Mapping Transitions towards Sustainable Consumption:

Latitudes, Legends and Declinations in the Interaction between Consumer Culture and Sustainable Business Models

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Abstract

This paper seeks to chart "a navigation route" towards sustainable consumption. We draw on data collected in research on consumers' response to integrated products and services bundles conceptualized in design literature as Product Service Systems (PSS). PSS is of interest as it offers potential social and environmental benefits. Such services- based sustainable consumption practices have been neglected by consumer researchers. Methodological approaches to sustainable consumption favoured by policy makers focus research and interventions on individual consumer behaviour, but these have very limited success. Consumer practices, and the role that Government and other institutions play, are a more appropriate conceptual framework to explicate sustainable consumption. However, this Practice Theory approach is not sufficient either; the best solution might be a combination of this with an understanding of the individual value pursued by consumers.

We extend Shove (2010)'s contention that adoption of sustainable consumption practices can only be explained with socio-cultural approaches; we propose that a combination of this perspective with an understanding of the value expected by individual consumers, is a more suitable approach than either behavioural paradigms or practices on their own to map these adoption mechanisms.

Key words:

Access Based Consumption (ABC); Business Model; Consumers; Product Service Systems; PSS; Practice Theory; Sustainable Consumption; Value

Introduction

This paper explores new ways of conceptualizing sustainable consumption practices and, in keeping with the conference theme, seeks to chart a "navigation route" towards more sustainable consumption. Our discourse builds on recent criticisms by Shove (2010) of the validity of the individual behaviour conception of shifts towards sustainable consumption, and the failure of environmental policies aimed at changing individual behaviours. Shove (2010)'s argument questions the idea that consumers can individually adopt sustainable consumption practices, and therefore that policy makers would only need to design interventions based on appeals to individual consumers aimed at modifying their behaviour. This is not sufficient, but neither is an expectation that businesses deliver sustainable consumption just through the introduction of more sustainable technologies, with uptake often being poor. Government intervention needs to be more systemically active, such as investing in relevant supporting infrastructure and influencing the behaviour of businesses even more than that of consumers. Our discussion draws on data collected on a research project funded by the UK *Department of Environment, Food and Rural Affairs* (DEFRA) on the response of consumers to a provision of a service system with potential to reduce environmental impacts. This is a study of baby and nursery equipment, such a pushchairs, together with service elements, which overall could be accessed as a service.

Research on sustainable consumption in marketing and consumer research has tended to focus on so called "green products". So, in the case of baby and nursery equipment, such an approach might be encouraging the production and purchase of baby buggies made of more sustainable materials and designed for end-of-life recycling. An alternative approach, of sustainable consumption based on services replacing products has been neglected by consumer researchers

(Peattie and Peattie 2009). Building on the work conducted by Bardhi and Eckhardt (2012), Catulli (2012) and Catulli et al. (2013) we explore solutions consisting of integrated products and services bundles which have been conceptualized in the design literature as *Product Service Systems* (PSS). A PSS is a:

"System of products, services, supporting networks and infrastructure that is designed to be: competitive, satisfy customer needs and have a lower environmental impact than traditional business models" (Mont 2002:239).

So, in the case of baby and nursery equipment, this could take the form of a contract that provides a larger buggy as the child grows. Each buggy would then be used, in turn, by many parents, minimising the number that need to be produced and so systemically reducing environmental impacts. PSS includes a variety of provision where the customer uses a product without ownership. An existing example in consumer markets are city car clubs – the provision of cars on short-term hire, as for example in the case of Zip Car (Bardhi and Eckhardt 2012). In 2012, Zip Car had an income of $279 million and 810,000 members in five countries. However, although a successful company (sufficiently to be taken over by Budget in 2013), all car clubs have only an aggregate 0.4% market share in the EU and 0.3% in the USA (Catulli et al. 2013). Another example is bicycles supplied for short-term rental in various European and US cities, such as for example the Barclay Cycle Hire scheme in London, which have been developed as part of urban sustainable transport policies.

The reason for the topicality of PSS is that some researchers e.g. (Giarini and Stahel 1993; Hawken et al., 1999; Manzini and Vezzoli 2003, 2005; Mont 2002) claim that they offer potential social and environmental benefits. Environmentalists and policy makers alike have

therefore advocated the use of PSS in consumer markets. However, as noted above, the diffusion of PSS alternatives to private ownership has been very limited. Our research question is therefore: how do individual attitudes and socio-cultural factors interact to drive the adoption of sustainable consumption practices such as that of accessing Product Service Systems?

Our contribution is an extension of Shove (2010)'s contention that the adoption of sustainable consumption practices can only be explained with socio-cultural approaches. We propose that a combination of the two perspectives, a social-cultural approach combined with a perspective to the value expected by individual consumers, is more suitable than either behavioural paradigms or practices on their own to map these adoption mechanisms.

Products, Services and Sustainability
As noted previously, there has been an emphasis on the marketing and use of "green products", supported by alternative "green" technologies. The viability of these has been challenged by academics because of:

- the speculative nature of these "Cleantech" propositions, exemplified by the failure of electric cars to obtain a significant market share;
- the environmental and social impact of activities along the supply chain of a product upstream (e.g. extraction of raw materials, in manufacture and distribution) and downstream (e.g. in disposal); and
- the possibility of consumer rebound effects, where energy efficiency improvements would be offset by greater consumption (Manzini and Vezzoli 2003; 2008) and increases in energy efficiency could actually lead to increased carbon emissions (Herring and Roy 2007).

The alternative to this "product driven" approach therefore is one of integration of products and services, and these have been conceptualized in the design and engineering literature as PSS. These have been classified into categories varying from three (Cook et al., 2006) to eight (Tukker 2004) depending on their blend of tangible and intangible components; all have in common the feature that the tangible product itself is not key to this concept, but the final functionality of PSS (Tukker 2004), in line with the *Service Dominant Logic* of marketing proposed by Vargo and Lusch (2004), who see the product as merely a support for the provision of a service.

Although it should not be seen as a panacea to resolve environmental problems (Mont 2002; Tukker and Tischner 2006) PSS does offer a number of potential social and environmental advantages. For example, it makes it easier for suppliers to maintain control on and responsibility for tangible products for the duration of their life cycle, and comply with their end of life responsibilities (Mont 2002). Suppliers can also influence users towards responsible uses of products (Lee et al. 2007) with governance methods including both incentives and "big brother tactics" (Bardhi and Eckhardt 2012). An important effect is that manufacturers have incentives to design products with longer life cycles (Manzini and Vezzoli 2003; Mont 2002) and leasability, with processes to reuse, refurbish and remanufacture them to extend their life cycle, to collect revenues for longer terms (Lindahl et al., 2014). As in the Zip Car example, PSS providers are able to encourage users to select more sustainable innovations such as Toyota Prius hybrid cars (Bardhi and Eckhardt 2012) or to customize to variable need (e.g. not buy a large car to cover all purposes, but loan from a car club the size of car needed for a particular journey); PSS also encourages communication between supplier and customers, leading to improved learning relationships (Mont 2002), so to enhance businesses' customer retention (Kimita et al., 2009;

Mont 2002); it provides a "pay per use" scheme (Manzini and Vezzoli 2003) and facilitates inclusiveness and affordability for less advantaged consumers. Research on PSS generally claims that these provisions deliver pure functional value. However, consumption theories claim that purchasing and consuming products also involve symbolic, hedonic and exchange as well as functional value (Graeber 2001; Richins 1994a, b) and PSS alternatives may fail to provide such meanings to users.

Individual behaviour and sustainable consumption
Sustainable consumption can be defined as patterns of decisions towards selecting sustainable products and services informed by consumers' personal orientation and set of pro-environmental values (Moisander and Pesonen 2002). There is no consensus on the ability of consumers to adopt more sustainable consumption habits, including using "greener" products and consuming less. Governments, the UK Government in particular, invest in institutionally driven behavioural change programmes targeting individual consumers, as well as costly research programmes on consumer behaviour and concentrating research efforts on consumers. This is based on the assumption that such a change is predominantly an issue of individual consumer responsibility, associated with a corresponding individualist approach to the research of sustainable consumption, often underpinned by "traditional" marketing approaches. The responsibility for any change towards sustainability is therefore attributed to individual citizens, rather than stakeholders such as business, Government and other institutions (Shove 2010; Spaargaren 2011). This has encouraged research on psychological and behavioural approaches to the problem (Shove 2010). One example of these approaches favoured by policy makers is the positivistic psychological framework known as Ajzen (1991)'s *Theory of Planned Behaviour* (TPB), "a theory designed to predict and explain human behaviour in specific contexts" (Ajzen

1991:181). TPB is preferred by "traditional" marketers and policy makers because it claims to explain and predict purchasing intentions (Ajzen 1991; Kalafatis et al. 1999; Staats 2003), and can be applied to fields such as the purchase of green products and a variety of pro-environmental behaviours such as recycling, household waste prevention, water conservation, energy saving, changing travel mode and the adoption of sustainable technology. TPB includes factors such as behavioural intention, motivation, perceived behavioural control and social influences through a factor dubbed "subjective norm" (Ajzen 1991). Subjective norm also includes personal feelings of moral obligation, so in some respect it is connected with self-identity.

However, sustainable consumption is too complex a problem for marketing alone to tackle (McDonald et al. 2012). The ethical, or "green" consumer is an elusive character (McDonald et al. 2012; Rettie et al., 2012), confirming Shove (2010)'s and Spaargaren (2011)'s concerns. TPB and other types of positivist perspectives have been criticised, because they require a great deal of interpretation; human researchers are fallible and can be unintentionally or intentionally selective with data (Stainton-Rogers 2006) and there is a *"lack of descriptive depth in positivistic studies"* (Davies and Fitchett 2001:12) which *"...fail to adequately represent the phenomenological basis of consumer research"* (Davies and Fitchett 2001:238).

TPB is an individualistic approach based on cognition and on the important assumption that behaviour is based on rational choices (Gredig, et al., 2007), and does not include social and cultural factors, nor macro-sociological factors (Gredig et al. 2007) or socio-economic factors. Altruism is a poor predictor of behaviour, whilst attitudes towards personal consequences of adopting a behaviour are a much better predictor (Cook et al., 2002). This helps explain the value – action gap, also called "attitude – behaviour gap" (Rettie et al. 2012; Sudbury Riley et al.,

2012), where consumers express conformity with sustainability values but act differently (Shove 2010; Spaargaren 2011), as the values declared by respondents do not result in the expected action. Finally, responses to surveys based on TPB can be affected by a "social desirability effect", i.e. some participants give answers they feel are socially desirable instead of what they really think or feel (Kalafatis et al. 1999). The attraction of positivistic methodologies can be seen in their claims of predictive power of purchasing intention of consumers (Kalafatis et al. 1999), as well as the political reasons mentioned above, but they leave questions open of why sustainable consumption habits are not adopted and are limited to small market segments (Spaargaren 2011). These research logics focused on the behaviour of consumers or individuals have not helped policy (Shove 2010).

Shove (2010)'s and Spaargaren (2011)'s criticism of the individualistic nature of TPB also extends to other non-positivist individualist approaches. All these assume that responsible individuals have the ability and the knowledge of making a choice, and that it is possible to get "damaging individuals" to change their habits. This is in line with the view that responsibility is the consumers' and not that of other actors'. Governments and other institutions within this conception are seen as enablers who can induce people to make environmentally positive decisions and avoid bad decisions. But changes to achieve sustainability cannot be reduced to individual choices about behaviour (Watson 2012). Consumers' choice in matters of sustainable consumption is dramatically affected by their lack of knowledge and the complexity of value chains. A case that exemplifies this is the 2013 example of the adulteration of meat products with horse meat in the large scale food distribution of the UK. Following complex and tortuous routes, this meat found its way to top UK grocery brands, without consumers knowing (Lawrence 2013). Similarly, consumers would not be able to verify any claims made on the

sustainability of any given product. This deflects attention away from institutions, but sustainable consumption is not only a problem of human behaviour reducible to individual consumption (Shove 2010); therefore, in spite of the proposition that sustainability needs changes in behaviour more than new technology, interventions in behaviour have not had much success (Shove 2010). One of the causes of this seems to be the above mentioned "value-action gap" (Kalafatis et al. 1999; Shove 2010). Although TPB does address the value - action gap (Kalafatis et al. 1999), a wide body of research indicates that attention should be shifted away from individual responsibility and towards the role that institutional actors play in affecting the shape and fabric of daily life (Shove 2010).

A Practice Theory approach offers an opportunity to map realistic pathways towards sustainability. The model of Shove et al. (2012) accounts for the role of socio-cultural factors, resources (materials), infrastructure and competences. So consumers, for example, in order to become practitioners of mobility on bicycles, need support from policy makers to set up an infrastructure – safe cycle routes, to protect cyclists from accidents. A socio-cultural change is also necessary, so that pedestrians and motorists accept cyclists as bona fide users of the road. Thus giving responsibility for transition towards this mode of transport to consumers only is inadequate. This calls for a major reconceptualization of sustainable consumption. The examples suggest that consumer practices are more appropriate as a conceptual framework to explicate sustainable consumption than consumer behaviour.

However, this Practice Theory approach also has limitations. Practice Theory tries to blend individualistic approaches, such as neoclassical economics, methodological individualism, symbolic interactionism, and game theory, with "totality" theories, such as Marxism, *System Theory* and *Functionalism* (Schatzki 1996). However it does move the attention down from

conscious ideas and values to the physical and habitual, or routines (Reckwitz 2002); it de-emphasises what goes on in the heads of actors, be they individuals or collectivities (Swidler 2001). This is far from helpful to marketing practitioners, concerned as they are with devising communication programmes to recruit new practitioners of these novel consumption practices. *"No theory of practice can be a sufficient basis for understanding human behavior"* (Barnes 2001:18). Consumers when making decisions follow patterns to pursue practical and financial benefits, as well as emotional ones, for example they seek self expression and affiliation to social groups (Catulli 2012). If individualistic approaches such as marketing and combined approaches such as PT cannot explicate transitions towards service driven consumption behaviour, we propose that a combination of these two approaches can assist in this endeavour.

Consumers, Values and Segments
We start from "meanings", one of the elements proposed by Shove et al. (2012), to suggest ways in which researchers can "look in people's heads" and explicate the motivational factors which induce consumers to act, such as values (Grunert and Juhl 1995), enduring beliefs "that a specific mode of conduct (i.e. instrumental value) or end state (i.e. terminal value) is personally or socially preferable to an opposite or converse mode of conduct or end state" (Rokeach 1973:5). Academics have proposed universal values which can be relevant across cultures, e.g. as Rokeach (1973)'s and Schwartz (1992)'s frameworks. In this paper however we adopt the stance of Thompson and Troester (2002) and take the view that values differ greatly between consumer segments. We are particularly interested in pro-environmental values, adopted by specific consumer groups such as the *Voluntary Simplifiers* (VS) (Craig-Lees and Hill 2002; Shama 1985), the *Downshifters* (Etzioni 1998), and *Green consumers* (Fotopoulos and Krystallis 2002; Shrum et al., 1995). These pro-environmental values might guide consumers towards

transitions to sustainable business practices such as use of products on access designed by suppliers as PSS. We also expect that these practices can be supported by *communities of practice*, groups of people who share a craft and / or a profession (Wenger, et al., 2002), i.e. that consumers learn practices from experts, their peers and suppliers, and are conditioned in this learning by existing infrastructure. In the next section we explain the method we have used to explicate these interactions.

Method

We use data generated by an action research project funded by the UK *Department of Environment, Food and Rural Affairs* (DEFRA) to explore whether we can identify examples of the combination of systemic practices and individual perspectives. The project has the objective of the design of a pilot service provision featuring maternity equipment for 100 families in the UK. The method used to investigate participants response is constructivist and qualitative, and includes:

- Five focus groups where the respondents were mostly expectant women and mothers of young children, 26 women in total, with four men included in two of the focus groups;
- Ten semi-structured in depth interviews of expectant women and mothers of young children.

The respondents were drawn from a population of members of the *National Childbirth Trust* (NCT), a charity which runs parental classes and offers general advice on childbirth and parenting. They were a quite homogeneous group, young professionals from mixed ethnic backgrounds within ages between 22 and 38. Posters reproducing parents using the products were used in the focus groups to stimulate discussion, and simulate a real provision. Focus

groups and interviews were recorded and transcribed, the analysis conducted with the support of NVIVO software; neither interviews nor focus groups were filmed as this was found to cause tension among the participants. Ethics clearance was obtained from the *University of Hertfordshire*'s Ethics Board.

Culture and Practices in the maternity equipment market
In the above sections we have suggested that the systemic Practice Theory approach proposed by Shove (2010) needs to be integrated with individual perspectives on meanings and value. In this section we use evidence from our data to test whether this is the case.

Banister and Hogg (2006) suggest that early parenthood is not a time when consumers make decisions based on their individual judgement, supporting the proposed framework of Shove (2010) and Shove et al. (2012) to explicate changes in consumption. New parents call on the help and advice of formal and informal social support networks (Banister and Hogg 2006). These informal networks include grandparents, extended family and siblings who can be a source of competence and skills related to parenting practices, advice on what products and services to buy and use, as well as a pool of pre-used products such as push-chairs, which could be an alternative to the purchase of new products or to a maternity equipment PSS. Formal networks can be both off line and on-line. New parents seek assistance from expert providers, such as Health Service advisers and midwifes (Catulli et al. 2013), as well as information from various other sources, including on-line forums, help sites and help lines,

> "*I had really fantastic midwives and that was the kind of stuff that I was able to ask them, they really give a lot of input and said, 'This is what people use and this is what they think,'*" (Female Respondent)*;*

"I went and saw a private midwife and she actually could do the concierge service and actually try to source certain things for me…" (Female Respondent).

Service providers such as midwifes and health visitors can be perceived as repositories of expert knowledge, and therefore be seen as a part of a community of practice. For example:

"I would feel a lot better if say for example the service was affiliated to a nursery and I could actually look at the thing, examine it, before I take it away and you trust them so if we (needed) a travel cot, I could totally see if the nursery said "oh well you know, we've got travel cots, if you're ever going away for the weekend, that you can hire for like £5", I think that's a good idea" (Male respondent),

This mix of expert and "peer" group sources can therefore be seen as an institutional support service.

A service system supported by an infrastructure such as a network of nurseries was seen by participants as particularly attractive, and could affect positive decisions towards sustainable service innovation. It can be suggested therefore that changes in practices are co-directed by these institutional actors rather than only by consumers and interventions on individual behaviour would not be appropriate.

Parents also learn practices from other parents, through parents groups, for example:

"I've got a group of friends who I met through my antenatal classes so we all had our first children at the same time and you're going through everything at exactly the same time, 'My baby's not sleeping, my baby's not doing this, they're doing that,' you are talking about the products and some of them will be on the internet for hours on end researching things, and then you all talk about the products and what you've found so that's like my peer group almost" (Female Respondent).

They may also learn practice through virtual environments:

> "*Online forums are my favourite place…because mums have most of the things in it, they are the best placed, any question is usually answered under it and people have done their own bit of research, everyone has done this, so all the research comes into one place into pregnancy forums …*" (Female Respondent).

These real life and on line communities can stimulate and support the adoption of new practices, and encourage the uptake of new service driven solutions. The UK's NCT's (www.nct.org.uk) parenting classes and help groups can be a place to exchange tips on childbearing practices. Mumsnet (www.mumsnet.com) offers on line forums and product advice based on rigorous testing; ideally the same resource could be used to endorse PSS solutions. Consumers can therefore draw support from communities of childbearing practice. In spite of the help and information available, purchasing maternity products still appears to be a trial and error practice, as there is some evidence that parents make some unnecessary purchases. For example:

> "*when my kid has reached 2 years old and she started walking when she was 8 months which is quite early, the pram is under the stairs now, there's absolutely no use, it's brand new, it's still got the covers on and I don't feel like selling it because I wouldn't get half the price because it's second-hand*" (Female Respondent).

This is wasteful of resources and also presents storage problems:

> "*… you have to find somewhere to store them and my house is a cottage and it's got no storage whatsoever. And my pram that I've got is a Mamas and Papas one so it's quite*

big, and once a child gets older and heavier, it's going to have to go in a stroller…"

(Female Respondent).

So, as children grow, parents encounter problems with acquisition of replacement products and disposal of little used old ones. The mechanism that causes consumers to buy products which are at time not suitable and even duplicates might be a tendency to buy on impulse, when these products have a potential for identity expression, especially if said consumers have materialistic values (Dittmar and Bond 2010). This therefore suggests that in spite of practices informed by sharing with peers and supported by institutional players as suggested by Shove (2010) and Shove et al. (2012) consumers are also driven by individual values which might be in conflict with these cultural practices, as they seek to obtain symbolic and hedonic value from the products and services they use. For example:

"Bugaboo's and the premium brands you probably do feel quite good pushing that pram thinking, 'Yeah, this is a really good pram for my child,'" (Female Respondent),

"I think you would still be a bit image conscious, you know, if you didn't really want something that looks like it's two models past or like you are the hundredth person who is using it, it does still need to look quite decent" (Female Respondent).

So this seems to confirm that the Practice approach might be an insufficient framework to explicate changes towards sustainable consumption, and this would need to be informed by an understanding of the dynamics that inform the value required by individual consumers.

There is evidence however of a gap for a more rational, functionally driven service based provision such as a PSS based on maternity products. Participants seemed to be interested in a

PSS providing a seamless service where products were "automatically" replaced as children progressed through ages:

> "*OK, this costs £100 in the shop, we'll give it to you for £40 for six months, we will service it, and at the end of that six months we will take it away, there is another version that your child can use from six months on and because you've already paid £40 we'll give you that one for £30 when you take it on next time*" (Male Respondent).

This was seen as particularly attractive even for car seats*:*

> "*that is a brilliant one because you use a certain one from age X to Y and then you swap out and use a different one. If you had a service where they reminded you when baby was coming up to say, nine months and actually prompted a swapping and it's just seamless…*" (Male Respondent).

All this suggests an interest of participants in systemic solutions and at the same time in individualised attention to functional value such as financial and space saving, as well as individual symbolic value conferred by the use of fashionable maternity equipment.

Social responsibility
Parents might be influenced by communities of practices to take an interest in social and environmental causes; a few respondents expressed an interest in these issues:

> "*I'd feel good that I was doing something good for the world, not just putting something into landfill or buying something for the sake of it*"; "*Yeah, so having a sort of 'If you do this, you are saving this much resource', it would interest me …*" (Male Respondent), "*…parents have concerns about the environment, sustainability, recycling, and all those*

things which we are all aware of and so I would see some added value for the brand if there it was something we were involved in and it was a model that worked for everybody" (Female Respondent).

The same parents seemed also to be interested in social benefits, for example they were concerned that not all parents are able to afford quality, safe products for their children and they saw a maternity products PSS which could be paid for with monthly instalments as possibly helpful for disadvantaged families:

"*…you see some people with pretty dodgy buggies out there and if that means people can afford a good quality buggy at a really good price then that would be really good, that would be the number one thing*" (Female Respondent).

This might be seen as evidence of these participants belonging to special consumer segments such as the *environmentally concerned consumers* and others mentioned above, so their interests might be driven by individual values. If it could be demonstrated, however, that this interest of parents in social and environmental issues is informed by the formal and informal networks described above, then this would be some evidence of the relevance of the interplay we are proposing between individual values and requirement for functional, symbolic and hedonic value and systemic consumption practices. The analysis of our data unfortunately unearthed few participants' statement mentioning the sustainability features of PSS.

Conclusions
We have investigated the likely adoption of PSS in the baby products market, and adopted a hybrid conceptual framework involving Practice Theory, a socio-cultural approach, and a more individual examination of value that parents expect from these access-based provisions. The

data seems to suggest that the adoption of practices in this context is very much influenced by expert advice, hence linked to infrastructural elements such as the NHS (the UK health service) and independent structures such as nurseries and parental courses providers, such as the NCT, as well as social networks such as Mumsnet. These "top down" influences by experts and other influential sources are complemented by bottom up influences such as peers, i.e. other parents consumers relate to in the real or virtual world, and immediate and extended family. This encourages us to confirm the validity of Shove (2010)'s suggestion that not only sustainable consumption practices, but even health and safety practices in this context are affected by communities of practice, for example with advice on what type of product is the safest, and how it should be bought. Therefore a pure individual approach to behavioural change attempted by policy makers would probably not work well. However, our analysis also suggests that this conceptual approach is not sufficient to predict consumer decisions: the parents interviewed in group and individual interviews seem to combine these "decisions to sign up" to practices with more individual factors, varying from very individual cost and space saving considerations, to concerns for self-image which made these consumers concerned with fashion value of the products they purchase. This means that the value that consumers would seek from a maternity product PSS is not only functional, but also symbolic and hedonic. Together with very psychological concerns for health and safety aspects, this suggests that a socio-cultural approach such as that proposed by Shove (2010) is certainly useful to predict and explain transitions to sustainable consumption practices, but it needs to be combined with research approaches that characterize the individual value that these consumers seem to require.

Directions for research

Having seen that only a small proportion of the participants to the project expressed an interest in the sustainability implications of service driven business models like PSS, more research is needed to confirm and profile these segments, including their demographic characteristics, the values they are motivated by, and the value that they expect from an ideal PSS. Research should then identify strategies to reach them and give them a role of "lead users" or "influencers" to promote the role of service driven provisions such as that investigated in our research. More research is also needed to confirm the observed importance of communities of practice in the decision processes of young parents, in particular in their interest in social and environmental benefits. Both objectives could perhaps be pursued using quantitative analytical techniques in order to confirm our findings; for example the suggested segments could be profiled and quantified with clustering techniques, and questionnaires could aim at investigating the importance of communities of practice in shaping these consumers' consumption practices.

Limitations

The main limitations on the research reported in this paper include the typical ones of case study method, for example the data is context specific and sample limited, so that findings from this research cannot necessarily be generalised. In addition the data is generated as part of an action research project, involving innovations the survival of which in the real market is difficult to foresee (Johnsen & Normann, 2004), hence they are even less comparable than a case study involving a "mainstream" company (Kocher, Kaudela-Baum, & Wolf, 2011; Mehta, Pancholi, & Shukla, 2004).

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