (recycling, composting, and refill or reuse), sentiments and persona data. Statements that indicate the participant's attitudes (values, beliefs, norms) and contextual factors (constraints, discounts, income, social pressures) are analyzed to understand motivation in two ways. First as a whole encompassing the entirety of the interview and second as statements that were provided as direct responses to the question(s) "What cleaning product(s) were you using prior to using (insert brand name)? And then how did you come to use (insert brand name)? How did you first learn about it?" A total of 13 common themes were extracted from the

initial analysis of the data. These themes were identified in at least three participants. Table 4 provides an overview of the themes and the total number of participants that indicated the presence of this theme in their personal set of attitudes and contextual factors driving their motivation act in a CE business model.

Table 4

Thematic Values and Beliefs From Statements About Consumption

Theme	Participant													Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	
Innovation	•						•	•	•	•		•		6
Convenience	•		•		•	•	•	•	•			•	•	9
Aesthetics								•		•			•	3
Affordability		•	•			•	•	•	•	•	•	•		9
Ingredient concerns	•	•	•	•	•	•	•	•			•	•	•	11
Health of child			•	•	•			•						4
Health of pet			•	•			•							3
Supporting small businesses				•				•	•					3
Animal welfare				•		•		•						3
Reduction of single-use plastics		•	•	•	•	•	•		•	•		•	•	10
Environmental values	•		•	•	•	•		•	•	•	•	•		10
Durability		•			•	•	•	•						5
Waste reduction	•		•			•			•	•		•	•	7

Note. Analysis from data coded 'motivation for consumption behavior' (statements that indicate the participant's values and beliefs that drive decision making), consumption behavior (statements that indicate past and current consumption actions) and post consumption behavior (statements that indicate end-of-life actions). Total is total number of participants that identify this theme.

Schwartz's Refined theory of individual values is used to further categorize the themes inductively identified within the data set (Schwartz et al., 2012). Schwartz's refined theory of 19 values is used, with 7 of the 19 values identified in this set of data. Table 5 identifies the common themes, the number of participants that identify these themes and the corresponding value from Schwartz's theory.

Table 5

Thematic Values and Beliefs Categorized Against Schwartz's Refined Value Theory

Theme	Total participants	Schwartz's value	Total participants Schwartz's value
Innovation	6	Stimulation	6
Convenience	9	Hedonism	10
Aesthetics	3		
Ingredient concerns	11	Security-personal	11
Health of a child	4	Benevolence-caring	5
Health of a pet	3		

Theme	Total participants	Schwartz's value	Total participants Schwartz's value
Supporting small businesses	3	Universalism-concern	3
Animal welfare	3		
Reduction of single use plastics	10		
Environmental values	10	Universalism-nature	13
Durability	5		
Waste reduction	7		

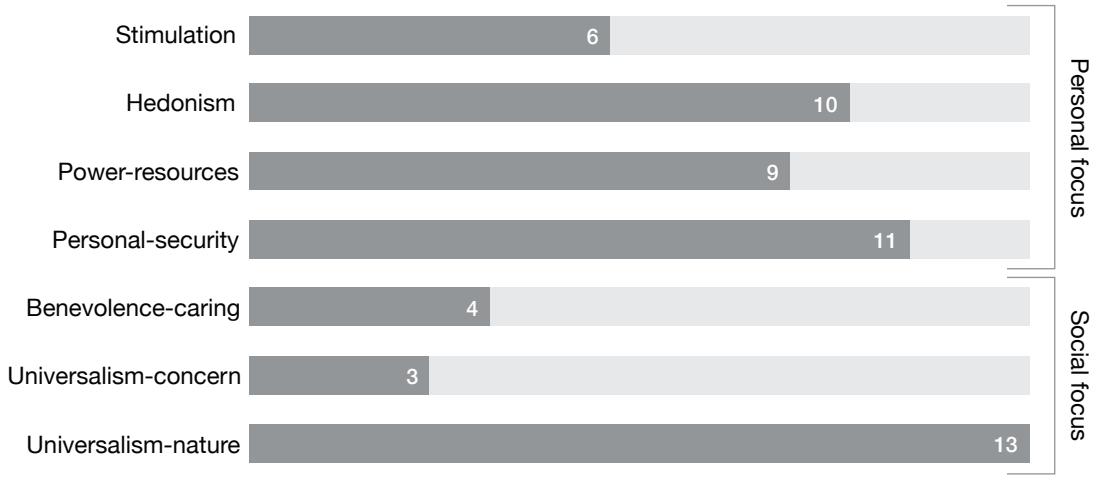
Note. *Total participant's Schwartz's value* is derived by giving one participant one inclusion in the count per value identified.

Schwartz's model is circumplex, meaning the values themselves have relationship to each other based on their placement within the circular model (de Groot & Thøgersen, 2018; Schuster et al., 2019; Schwartz et al., 2012). The seven categories identified above have positive relations to each other based on their nearness on the circular model and polarizing relationships based on their placement across from each other within the circle. The circle of values is divided into quarters and hemispheres (Schwartz et al., 2012). The categories of self-transcendence and self-enhancement are identified as most important for predicting proenvironmental behaviors (de Groot & Thøgersen, 2018). The two universalism values and benevolence are categorized as self-transcendent, meaning transcendence of self-interest. Stimulation, hedonism, and power are

categorized as self-enhancement or promotion of self-interests. The value of security, used to label the theme of *ingredient concerns* is categorized in the quadrant of conservation or conservation of the status quo, it is also categorized on another level as self-protection (Schwartz et al., 2012). Lastly the values are divided into hemispheres identifying the common overarching themes of social focus vs personal focus. Figure 1 identifies the commonality of Schwartz's values amongst the group of interviewees and divides those values into the two hemispheres of personal focus and social focus.

Figure 1

Schwartz's Values Identified, Measured, and Categorized as Hemispheres



Note: This figure depicts analysis from data coded motivation for consumption behavior (statements that indicate the participant's values and beliefs that drive decision making), consumption behavior (statements that indicate past and current consumption actions), and post consumption behavior (statements that indicate end-of-life actions). Categorized into Schwartz's refined value theory. Numbers represent how many interviewees of the total (13) projected each value.

Statements Associated with Discovery and Purchase

The second analysis of the consumption data looks at only the retelling of the interviewee's discovery and purchase story of the circular brand. These are statements that were provided as direct responses to the question(s) "What cleaning product(s) were you using prior to using (insert brand name)? And then how did you come to use (insert brand name)? How did you first learn about it?" Table 6 provides an overview of the initially identified themes and the total number of participants that indicated the presence of this theme in their story of discovery and purchase. Three themes are identified as with the highest level of occurrences within this group, those are: ingredient concerns, reduction of single-use plastics, and general environmental values.

Table 6

Thematic Values and Beliefs From Statements About Product Discovery and Purchase

Theme	Occurrences of theme in individual attitudes overall	Occurrences of theme in discovery & purchase
Innovation	6	3
Convenience	9	4
Aesthetics	3	0
Affordability	9	1
Ingredient concerns	11	8
Health of a child	4	2
Health of a pet	3	2
Supporting small businesses	3	0
Animal welfare	3	2

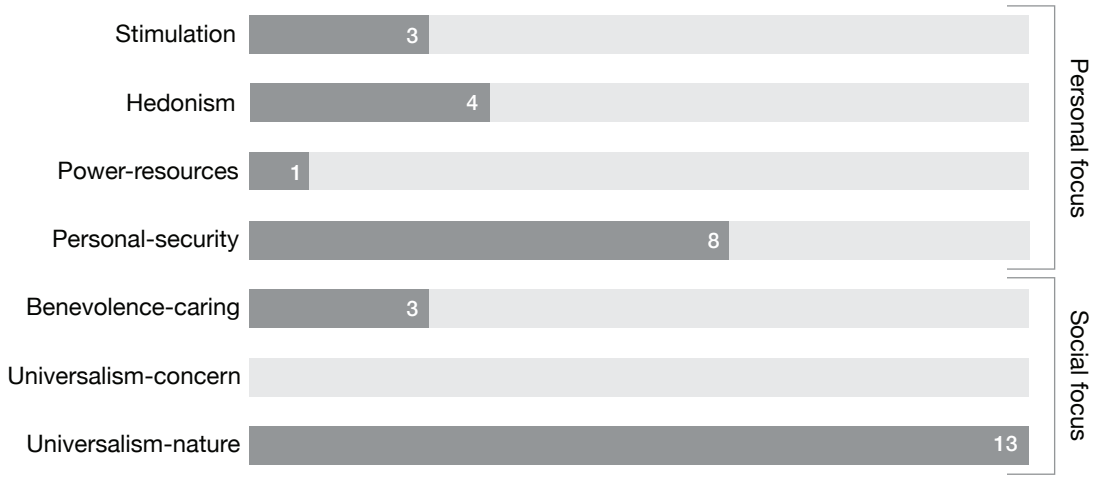
Theme	Occurrences of theme in individual attitudes overall	Occurrences of theme in discovery & purchase
Reduction of single use plastics	10	10
Environmental values	10	8
Durability	5	0
Waste reduction	7	3

Note. This table provides an overview of the initially identified themes and a comparison of the total number of participants that indicated the presence of this theme in their story of discovery and purchase vs occurrences of the theme in the individual attitudes of respondents throughout the entirety of the interview

Figure 2 identifies the commonality of Schwartz's values as assigned to the themes specifically identified in the discovery and purchase story for each interviewee. The identified values are categorized into the two hemispheres of personal focus and social focus. While universalism-nature and personal-security remain high, all other values drop in the number of mentions during the discovery and purchase retelling.

Figure 2

Schwartz's Values Identified for Discovery and Purchase Themes; Measured and Categorized as Hemispheres

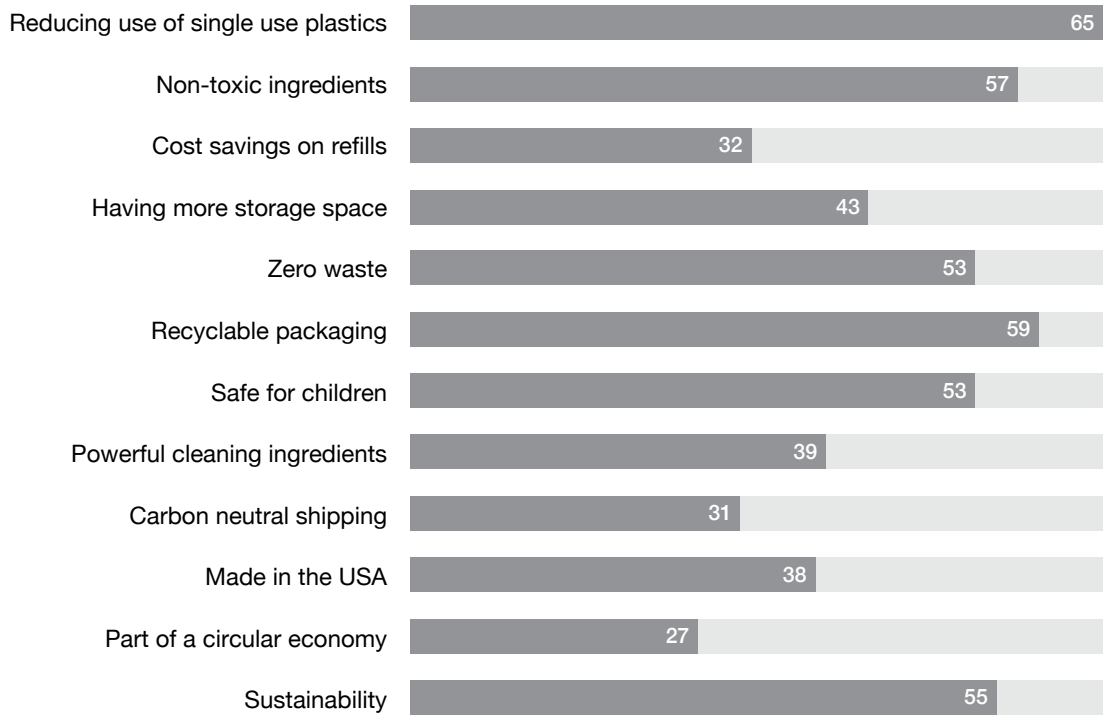


Assigning Importance to Statements

Prior to the last section of the interview participants were given a list of 12 topics to be rated on a Likert scale. Each statement represents a quality or characteristic associated with the types of products in question. Interviewees were asked to give each phrase an assigned level of importance, labeling how important each specific quality is to the interviewee. Several interviewees naturally turned the three-point scale (1) *not important*, (2) *important* (3) *very important* into a five-point scale with responses like, "between *not important* and *important*." Thus, the scale has been converted to a five-point scale for evaluation purposes. Figure 3 shows the cumulative scoring of each phrase where the higher the number means the more likely the phrase was rated higher by most participants. *Reducing use of single-use plastics* for example, is rated the highest at (65) where all 13 respondents ranked this statement *very important*.

Figure 3

Evaluating Importance of Product Characteristics



Note. The numbers in this figure show the cumulative ratings from 13 respondents. The following responses were assigned the corresponding values: (1) not important (2) between not important and important, (3) important, (4) between important and very important (5) very important. It should be noted that four respondents were not familiar with the meaning of the phrase *part of a circular economy*; and two respondents were not familiar with the phrase *carbon neutral shipping*. No values were added to the cumulative ratings for these responses.

The results from labeling standardized statements support the results of the value systems and corresponding motivations of this group of consumers overall. There is a high level of importance assigned to statements that would be categorized as

proenvironmental qualities and as well as high rankings for categories associated with health concerns. This is aligned with the thematic assessment of the respondents' interviews.

Proenvironmental Values

The consumers interviewed in this study are undoubtedly focused on sustainable consumption at varying degrees. The common value of *universalism-nature* has been identified through several themes; general proenvironmental values, animal welfare, durability (the desire to consume less), waste reduction and the very specific reduction of plastic waste (single-use plastics in the context of FMCG). This set of norms, values and beliefs has motivated these individuals to find business models that provide an alternative to the more common, linear, in-store retail options. It is notable how often the very specific reduction of plastic waste, single-use plastics characteristic is mentioned in the retelling of a respondent's discovery and adoption story for the new cleansing product. Interviewees that did not specifically mention reduction of single-use plastics and plastic waste in the retelling of their discovery and adoption story indicated the level of importance of this product characteristic through labeling the statement "reduction of single-use plastics" as *very important* when prompted by the interviewer. This is a clear indication that this group of consumers who are participating in these business models are in fact seeking out ways to incorporate their proenvironmental values into their consumption decisions. They are motivated by the ideal that their individual consumption actions can result in positive environmental impacts or as Schwartz (2012) defines the motivational goal "preservation of the natural environment." These concepts are identified by statements in table 7.

Table 7

Mention Reduction of Single-Use Plastics, Plastic Waste

Participant	Age	Example quote
4	28	"I will not buy anything that has been tested on animals, I won't buy anything that I perceive being poor for the environment, that has plastic. I try to minimize our impact as much as possible."
5	46	"Well, I mean it largely comes out of conversations that I've had with friends and conversations in our own house to about how much plastic we use and simply trying to reduce the amount of plastic, we have in our house, um, especially plastic that is single-use plastic. Because I feel like you know, there are... we're never going to be a plastic free house. But to be able to reduce the amount of single-use plastic that we use"
6	43	"It made me really look at, especially this year, just trying to use less plastic, less waste, more compostable, biodegradable everything that's...I'm not perfect by any means I don't have, you know, my own compost pile or anything, but I'm trying to be more conscientious of what I buy and how it impacts the environment."
12	29	"And then, we're always just like very happy to um...do what we can to like help the environment and reduce single-use plastics. Like, I think Blueland actually got us kicked off on that like, we were like, oh, this is, this is great. This is clearly better for the environment."

Note. Mention of *plastics* is understood as *single-use plastic* when the context of the conversation is regarding FMCG

For consumers using Blueland and Cleancult, reduction of single-use plastics is achieved through a refill or reuse model. In a typical linear model, a new plastic dispenser, plastic spray bottle, larger plastic refill bottle or flexible plastic bag would have been purchased as needed. Within these circular models, consumers purchase one plastic or glass spray bottle or dispenser that can last, potentially, years. The liquids or soaps to refill the bottles are packaged in either compostable pouches or recyclable milk cartons and shipped in cardboard boxes. This reduces the consumer's personal consumption of single-use plastic to almost zero, save for the minimal plastic used in recyclable milk cartons. For Dropps customers, plastic jugs, containers, or pouches are being replaced by cardboard boxes.

Concern for Product Ingredients

A subset of this group express concern about the ingredients used in a product. Identified by concern for their own health, their family's health or a pet's health; this is the second most common motivating factor shared by 62% of respondents within the retelling of their discovery and adoption story. When prompted to label the importance of the statement "non-toxic ingredients" 92% indicated that it was a *very important* or *important* characteristic of the products they consume.

Respondents hold a variety of values, beliefs and norms that inform their decision-making process and motivate them to consume products that do not contain ingredients they consider to be toxic or harmful. Categorized as the value *security-personal* within Schwartz's circular model, this value is positioned between the

categories of *self-transcendence* and *self-enhancement* and is situated closer in proximity to *self-enhancement*. It is also categorized by the term *self-protection*. Notably, Schwartz et al.(2012) points out that concern for one's own health is a different but related value than concern for the health of one's family which is categorized as *benevolence-caring*.

This concern for a knowledge of ingredients extended to very few consumer's environmental values. One consumer expressed concern for dyes from laundry detergents leeching into water systems. Another expressed that they are less concerned about toxicity to humans from these ingredients in question, and more concerned about ingredients that can create negative environmental effects, "…things that are toxic to the environment, which I think is, you know, toxic to the fish or that or whatever…that I care more about than you know the sodium laurel sulfate or something." For most respondents, statements about ingredient concerns and health concerns were mentioned separately, thus it was necessary to interpret if the concern for ingredients was about one's personal safety, a family member's safety or the health of the environment. These concepts are identified by statements in table 8.

Table 8

Mentions Concern for Product Ingredients

Participant	Age	Example quote
2	42	"I want to try and use like minimal ingredients as possible and not breathe in toxins "
7	38	"Eventually those products end up you know on their paws and things like that, you know, inadvertently…so I try to be really like careful about what I bring into the house"

Participant	Age	Example quote
8	40	"We started buying it like after my daughter was born because we were looking for just a safer, cleaner "
11	33	"Definitely now more than ever… if I have to buy, you know, detergent even it's definitely now the 'free and clear' brand and making sure it's less dyes, less perfumes fragrances all that is like my number one priority."
11	33	"So yeah, so I just basically started to research that [plant-based diet] and then that kind of led into, well, what else is kind of affecting us, disease-wise or cancer-wise and stuff. And so I started learning about the products we use and everyday products, you know, anything from fabric softener to candles to, you know, uh glass cleaner…But it relates to me because my mom passed away from cancer almost 10 years ago now and you know she was very athletic there. She didn't smoke. She didn't do anything bad she was active and so I'm like why her. So, yeah, if it's not what you're eating then, it's what you're getting from your environment."

Affordability and Convenience

For these CE consumers the attitudes that surround affordability and convenience are held in tension with their proenvironmental values. These consumers are definitely not looking for the lowest priced option, however cost is a contextual factor that is taken into consideration and providing some level of motivation to the consumer.

Table 9 shows interviewees responses to questions about whether or not cost is a consideration when making the decision to purchase these products.

Table 9

Mentions of Affordability and Convenience

Participant	Age	Example quote
3	34	"Like obviously I had to figure out my budget, and I had to forego on some things just because I can't afford it. But I mean if its reasonable and it's less, less toxic and it works I mean, I'll gladly spend the extra money to do my part in keeping my pet safe and my child safe and try to um…not contribute to this gigantic problem that we're having with all the waste."
4	28	"It's a consideration for sure. We are from a financially stable household, so I don't think that we have the restrictions that other people have, but of course, we wanna be cost-effective. That's one of the reasons I like a lot of these products, is because doing the math out, even for Dropps or for Etee or for whatever it is, it is cheaper, so I do like it for that reason. And they're covering the shipping, so that part's really not a restraint."
5	46	"No and I say that, I mean, that is a very privileged response…but I would rather spend more on a product that is safer for my family."
11	33	"Yeah, definitely…when I was researching around looking at a couple of the different products, they kind of all seemed about the same price range. So yeah, I definitely wanted to be a little bit mindful of that and not go crazy."

Participant	Age	Example quote
12	29	"And so um that was a cool discovery was that it umm...it actually made our lives like easier. So it's better for the environment and it's just... I mean it saved us money it's, I don't know, there's not really a, it's like a win win win situation."

Convenience was not their main driver to purchase, but a secondary factor that solidifies the user's relationship with the product. Interviewees cited that qualities like online purchasing, smaller form factors, ordering concentrates in bulk, subscription, and auto-ship features make these products more convenient than their past purchasing behaviors.

Thematic Analysis of Behavior Change

Five main actions are identified for this user group within a single act of consumption: (1) research, (2) discovery, (3) purchase, (4) use, and (5) post-use. Purchase, use, and post-use were identified as general actions that take place with most acts of consumption. This group made it clear through conversation that research and product discovery were actions that took more effort or provided more of a barrier in some cases than purchase, use or post-use activities.

Research and Discovery

Research appeared in the interviews as the one action that presented itself as a new behavior and sometimes a stumbling block for individuals. Several cases articulate this idea of information overload; examples are provided in table 10.

Table 10

Mentions Information Overload

Participant	Age	Example quote
6	43	"I think they [news articles with pro-environmental messages] pop up. But then once I see it, I'm like, well, is that true, and then I start the fact-finding mission to make sure it's not just internet garbage and then it leads you down the rabbit hole and then it's 2:00 in the morning"
10	42	"I think I like to research things a lot before I dive into them. So I will read and I will read and I will read and then I won't do it and then come back to it a few months later and read about it more, and then finally decide like '*what the hell I'm wasting time let's just do it.*'"
11	33	"And but when I was looking at it. I still was kind of seeing, you know, okay, was like you know phthalates free, but that didn't mean it didn't have fragrance, or parabens, or whatever … so it was really difficult to find one that I felt like really had it all. Like I still don't agree Blueland is the best, but it was like after I was so exhausted of trying to figure it all out and calling myself crazy. I finally made a decision on that one."

While research is not a requirement to participate in these models; many participants are engaging in some level of research and potentially becoming overwhelmed by the process. As it relates to understanding ingredients three individuals make mention of their feelings of *inadequacy* when it comes to understanding product

ingredients and their toxicity. They make statements like, “I don’t know enough about chemicals or chemical engineering to really make an educated decision” or “It’s hard, as someone who’s not a scientist to discern the kind of the noise that comes out.”

Casually related and intertwined to research is the action of product discovery. Many interviewees are participating in research outside of the action of product discovery that informs their environmental values or personal health values. Discovery indicates that there is further action taken to discover products that support their values and satisfy needs. These subjects are aware or are becoming aware that social media and targeted advertisements are supporting and potentially dictating the discovery and research process. One respondent explained how they embrace targeted ads as a tool for discovery:

> I don't think there’s a reason to not purchase this way because everything’s on Instagram. Most of like my baby products and household products…I find via Instagram …maybe it’s a little more work to look for that stuff, initially, but I find that since I started looking for it the advertisements find me…I think when you can find something and it’s on a subscription model or you can just like reorder occasionally like everything is easier, faster, it’s so much more attainable. And there’s just so many good options like the fact that cleaning supplies come in amazing fragrances now is really cool. (Participant 8, Age 40)

Purchase

Subjects are categorized as making purchases either online or in-store. All subjects are making some online purchases, even if only very few. Behavior ranges from that of making purchases online weekly (frequently) to infrequently. Most subjects categorized this online purchasing behavior in general as a convenience. With several noting that they use online shopping services out of convenience when they cannot make

it to the store. This behavior is new to every subject in the generalized aspect that the majority of the brands discussed require purchasing through their independent website. The majority of the purchases discussed with subjects were new purchases from brands they had not previously used. Conversely, in general all subjects had previously purchased products online and therefore no respondents indicated a barrier with regard to purchasing these types of items online.

Upon elaboration many respondents found this particular behavior to be easier and more convenient. This sentiment was particularly heightened with the products that provide auto-ship features—where refills or replacement items arrive automatically on a predetermined schedule. This sentiment was also heightened for respondents using products in concentrate form that can be ordered in bulk and easily stored in a small space allowing the frequency of purchases and frequency of shipments to be less annually.

Use

Each of the three main products discussed have different requirements for the use phase. Blueland products require the added step of mixing or making the cleansing solution; Cleancult products require pouring the refill into the reusable bottle. Of the respondents that are using these products approximately one third were already making their own cleansers, therefore this is not an entirely new behavior for these subjects. No respondents indicated that making the cleansing solution was a barrier to purchasing or using. For some that were making their own products this new process can be easier. Table 11 shows how some Blueland customers noted their sentiments about the process of making the cleansers.

Table 11

Blueland Customer Sentiments About Making Cleansers or Hand Soap

Participant	Age	Example quote
3	34	"I actually really like watching it fizz and dissolve it's pretty. They come in like different color bottles with different color tabs. So that's always like, it's just, it's kind of nice and relaxing in a way to watch it dissolve into a cleaning product."
4	28	"No, it [mixing the product] doesn't bother me at all… I do it and then I walk away, 'cause the tabs dissolve and they don't dissolve right away you have to wait probably 10-15 minutes for that whole big tablet to dissolve…But I'm also from a mindset that to claim I didn't like the 30 seconds and I'd rather just put a bottle in a landfill…I couldn't put a value on that. So to me, I would just… Anything that positively reduces my impact, even though we're far from perfect, it helps me live with less guilt."
12	29	"Blueland enables us to like run out of a cleaner, pop in one of those tablets into the water and then 20 minutes later, like, get back to what we were doing."
13	29	"As opposed to the homemade recipes umm…Blueland is probably a little bit easier just because it's one simple step."

The use phase for users of Dropps is almost exactly the same as users of a laundry detergent pod with a linear business model. No users of the Dropps product noted any behavior changes required in the use phase.

Post-Use

All respondents in this group were previously participating in the act of recycling or composting. Therefore, no behavior change was required in this area. Because these business models exist mainly as online retailers, shipping cartons are a consideration. In this case all three companies use recyclable boxes to ship their products. Users of Dropps noted how they appreciated that the tablets were shipped in a box with no other packaging, the shipping box is the product packaging. Blueland's paper packages that the tablets come in can be composted or recycled. Cleancult's milk cartons are recyclable in cities where carton recycling is available.

No respondents mentioned any barriers to recycling or composting any packaging associated with their products. One respondent described their experience with this new form of laundry detergent in this way:

> There are a lot of products that …haven't turned out to be as good as I thought. As you continue to learn more about like how they are sourced and like looking at different sides with different perspectives, but even just looking at the laundry closet with that giant white jug of Costco detergent next to this tiny little recyclable box of Dropps is a… that's pretty straightforward how much better that is as an alternative. (Participant 1, Age 28)

This quote expresses why for this user and likely others, reduction of single use plastics has become an aspect of conscious consumption that consumers can relate to. Simple observations of one's trash can, recycling can, or laundry room shelf can provide a visual reinforcement of the environmental values that the user holds.

Discussion and Conclusion

Discussion of Findings

Much of the research in the area of consumer participation in the CE shows a high barrier to entry—a lack of consumer adoption of these business models (Camacho-Otero et al., 2018; Singh & Giacosa, 2019). Analyzing the motivations of participatory consumers in a circular business model provides insight into how these consumers overcame any potential barrier to entry. One model that may help describe the journey to participation of many of the interviewees in this group is the *stage model of voluntary behavioural changes* as described by Kaufmann-Hayoz et al. (2012). This model describes motivation to make change beginning in the pre-contemplative phase where:

> a person becomes aware of a discrepancy between the negative individual and/or collective consequences of their current action and any standards or values which are central to the person's self-identity (or their ideal self). Furthermore, the voluntary behavioural change is predicated on the fact that the person is convinced that there are, in principle, alternatives to the current behavior (degree of freedom). (Kaufmann-Hayoz et al., 2012, p. 104)

This is seen in the research and discovery phase described by many interviewees. This group places high value on the environment; in many cases they have labeled themselves as *environmental* or *into the environment*. Examples of this self-labeling are listed in table 12.

Table 12

Self-Labeling as Proenvironmental

Participant	Age	Example quote
4	28	"My husband's also *environmental* and *conscious of things*, but I'm usually the one that's finding whatever company I want to support or not support because of *animal testing* or whatever else."
9	36	"I'm very *into the environment* so the idea of not using plastic bottle. And, you know, it makes things easier its cool to just use the tablet."
10	42	"Yeah, I was really *into* just, you know, *the environment*, I've been vegetarian now pescatarian but vegetarian since I was in high school."

The research phase supports the individual's self-labeling by bringing the individual to a realization that consumption of a particular product is at odds with these values. During the discovery phase, this conscious consumer finds an alternative means of consuming that satisfies their needs and their values.

Kaufmann-Hayoz et al. (2012) define consumer acts with three varying dimensions, (1) consciousness of the act, (2) significance of the act, and (3) freedom to act. The characteristic of consciousness associated with an act of consumption is labeled as *reflected* or *non-reflected*; significance of the act is labeled *essential* or *non-essential*. It is likely the case with FMCG like cleaning supplies that for most consumer the act can be quite non-reflected and non-essential. The purchase can be habitual and made

without much thought. Additionally beyond its functional use the act of purchasing household cleansers or laundry detergent is non-essential (Kaufmann-Hayoz et al., 2012).

The process of applying one's values to a product that used to be a non-essential, non-reflected purchase can be a significant burden in the mind of the consumer. While the consumption act may remain non-essential it can become quite reflected. This burden of making conscious decisions around FMCG can provide a significant barrier to behavior change for individuals and if sufficient motivation in the form of proenvironmental values or concern for personal security is not present adoption may not happen. The findings from this study noted that research and discovery were the only phases where interviewees were making significant changes to their behavior. They have chosen to assess their values and reassess their purchasing decisions based on those values. This process can create information overload and feelings of inadequacy for some consumers causing a barrier to adoption for would be consumers. Fischer et al. (2012) have documented information overload as well highlighting abundance of information, contradictory information, effort required to gather information and the stress and inadequacy involved with the process. Without self-transcendent or self-protecting motivations, the barrier to entry may be too high for some consumers.

The consumers that have chosen to participate in these circular business models are finding the model itself to be just as convenient or more convenient than previous consumption acts. The behaviors in the purchase, use, and post-use phases are similar enough to previous behaviors and the associated actions do not cause a barrier to participation. Therefore, it can be concluded that these particular business models have balanced the consumer's desire or need for convenience and affordability while aligning with their proenvironmental and health related values.

Jackson (2005) identifies the symbolic role that material goods play in our lives. He cites the concept that personal identity is linked to consumption, giving the goods we consume a symbolic value beyond fiscal value. Sometimes this includes what they represent about us to others as in the case of 'luxury goods' but they also represent something to ourselves. In the case of environmentally focused CE consumers the more goods that they can purchase that support this value, the more this value is stoked within themselves. This feeling of affirmation can be enough to cause motivation to consume sustainably.

This concept can play into the desire to reduce single-use plastics. One interviewee in particular noted the strong visuals of plastic pollution, floating garbage patches compelled their desire to consume more sustainably. In this case purchasing plastics, seeing the plastic containers in their recycling bin even are providing a visual connection to photos of an earth in peril. Other interviewees noted how they felt after visually being able to see the difference between their old consumption habits and new consumption habits. This included seeing less plastic in the recycling bin and seeing the large plastic containers of laundry detergent compared to the small boxes of Dropps. These proenvironmental CE consumers could be motivated simply by the symbolism of less. The quotes in table 13 identify some of the visually symbolic motivators respondents identified.

Table 13

Symbolic Role of Material Goods and Identity

Participant	Age	Example quote
1	28	"I still have my two big jugs of detergent from one from Trader Joes and one from Costco. And then little cardboard boxes of the Dropps right next to Them and just amazing How much less space These take. But how much less waste they produce."
4	28	"Just because the visible…Even if they were secretly a terrible company, I can visibly see that I'm not putting more plastic into the recycling bin, so my impact is absolutely reduced."
5	46	"It was partly that, you know, watching your recycling bin fill up And, um, and the fact that here every time I look at something, it was like, well, this can't be recycled. You know, this number can't be recycled and this number can't be recycled, which is really frustrating. And it's especially hard to teach kids how to recycle when…you are…when so much of it can't go into the recycling bin."

Participant	Age	Example quote
6	43	"Ok, so the older I get, the more I am very much conscious of animal testing. It's always it's always been in the background, but the older I get, the more I don't want to purchase things that are tested on animals and then because of that you start seeing the pictures of what all the plastics do and the garbage island and honestly, it really those pictures just got me the you know the polar bear standing on the melting ice and I just, it made me really look at especially this year, just trying to use less plastic less waste more compostable biodegradable everything that's…it as much as I can help with the earth. I'm not perfect by any means I don't have, you know, my own compost pile or anything, but I'm trying to be more conscientious of what I buy and how it impacts the environment."

In the case of Blueland and Cleancult, a disposable often poorly designed bottle has been replaced with something that is durable, can communicate status, or communicate proenvironmental values to others simply by its presence. These reusable spray bottles, dispensers, and jars play a role in the motivation to purchase and should not be overlooked as potential symbols of status among certain groups. The interviewees were contacted because they had participated in some way in the publicly available social conversation around these goods, indicating their status as a conscious consumer.

Limitations

The group of consumers for this study is small, though the interviews were in-depth. Larger surveys could reveal more conclusive statistics to better define this consumer and determine if it is actually several types of consumers that have adopted these brands. In this consumer set household income is relatively high. These solutions

should be accessible to all income ranges, but access to online shopping could be a barrier.

Could these models work at scale? Many businesses rely solely on online retail to distribute their products, but it remains to be seen if this is the proper direction for the scale of these types of solutions. Additionally, there is no discussion in this research around the environmental impact of these products in question. It is assumed (based on product certifications) that the environmental impact of these products is better than their linear counterpart, however that is not quantifiably known.

As previously noted, life cycle assessments show sourcing of palm and coconut oil to be one area where cleaning products, even green cleaning products can have negative environmental impacts. Many cleaning brands—both linear and circular—mention their efforts to source sustainable oleo chemicals, this concern for product sourcing has not been translated to this group of consumers as a motivation to purchase (*General Product Questions – Dropps*, n.d.; *P&G Environmental Sustainability*, n.d.; *SC Johnson to Buy Only Sustainable Palm Oil*, n.d.).

There are observed connections between these business models and social platforms online. Whether or not the social support of online communities plays a role in the adoption of CE business models is beyond the scope of this research. Identifying social media platforms as space where CE consumers can be affirmed and supported could lead to novel business models that promote sustainable consumption.

Conclusions

In conclusion, this research analyzed an area of the CE that has yet to be well documented—consumers participating in FMCG circular business models. Consumers purchasing household cleansers through these models were chosen as a sample group because of the growth in this particular niche area. In depth interviews provided insight

into motivations that cause consumers to participate and any behavior change required to participate in these models. Results showed that this group of consumers are motivated to participate in these models by their proenvironmental values and desire to maintain personal safety balanced with contextual factors like convenience and affordability. This group sometimes self-labels or identifies themselves as *environmental*. Because of this, they can experience frustration when their values are at odds with their purchasing behavior. They can also experience frustration in the research and discovery phase in the form of information overload. The goods they are purchasing can hold symbolic value and speak to their identity as a proenvironmental person. But they can also be motivated by the symbolism of less; seeing less trash, or consuming less. These consumers may even be motivated to share about their sustainable purchases online in order to share their identity as a proenvironmental or safety conscious consumer. When circular business models point to sustainable development, they attract sustainable consumers, that are looking to align their values with their everyday purchasing decisions.

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