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# Understanding the customer benefits of customisation: Case surfboard

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## ABSTRACT

Customisation is one strategy to involve customers in the design process. However, qualitative empirical studies on customisation in different product contexts are scarce. This paper investigates the benefits customers perceive in craft customisation where they are actively involved in the customisation with the designer. The case of this study is a high involvement custom product, a surfboard. Findings derived from qualitative interviews with surfers (N=22) reveal the perceived benefits in the three distinct phases of customisation: pre-customisation, during which the decision to customise is made; customisation process, during which the product is customised; and product usage. The source of the found benefits are the product, process or customisation itself and they can be classified to *functional, emotional, experiential, symbolic, aesthetic, personal, social, epistemic, creative, and hedonic*. The benefits vary in occurrence during the different customisation phases. Based on the findings, we present a model for the benefits in the three phases of customisation. The model can be used when implementing craft customisation as a design strategy.

**Keywords:** customisation, benefits of customisation, phases of customisation, high-involvement product, surfboard.

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## Introduction

Over the last decades, a considerable effort has been put into providing positive experiences for users when they use products or services. Experience design approaches emphasise appreciation of users and their needs (Hassenzahl, 2010). End-user involvement is a central aspect in the design process so that a product or service has the features the user needs and wants (Weightman and McDonagh, 2003; Keinonen, 2010).

Customisation is one strategy that allows customers to take part in the design process and transfer their needs and desires into a concrete product specification. Blom (2000, p. 313) defines customisation "as a process that changes the functionality, interface, information content, or distinctiveness of a system or product to increase its personal relevance to an individual". There are different forms of customisation. In mass customisation, the individual customer can modify certain product features at costs roughly corresponding to those of standard mass-produced goods (Piller and Müller, 2004). In *craft customisation*, the user is actively involved in the creation of the product with the designer: The product is not only created by the designer who interprets the users' needs and transfers them to the product features, but the development happens in co-creation. Co-creation and user in-

volvement eliminate the risk that designers' misinterpretation of users' needs leads to wrongly transferred product features. Co-creation is a way to meet the needs of each individual user with regard to certain product features (Weightman and McDonagh, 2003; Piller, 2007). In addition, customisation is a way for users to decide what a product is to them rather than for the user to adopt a given product (Jung, 2013). This user empowerment is a shift towards shared ownership of the design process in which the designer's role changes from 'an only expert in design' to that of 'a facilitator of the design process' (Weightman and McDonagh, 2003; Siu, 2003; Sanders and Stappers, 2008). The logic behind the customisation strategy seems straightforward – users will be more satisfied because who better than the users themselves know what kind of product they want or need?

To date, customisation research has tended to focus on mass customisation leaving other customisation strategies such as craft customisation under less attention. In addition, most studies on the topic of customisation have involved experimental research in non-authentic customisation situations where participants have been asked to customise the product and estimate the consequent benefits (Damm *et al.*, 2013; Fogliatto *et al.*, 2012; Piller, 2004; Piller and Müller, 2004). Thus, there is a lack of empirical research on the phases of customisation, starting from the

decision to purchase a custom product through customisation process to the actual use of the customised product. Findings on the central effects of customisation such as user benefits should be based on real product usage information, not on hypothetical questions (Schreier, 2006). In addition, when evaluating usefulness of customisation strategy, understanding users' expectations is fundamental, particularly their readiness to adopt customisation (Ferguson *et al.*, 2010) and demand for customised products and services (Piller and Müller, 2004).

The present study aims to fill the gap in knowledge of the phases of customisation and the related user benefits. The topic is approached through an empirical, exploratory research to help understanding the usefulness of customisation as a design strategy. The study is based on real life experiences of the users' benefits of custom surfboards. A surfboard was selected as the case product because it is a high-involvement product and users (i.e. surfers) are familiar with customisation in this product context. A high-involvement product denotes a major and unusual purchase with great importance to end users (Bauer *et al.*, 2009). The attributes of such a product can only be verified and evaluated by using the product, therefore, effective satisfaction judgment can only be made after a considerable period of usage experience (Gammack and Hodkinson, 2003; Endo *et al.*, 2012). The contributions of this paper are insights on the benefits of customisation and the model for the phases of customisation. These results can be taken into account when further studying or implementing customisation as a design strategy.

## Background and related research

### Strategies to customise

Customisation can occur at various points in the production chain from design and fabrication to sale and delivery (Davis, 1989). In this paper, the focus is on the customisation strategies implemented during the early phases of the production chain, the design phase. As the point of customer involvement provides a practical indicator of the relative degree of product customisation, the earlier the customer is involved, the higher a degree of customisation is possible (Duray, 2002).

Lampel and Mintzberg (1996) present a continuum of customisation strategies that is based on the user's involvement and the consequent degree of customisation. The low level of user involvement without any customisation possibilities is termed pure standardisation (i.e. mass production). At the next level that is called customised standardisation or mass customisation (MC), the customers co-design the product and transfer their needs into a concrete product specification by defining and configuring an individual solution from the given options (Lampel and Mintzberg, 1996; Piller, 2007). The next level is tailored customisation or craft production in which a product prototype is tailored to the individual user's wishes and needs (e.g. a tailored suit) (Lampel and Mintzberg, 1996; Weightman and McDonough, 2003). The designer and the craftsman who will produce the product are often the same, and the manufacture is likely to demand craftsmanship and handiwork.

Finally, at the other end of the continuum there is pure customisation or custom manufacture indicating high levels of customisation (Lampel and Mintzberg, 1996). Customer's wishes infiltrate deeply into the design process itself – the product is designed in collaboration between the customer and the designer and the product is truly made to order (Lampel and Mintzberg, 1996). The customer can also be the designer and create the product himself in a do-it-yourself (DIY) fashion (Kuznetsov and Paulos, 2010).

### Defining customised products

Customised products have both the attributes of high-involvement and experience products. High-involvement products are major and seldom made purchases that are of high importance to customers (Bauer *et al.*, 2009). These products are found to have attributes such as uniqueness, quality, sensory appeal, sign value, and they may have a facilitative role in helping consumers reach important goals (Martin, 1998). Particular to experience products is the fact that they have quality attributes that are not easily observed and can, therefore, be verified and evaluated only after purchase by using the product (Endo *et al.*, 2012). The purchase of high-involvement experience products is challenging as customers cannot fulfil the need for the personal, physical and sensorial experiences of the product prior to purchase (Molesworth and Suortti, 2002).

### Benefits and costs of customisation

Consumers buy products due to the benefits that will satisfy their needs or personal values (Lai, 1995). The need for a customised product is often born out of dissatisfaction with a standard product and the aim to avoid its negative attributes (Michel *et al.*, 2009; Bauer *et al.*, 2009). However, customers are not merely purchasing customisation, the product or service in question needs to have added value (Pine, 1993). Schreier (2006, p. 323) conceptualises the value composition and argues that "the consumer might benefit from (1) the functional benefit, i.e. the better fit between individual needs and product characteristics, (2) the perceived uniqueness of the self-designed product, (3) the process benefit of meeting hedonic or experiential needs by 'doing it oneself' and (4) the 'pride of authorship' by having designed the product oneself". Bauer *et al.* (2009) typology of the potential benefits of mass customised offerings has two main sources for value: the product and the customisation process. Product-related benefits are functional, holistic, aesthetic, symbolic, and emotional, and the process-related benefits are epistemic, hedonic, and personal. Similarly, Merle *et al.* (2010) show that mass customisation value is polymorphous; there are five dimensions that are related to the product –utilitarian, uniqueness and self-expressiveness values –and two which are related to the co-design process – hedonic and creative achievement values.

The additional benefit through customisation can be perceived as greater when customers feel they have contributed more to the result (Franke *et al.*, 2010). Mugge *et al.* (2009a) showed that the effort invested during the customisation process strengthens the emotional bond

with the product directly as a result of the time invested in customisation and indirectly via the product's self-expressive value. Furthermore, Franke *et al.* (2009, p. 103) results indicate that "the benefits of customisation are higher if customers have a better insight into their own preferences, a better ability to express those preferences, and greater product involvement". In a study by Jafari *et al.* (2015, p. 89) "just being part of an innovative process" was a stimulating factor in participating in co-design. In addition, the opportunity for self-discovery, developing relationships with the retailer, attachment to the product, and manifesting the customisation journey through using the product were of importance. Jafari *et al.* (2015, p. 89) concluded that "involving consumers in customisation processes is a viable and promising avenue for retailers to take on a new role in relation to consumers".

Acquiring a custom product comes with some costs. The main cost is the price premium in comparison to a standard product (Khoddami *et al.*, 2011). Other costs are the (cognitive) effort of being part of the co-creation (Franke and Piller, 2003; Dabic *et al.*, 2008; Blecker and Abdelkafi, 2006), the time investment to take part in the co-creation and the time needed to wait for the customised product (Bauer *et al.*, 2009; Dabic *et al.*, 2008). According to Blecker and Abdelkafi (2006, p. 14), the cognitive effort of co-creation results from "the limited information processing capacity of humans, lack of customers' knowledge about the product, and customers' ignorance about their real individual needs".

## Research design

The aim of the study was to investigate the benefits of customisation in a real life context guided by the research questions: What kinds of benefits are expected and perceived from customisation during the different phases of customisation? A case study approach was used to conduct this exploratory study with semi-structured interviews as the main data collection method.<sup>1</sup> For the purposes of qualitative exploratory research, open questions allow the interviewees to express their general ideas and experiences without restricting their responses to predefined choices (Terre Blanche and Durrheim, 1999) and, therefore, allow researchers to gain a rich understanding of the topic. To make it easier for the respondents to talk about their boards, they were asked to show them, if possible. Pictures of the boards were taken with the participants' consent.

## Product: The surfboard

A surfboard is a sporting good that can be described as a hedonic, high involvement and complex product (Gammack and Hodkinson, 2003). Finding the right board is a complex process that demands that surfers not only reflect on their own skill level and style of surfing according to the board's capabilities but also to consider, for example, their physical aspects (e.g. fitness level

and weight), and the surfing location (e.g. the wave type and size) (McCagh, 2014). The criteria to consider when purchasing or designing a surfboard were found to be in the order of importance: shape, cost, weight, fin design, the number of fins, durability, appearance, and shaper and board/fin material (Audy, 2007).

When purchasing a custom surfboard the surfer's potential lack of board design knowledge is compensated by the knowledge of the shaper. Shapers aim to provide customised experiences and this is an essential part of generating positive consumer aspirations and building a particular brand of surfboard (Gammack and Hodkinson, 2003; Warren and Gibson, 2014). Experienced shapers may develop an iconic reputation as artists, craftsmen, and even gurus in the surfing community (Warsaw, 2003; Warren and Gibson, 2014).

The surfer provides the shaper with the general details of the desired board which the shaper then considers in relation to the customer's ability, body size and weight, and the types of waves he rides when specifying the board (Warren, 2012). The shaper mixes the complex board design variables together in order to produce the "magic" board sought by all surfers (Gammack and Hodkinson, 2003, p. 83). In addition to hand-shaping, many workshops and companies utilise computerised shaping to replicate their most popular models and these surfboards can be bought "off the rack" (Warren and Gibson, 2014). Some workshops offer surfers a website board ordering service where the customer fills in a form or sends an e-mail specifying their requirements. The extent of customisation of these boards is often lower than for face-to-face orders – the surfer basically just selects from existing designs (Warren and Gibson, 2014).

A regular recreational surfer may consume two or three surfboards a year (Warren and Gibson, 2014). Thus, there is great commercial potential in understanding the benefits of the customisation of surfboards as surfing is practised by millions of people around the world (Warsaw, 2003) and the surfing industry is worth over \$6 billion alone in the US (SIMA, 2011).

## Participants

Convenience sampling was used (e.g. direct contact at the beach, and snowball sampling) to recruit 22 participants in two locations: 16 (two female) in New Zealand and 6 (one female) in Finland. The two locations were selected with the aim of collecting versatile data: The differences are posed by the climate and the geographical locations and by the status of surfing and the number of surfers in the regions. In New Zealand surfing is an established sports hobby that was introduced to the country in 1915, with thousands of hobbyists taking part nowadays (Swarbrick, 2016). In Finland, the first surfers surfed on Finnish waves at the end of 1990. At the time of the study only around 100-200 people were surfing in Finland although the number is more for Finnish people who surf abroad.

<sup>1</sup> Nurkka and Jumisko-Pyykkö (2014) used the same case study data to study the potential of applying online customisation to surfboard manufacturing. Thus, the same research design (procedure and participants) applies for both studies while the research questions under investigation were different.

The participants were of five different nationalities: 11 New Zealanders, 6 Finnish, 3 German, 2 British and a Canadian. The Finns all lived in Finland and the rest lived in New Zealand. The age of the participants varied from 27 to 55 years old (average 37 years). All but one participant owned at least one surfboard (mean 3.8, range 0-8), 13 participants owned a custom-made surfboard made for him/her, and two others owned a custom board that was not made for them but bought second-hand (Figure 1). Ten custom board owners had ordered a board in a face-to-face interaction with a shaper, two participants had ordered a board online (via e-mail) from a familiar workshop, and one had a custom board made by a friend. Among the participants who had a custom board, three participants had also made a board themselves. Two other participants had thought about making their own board, and the other of those even had a plank ready. In the analysis we do not differentiate between those participants who already owned a custom surfboard made for them and those who did not as all were able to share their thoughts on the expected benefits in different phases of customisation.

## Procedure

The interview protocol was iteratively developed and tested in a pilot interview with an experienced surfer to confirm the intelligibility of the questions. The semi-structured interviews took place in a convenient location for the participants, most often at their homes. The interviews lasted between 13 to 98 minutes (average 48, median 45) and altogether produced 16 hours 45 minutes of recordings. The interviews in New Zealand were conducted in English and in Finland in Finnish by the first author (a native Finnish speaker). There were four themes in the interviews: general perception on customisation, attitude toward surfing, participants' relationship with their surfboards and the acquisition process of the surfboards, and the expected and perceived benefits of custom surfboards. Where possible, the participants were asked to show their boards.

All interviews were audio recorded; however, one interview with a Finnish participant was corrupted and could not be retrieved for transcribing and in the analysis. For this interview, the field notes were used as data. All other recordings were transcribed. Field notes were taken during each interview and they were reviewed immediately after

each and a summary of them and the tentative insights were noted in the reflective field notes.

## Analysis

The basic information on the interviewees was first collected in a table: age, the respondent's experience and skill level at surfing, quiver (collection of surfboards), their ownership of a custom board and of other custom products (Table 1).

To analyse the interview (16 hours 45 minutes of recordings) and field notes data, data-driven thematic analysis in an inductive, 'bottom up' way was used to link the themes strongly to the data (Braun and Clarke, 2006). In the first phase, initial codes were generated that were sorted into themes in the next phase. During the theme refinement phase we mapped the occurrence of customisation benefits to the different phases of the product acquisition process.

## Findings

In this section, first the findings on the benefits of customisation in the three phases of customisation, i.e. pre-customisation, customisation process and product usage are reported. Then, we propose the model for the benefits of customisation on different customisation phases. When citing participants, we refer to each participant by his or her gender (M=male, F=female), age and interview location (New Zealand=NZ, Finland=F).

### Pre-customisation phase

At the pre-customisation phase, the customer considers the expected *functional* and *emotional benefits* of the custom product. The source of these benefits is the product but they born out of motivation on the activity (surfing) and the general perception on customisation. In addition, the decision to purchase a custom product may depend on certain *personal* and *social benefits* the act of ordering a custom product may bring.

### Motivation to surf

Participants reported a range of reasons for their interest in surfing that for many of the participants was

**Table 1.** Summary of basic information on participants.

Participants N=22 (3 female)	
Age (average)	36.8 (range: 27-53)
Average number of boards owned	3.8 (range: 0-8)
Ownership of custom boards	13 participants owned a custom-made surfboard made for him/her, and two others owned a custom board that was not made for them but bought second-hand
Surfing experience in years	14.5 (range: 1,5-37)
Experience level	3 beginners, 10 intermediates, 10 advanced
Ownership of other custom products	14 participants own e.g. wetsuit, clothing (t-shirt, hoodie), shoes/boots, ear plugs, tooth mask, snowboard, skateboard

considered as a lifestyle and not just a pastime activity. Surfing was described as providing positive feelings such as freedom, pleasure and pure happiness. Surfing provides ultimate relaxation and time off from all other occurrences in life as the surfer needs to concentrate and focus on the activity at hand. A surfer is always searching for the perfect wave that a few of the participants described as an addiction. The desire for better surfing conditions was the reason for three of the participants to move to another country and for a few others to choose their place of residence close to the beach. Furthermore, participants appreciated surfing as a great form of exercise that always poses challenges and allows constant learning. However, it is not competitive; a hobbyist surfer only competes against oneself. In addition, the participants explained experiencing nature, and having the feeling of being at one with the ocean as a motivation to surf. A lot of positive emotions related to surfing were related to sharing the experience with friends and the feeling of community.

### Perceptions on customisation

Overall, the participants thought custom products were better than standard ones that, generally, are good enough to fulfil basic needs. Thus, they emphasised the need to justify the purchase of a custom product because customisation comes with costs, such as a price premium, and the investment of time and resources to design the product. Interestingly, justifying the purchase of a custom product was related to expertise or the skill level in an activity and custom features were considered unnecessary for beginners. "I generally don't get things terribly custom-made, definitely not bicycles, coz I'm relatively new to that sport as well" (M30/NZ). In the context of surfing, some participants explained that they do not have the necessary skills to customise (decide specifications) and that they would not be able to feel the difference when riding a custom board. One of the justified reasons to customise was a desire to invest in an activity that was a passion (a participant mentioned kite surfing but this also applies to surfing). In addition, a special need for customisation many participants mentioned was the aim for better fit; the majority of custom products owned were made to participants' physical measurements to provide a better fit (functional benefit) in comparison to a standard product (e.g. wet suit, shoes). Other reasons mentioned were the need for individuality (e.g. through certain clothing), and the need to blend into a culture (e.g. skateboarding culture).

### Expected benefits

All the participants were able to describe the board they would like to have next: a board of superior quality, a "magic stick" that performs exactly as the surfer wants and consequently fulfils all the functional needs for a board. Customisation is considered as the promise of a good fit to the surfer's abilities, the surfing conditions and the waves.

The expected *functional benefits* are the results of both *functional* (i.e. the customisation of board dimensions) and *appearance* (i.e. the color and graphics of the board) *customisation*. The aim is to have a board that performs a certain

way (e.g. is more manoeuvrable) and allows surfers to surf according to their skills or style, or improve their surfing skills. Appearance customisation in the form of graphics or colour were expected to bring functional benefits as they can be used to provide guidance on how the surfer should position him or herself on the board when, for example, standing up. "...I'd put these stripes here just so I kinda know where to put my feet... Without having to really look at where my feet is, to kind of give me guide for like right my foot needs to go here and no further" (M34/NZ).

The shape of the board (*functional* and *appearance customisation*) defines the style of surfing which may be emphasised by the colour (*appearance customisation*). When considering ordering a custom board, the surfers think about their surfing style and what the appearance symbolises. The expected *symbolic benefits* relate to the congruency between the board and self, and how a surfer wants to identify him or herself "...given a choice I'd probably get a green board... think if you own a red board you've got to surf pretty hard and you've got to be aggressive, whereas green is a bit more peaceful" (M38/NZ). In addition, the graphics can be used as a means to show identity, "I wanted it a have a picture of Betty Boop because my surname is Boob [Rinta in Finnish]" (M27/F).

The anticipation of the performance of the board and consequent successful wave riding brings expectations of *emotional benefits* – the enjoyment of using the product and pride of ownership. "It's nice to have something made specifically for you, to fit the waves that you're riding, your knowledge of surfing as well" (M51/NZ). It seemed common for surfers to visualize the future wave riding experiences and how they would feel with the new board.

*Personal benefits* originate from the possibility and importance of living up to own values. They derive from the appreciation of craftsmanship, the social consciousness, and responsible consumerism and concern for sustainability. For example, social consciousness was shown by choosing a shaper based on locality and familiarity: "If you had a friend who was a shaper or knew them personally you'd probably use them because then you could just do them a favour as well" (M40/NZ). Similarly, choosing a workshop may be a question of supporting a sustainable business. "I'd rather give that money to someone who's of a bit of a smaller outfit... What little I know about it [mass marked around surfing], it's huge, and I don't really like the idea because there wouldn't be much thought around the issues of sustainability and waste and that kind of stuff. And I like the idea of supporting a company and an individual who's focused on those kinds of things" (M38/NZ).

*Social benefits* originate from the feelings of connectedness and respect for the shaper. This is similar to previously mentioned personal benefits relating to choosing a shaper that is local and familiar. In addition, feelings of connectedness with the shaper by sharing the same values may influence the decision. "...I often make decisions around production of things based upon the people who are making them. And if they seem to aspire to a certain lifestyle, I like to support that what I can, and whenever I can, I try to understand about who's making the piece, and I get an idea of what they stand for" (M38/NZ). Before making the final decision to purchase a custom board, the cus-

customer needs to evaluate the costs relative to the anticipated benefits. The main costs are the price premium and long delivery time in comparison to off-the-rack boards.

### Customisation process phase

In the customisation process phase, the main benefits derive from the process itself. *Epistemic, creativity, and hedonic benefits* are the results of the involvement and co-creation of the board with the maker or when making the board yourself.

During the process of functional customisation (defining specifications), the customer is looking for personal interaction and an exchange of information with the shaper that bring epistemic benefits through attainment of new insight. Appearance customisation – the design of the look of the board – is the source of creativity benefits as the user can design the look.

The mere placement of the board order brings hedonic benefits such as feelings of excitement. However, if the customer is able to participate in the manufacturing process after the feature specification, for example, by visits to the workshop, it will increase the hedonic benefits by creating feelings of fun and involvement. In addition, it will enhance the product-related emotional benefits such as attachment to the board.

The participants who had built their do-it-yourself (DIY) boards described the similar process-related benefits. “It’s the amount of input into the creation of it you know, like if you’re creating something from the better place where it’s just a blank, and you see it turn into this object of your recreation or your lifestyle or your life, really, it’s what it is, you’re gonna have that emotional interaction with it, which yeah, you know, you have your own look at the creation” (M28/NZ). Making your own board brings feelings of joy, achievement and increased attachment to the board. In addition, building your own board appears to bring some sort of status in the surfing community (symbolic benefit).

### Product usage phase

The benefits which derive from usage are *functional, experiential, emotional and symbolic* and the mere ownership brings *emotional and aesthetic benefits*.

The fulfilment of the expected functional benefits is realised through usage of the board. To get the right feel for the board and understand if the board works as it is supposed to the surfer needs to ride it several times and preferably in different conditions. The experiential and emotional benefits include sensory pleasures and feelings of joy and enjoyment while riding the board (if it fits). A new board, when first ridden, brings the sensation of surfing for the first time and arouses feelings of discovery and accomplishment. Over time, as the surfer’s skills evolve and he or she may have a need for different specifications, the meaning of functional benefits will decrease. Similarly, as the surfer gets accustomed with the new board the experiential benefits will decrease.

The symbolic benefits actualise when the functional and appearance customisation support the identity of the surfer. For example, the shape of the board allows the surfer

to surf in a particular style and the looks of the board may emphasise the style. In addition, a good-looking board may give confidence as surfers know they are being evaluated based on their board’s design and look. Interestingly, while the participants claimed the look of the board is not important as long as it performs the way the surfer wants, all participants confirmed they pay attention to other surfers’ boards.

Furthermore, the board brings many aesthetic benefits, the most important being the sensory pleasure due to the looks and tactile feel of the board. It is common for surfers to fit the board under their arm to “feel” if it feels “right”.

Ownership of the custom board brings emotional benefits, such as prestige and pride, deriving from the ownership of a board made especially for you. “it is different to own a custom-made board that is specifically made for you. That is something special” (M44/NZ). Even custom boards that are bought second-hand may bring emotional benefits due to the satisfaction of making a good purchase, enjoyment of the board’s aesthetics and the value of the custom board as a speciality artefact (intrinsic value of the custom product) made by a shaper respected by the surfer.

### Model for the benefits of customisation

The model introduces the dispositions with a possible influence on customisation behaviour, the three different phases of customisation (pre-customisation, customisation process and product usage), the related benefits of customisation, and the source and types of customisation at the different phases (see Figure 1 and Table 2). The process starts again if the need for a new custom product emerges. The model can be used as a guideline for customisation benefits when implementing customisation strategy in a new context or when improving old practices.

#### Pre-customisation phase

At the pre-customisation phase, the decision to customise (i.e. to order a custom-made product), is influenced by certain dispositions. The dispositions of customisation identified are:

- The goal of the product use – the importance of the activity related to the product and the expected effect of customisation on improving the performance during the activity (functional benefits) and pleasure during the activity (emotional benefits).
- Importance of values - customisation may be a way to live up to own values and thus customisation itself (the act of ordering a custom product) may bring personal and social benefits regardless of the product being customised.
- Conception of customisation – the customer’s ideas and perception of customisation in the context and consideration of the value of customisation and who it “entitled” to utilise it.
- Customisation sensitivity – the customer’s sensitivity to customise, i.e. positive attitude and inclination to customise that may be an outcome of earlier experiences with customisation.

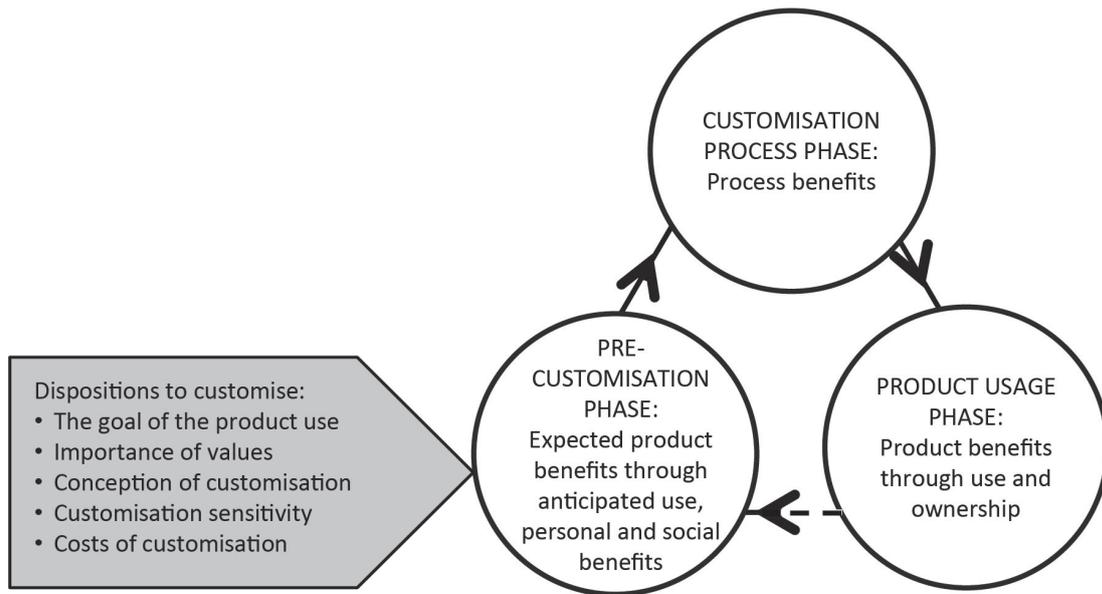


Figure 1. Model for the benefits of customisation.

Table 2. Benefits of customisation in the different phases of customisation.

	Pre-customisation phase	Customisation process phase	Product usage phase
Functional	Better fit to users' capabilities, higher quality.		Ability to improve skills or use the full potential, higher quality.
Emotional	Anticipation of the enjoyment of using the product and pride of ownership.		Feelings of joy and enjoyment while using the product. Feelings of prestige and pride through ownership of a product made especially for you. Enjoyment of the board's aesthetics and the value of the custom board as a speciality artefact (intrinsic value of the custom product). Feelings of confidence born out of the design and look of the product.
Experiential			Experiences such as discovery and accomplishment when exploring the product (especially during the first encounters).
Symbolic		Ability to build own board brings status in the community.	Congruency between the board and self, and how a surfer wants to identify him or herself.
Aesthetic			Sensory pleasures due to the looks and tactile feel of the board.
Personal	Customisation gives the possibility to living up to own values (responsible consumerism and sustainable lifestyle).		
Social	Supporting local business and feelings of relatedness.		
Epistemic		Attainment of new insight and achievement.	
Creativity		Ability to use creativity when designing the product.	
Hedonic		Feelings of excitement and involvement.	

- Costs of customisation – the possible barriers to customisation include price premium, a long waiting time and the complexity of the process.

During this phase when the customer is considering ordering a custom product, the source of the expected benefits is the product and customisation itself. The product related expected benefits are functional, emotional and social and both types of customisation, functional and appearance can be used to bring these benefits. In addition, decision to order a custom product is influenced by customer's values and therefore customisation itself can be a source of benefits. Ordering a custom product from a local or familiar business committed to sustainable production allows consumers to fulfil values which are important to them and that bring certain personal and social benefits.

### Customisation process phase

At the process phase, the expected functional benefits are used as a road map to co-create the board with the shaper. The involvement in functional and appearance customisation during the customisation process has the possibility of providing a variety of benefits (epistemic, hedonic, emotional and creative). In addition, the product's concretised specifications provide expectations for symbolic benefits, e.g. how the product expresses identity in its future use. The realisation of process benefits depends on the extent of involvement. For example, the possibility of visiting a workshop during fabrication enhances the epistemic and emotional benefits. In addition, the effort demanded by a DIY product is superior in providing process-related benefits.

### Product usage phase

At the product usage phase, the fulfilment of expected product-related benefits is realised. The main interest is in the functional benefits and the performance of the product. Over time, the functional benefits may lose importance as the user's skills improve. However, through ownership and usage experiences, the other benefits become more prominent. For example, usage experiences bring about experiential and emotional benefits. In addition, use may evoke symbolic benefits and the mere ownership aesthetic and emotional benefits through appreciation of the unique handicraft and customisation in general. Both appearance and functional customisation influence the perceived benefits during usage.

### Discussion

The model for the benefits of customisation described in this study adds to the existing discussion on the benefits of customisation by showing the benefits during the different phases through empirical exploratory research. The model can be used as a guideline for customisation benefits when implementing customisation strategy in a new context or when improving old practices. In addition, marketers can use the model to design marketing strategies and

offers that highlight the benefits of customisation in different phases of customisation and to segment consumers according to their dispositions to engage in customisation.

The study findings on personal and social benefits at the pre-customisation phase extend the current knowledge on the benefits of customisation that only acknowledge the benefits related to the product and the customisation process (e.g. Bauer *et al.*, 2009). The study finds that by making a custom product purchase, the consumer may actualise important personal values in life such as relatedness (i.e. supporting a local business) and universalism (i.e. considering sustainability in purchase choices). Thus, this study shows that customisation may bring benefits even before the customisation process begins, and these benefits may influence on the perceived product benefits (i.e. pride of having a board by local craftsman).

The investigation of customisation during the three phases shows how the benefits alternate at the different phases. For example, the functional benefits that were of concern at the pre-customisation phase lose importance at the product usage phase when the symbolic and aesthetic benefits gain importance throughout the product usage and ownership. In addition, the intrinsic value of customisation related to the appreciation of the handicraft actualises at the product usage phase. This benefit is associated with the perception of custom products as high quality, which in this context is an argument for resale value in a second-hand market. In this respect, the customisation of surfboards differs from the customisation of motorcycle seats. The concern for customers customising a motorcycle seat is that the resale value of the bike might decrease as the customised seat would not fit anyone else (Ong *et al.*, 2008).

This study found that while functional customisation was more important for users, both functional and appearance customisation served a purpose. Appearance customisation was not only a source of aesthetic or emotional benefits but the colours and graphics also provided functional and symbolic benefits, therefore both types of customisation should be offered for customers. This is in contrast to Schnurr and Scholl-Grissemann (2015) who found that users most enjoyed customising aesthetic attributes and therefore suggests that customers should mainly be offered options to customise appearance. The findings also extend the previous research findings in which appearance customisation was attached to symbolic benefit and to increase self-expressive value (Mugge *et al.*, 2009), and was considered to only serve a limited market need (Piller, 2004).

It appears possible to provide better product experiences with custom products. Users experience benefits even before using the custom product and the mere ownership of a custom product bring aesthetic and emotional benefits through appreciation of the unique handicraft. Functional and appearance customisation seems to increase aesthetic experience and experience of meaning that in turn influence emotional experience (Desmet and Hekkert, 2007). Positive product experience through customisation might be a way to increase the longevity of products and promote sustainability, which is of concern in design (Niinimäki and Koskinen, 2011; Hebrok, 2014).

## Benefit-driven customisation

Based on our findings, we created a model for the benefits of customisation that developers may utilize as part of human-centred design process. The model can be used as a guideline of customisation benefits when implementing customisation strategy in new context or when improving old practices.

In addition, we envision some new opportunities for supporting benefit-driven customisation. First, building social presence among customers also in digital world is important as familiarity and feelings of connectedness are important aspects when choosing a maker for a custom product. Therefore, use of different social media channels is highly recommended for businesses offering custom products. Second, involvement of customer in design and fabrication phases improves attachment to the product, and therefore, allowing the customer to follow the fabrication process through video clips, live stream or pictures if live visit are not possible is advisable. Third, developing and offering maintenance service for custom products and keeping the customer informed on these is a possibility to increase the lifespan of products and emphasises sustainable values of the business.

## Limitations and further research

There are some limitations in our study. First, the use of only one product type, custom surfboard, limits our research to a single product category. However, customisation is a well-known concept in the context and our discoveries reflect the findings of previous research on other products which provide some evidence that it is, to a certain extent, possible to generalise. In particular, we believe the findings can be generalised for other high-involvement product categories such as skateboards, bicycles and snowboards. These products are purchased seldom and since the product is extremely important for the customer, higher price is accepted.

Nevertheless, future research should address other product categories and empirically test this supposition. In addition, future research could employ a longitudinal research set up in which participants are interviewed multiple times during the different phases of the acquisition process to minimize the loss of memory.

Second, our case study research design limited our research to the two locations studied and the descriptive results. Third, in the wake of the increase in digital fabrication and 3D printing, further research should be undertaken to investigate the benefits of the process between customers using craft customisation (face-to-face with a maker) and customising the product themselves using a configuration tool from the Internet (Gammack and Hodkinson, 2003). Also, satisfaction with the ready-made product could be investigated. In addition, it is possible that the model for the benefits of customisation could be used to evaluate the differences of diverse customisation strategies. In future studies investigating the benefits of the customisation longitudinal research approach with measurements at the specific phases of customisation is suggested to empirically test the developed model of customisation benefits.

## Conclusions

This research explored the benefits of customisation throughout the customisation process within a high-involvement product category, a surfboard. Qualitative exploratory research with 22 participants in two locations was conducted using interviews as the main data collection method. Based on the findings, we present a model for the benefits of customisation in the different phases of customisation. The resulting model can be used as a guideline for customisation benefits when implementing customisation strategy in a new context or when improving old practices. The aim of the model is to help designers make customisation more attractive and acceptable for users, thus supporting effective customisation. This study contributes to design research by providing insights and the model for the benefits of customisation to be taken into account when implementing customisation as a design strategy.

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