Let's Get Personal: Why Some Customers Customise and Others Don't

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy

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December 2018
DECLARATION

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed.

I acknowledge the support I have received for my research through the provision of an Australian Government Research Training Program Scholarship.

Jessica Pallant, 21st December 2018
ACKNOWLEDGEMENTS

I would like to take this opportunity to acknowledge and thank the people who supported me in the completion of my thesis.

Firstly, my sincere gratitude to my senior supervisor Professor Ingo Karpen. His motivation for research and immense knowledge guided me through the biggest personal challenge I have undertaken and enhanced the quality of the work I have produced. I first met Ingo as an undergraduate student, and his passion for teaching and research was a large part of the reason I wanted to become an academic. Equally I acknowledge and thank my associate supervisors Dr Emily Chung and Associate Professor Sean Sands. Emily encouraged me to apply for the research program initially and gave me her full support both professionally and personally. Sean was an external supervisor for my thesis and dedicated much of his own time in providing insightful ideas, comments, feedback and encouragement to my thesis journey which I am incredibly grateful for.

My deepest and sincerest love and thanks to my husband Jason Pallant without whom I would not have made it through this thesis. His love and support helped me every step of the way, a feat given he was completing his PhD as I was beginning my own journey. He is my biggest supporter through life, celebrating every achievement of mine, no matter how small, and is by my side through all challenges I face. They say it is an accomplishment if a marriage can survive a PhD thesis, well, ours has survived two.

My thanks to my parents, Chris and Su Lampe. They both supported me emotionally through this thesis, always answering my phone calls and offering support, as they have done through-out my whole life. Thank you to Barkley for keeping my lap warm and overseeing my work in the home office.

Finally, thank you to my RMIT colleagues that have helped me along the way. Foremost among them are Dr Linda Robinson and Dr Janneke Blijlevens, who have been a source of support and inspiration for the academic I hope to become. I would also like to thank each of my panel members who provided valuable feedback at each of my milestone reviews. Thank you to Swinburne University who took a chance on hiring me in my first academic role before I had finished this thesis. It made it much less stressful knowing what was next for me post PhD submission.
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Abstract

Customers are increasingly demanding products that directly fit their individual needs. One way customers can achieve this is through the configuration of a product or service from a pre-determined list of components. This is just one example of mass customisation. While existing research on the managerial implications of mass customisation is rich, research on customer perspectives is underdeveloped. As a result, literature provides insufficient and inconclusive theorising regarding alternative customisation strategies from a customer’s perspective. The first paper in this thesis conceptualizes a coherent mass customisation matrix, delineating four respective strategies, and specifies ‘co-configuration’ as an important yet understudied strategy. An extended future research agenda is then provided.

The second paper then investigates the application of a configuration theory perspective to provide insights into alternative market segments that provide opportunities for firms seeking strategic fit for effective customisation. In doing so, the second paper sheds light on how market configurations influence new product design success. A multi-study approach is taken, collecting data within and across product category contexts. Latent Cluster Analysis is utilised to segment customers based on prior experience with customisation, while investigating the effects of covariates on segment membership. Four segments are identified that function as stable and internally consistent market configurations; casual customisers, non-customisers, playful customisers and product enthusiasts. This research helps to understand how customer segments can be identified through a configuration theory lens to better predict market behaviour and understand what drives success of the new product design. The findings show these segments are functional and stable.
over different products and brands, enhancing the generalisability of these
segments.

Finally, the last paper in this thesis seeks to understand what drives customers’
intention to use a customisation toolkit and their purchase intention of customised
products. The concept of experience has received increasing attention in recent
literature. In particular, studies focused on brand experience have gained in
prominence, aided by the development of associated scales to measure the concept.
This has led to the identification that a connection between brand experience and
customisation is unknown. Paper 3 considers the interplay between individual,
product and brand related drivers to answer a call for further research connecting
branding and customisation. In doing so, this paper develops an understanding of
what drives consumers’ intention to use a customisation toolkit and their subsequent
intention to purchase customised products. Data are collected using an online panel,
and structural equation modelling through AMOS is used to analyse a mediation
model. The paper finds brand experience is the strongest driver of intention to use a
customisation toolkit, mediating the relationship between individual and product
related factors, and intention to use. Past experience and intention to use a
customisation toolkit are the only direct drivers of purchase intention of customised
products.

The three studies in culmination address the overarching thesis aim, providing an in-
depth understanding of mass customisation and addressing existing calls for
research to advance knowledge both academically and practically.
Chapter 1: Introduction

Many customer needs are unfulfilled by standard product and service offerings (Franke and Schreier 2008; Mugge, Schoormans and Schifferstein 2009; Piller and Müller 2004). However, satisfying customer needs is crucial for firms to succeed in today’s competitive landscape. Customisation is one way in which firms are increasingly counteracting this dilemma. Shamil Hargovan, CEO and co-founder of Wiivv, a company that specialises in customised footwear highlights that “customisation itself is the original form of producing goods. Clothing and shoes used to be individually made for their users, by cobblers or tailors and dressmakers. When mass production hit, that's when customisation was lost.” (Mulqueen 2017). For many firms to date, mass production has been the focus, with the efficiency in relation to time and money at its core; and no doubt this has proven a successful strategy for fast fashion retailers such as Zara and H&M. However, the waste in mass production from both an economic and social standpoint, along with the inability to directly meet customers’ unique needs, highlights the importance of a shift towards mass customisation.

Mass customisation is a process that defines or changes the appearance or functionality of a product to increase its personal relevance to an individual (Blom and Monk 2003; McKay 2007; Mugge, Schoormans and Schifferstein 2009). Consequently, offering customised products through the customisation of functionality and/or design can increase the value offered to consumers, and in turn provide firms with a competitive advantage (Fiore, Lee and Kunz 2004; Piller and Müller 2004; Pine 1993; Salvador, De Holan and Piller 2009). However, relatively little is known about what drives customers to actively participate in the product or
service customisation process. In this chapter, the relevant literature that forms the theoretical background of the thesis is reviewed.

Prior research has mainly focused on the operational and managerial side of customisation (Gilmore and Pine 1997; Lampel and Mintzberg 1996; Pine 1993; Syam, Ruan and Hess 2005; Von Hippel and Katz 2002). Two prominent operational categorisations for mass customisation are Gilmore and Pine’s (1997) ‘Four Faces’ of mass customisation and Lampel and Mintzberg’s (1996) Customising Customisation framework. The ‘Four Faces’ of customisation (Gilmore and Pine 1997) focuses on the production and monetary price from a firm perspective (Blom and Monk 2003; Mugge, Schoormans and Schifferstein 2009). Similarly, Lampel and Mintzberg’s (1996) ‘Customising Customisation’ framework does not take into account the customers’ involvement in the customisation process. For example, the framework does not include the possibility that products may be personalised after the production process, while several of the examples identified in this research are customised after production of the product elements (Blom and Monk 2003; Mugge, Schoormans and Schifferstein 2009).

Outside of these frameworks, much of the research has been firm-centric. Syam, Ruan and Hess (2005) considered the range of customisable features a firm should offer; demonstrating the best attribute to customise is one that no competitors are already customising in order to mitigate price discounting. Von Hippel and Katz (2002) analysed the design and implementation of customisation toolkits. Results of their research found that while toolkits allow extended control to the customer, they are not always appropriate as they do not take into account user skill level. Von Hippel and Katz (2002) suggest a major managerial consideration when
implementing toolkits is to offset the cost to the customer of having to learn the toolkit. Hildebrand, Häubl and Herrmann (2014) provided an updated view on customisation toolkits, proposing that customisation via starting solution, as opposed to attribute-by-attribute customisation, helps to mitigate the perceived complexity of the product customisation and results in more feature rich products being customised.

Prior research has provided detailed description of how mass customisation can be utilised by marketers, and has provided two comprehensive categorisations as well as investigating how to implement customisation toolkits in to a firms offering. However, successful customisation requires the tailoring of products to individual needs and understanding the cost to the customer of involving themselves with the firm. Therefore, it is important for marketers to also understand customisation from the customer’s perspective.

Franke and Piller (2004) established customers' willingness to pay for customised products was twice that of standard products specifically for customised watches. This finding has been established across numerous product categories, and can be considered a generalised finding (Franke and Schreier 2008; Franke, Schreier and Kaiser 2010; Schreier 2006; Townsend, Kaiser and Schreier 2015). Other research has investigated customers’ perception of their design ability and their ability to express their own design preferences (Chang, Chen and Huang 2009; Franke, Keinz and Steger 2009) highlighting the complexity of customisation for customers, and that the benefits customers receive from customisation relies heavily on the individual. Further, customisation research from the customer perspective often considers individual behavioural theories. For example, Theory of planned behaviour
and technology acceptance model have been commonly applied in this area to understand attitudes towards customisation and technology adoption (Lee and Chang 2011; Lee et al. 2011).

Existing literature that has considered the customer perspective of mass customisation, while gaining traction in literature, remains underdeveloped. Townsend, Kaiser and Schreier (2015) included a series of calls for action for additional research in customisation highlighting there are still clear gaps in existing knowledge such as when do customers choose to customise, how customisation relates to conditions outside of individual behavioural theories, and what happens after customers customise? The authors state “a broad understanding of what drives a customer to select a self-customization option is not known…No doubt there are individual, situational, as well as product categorical factors that influence perceived benefits” (Townsend, Kaiser and Schreier, 2015, p.244), providing opportunity for important additional research to extend both theoretical and managerial knowledge.

1.0 Research Aim

There have been inconsistencies and confusion around customisation in existing literature, which has identified the overarching aim of this thesis is to clarify the concept and role of customisation, including investigating the role of individual, situational and product factors. To this end, the aim of this thesis is:

*To conceptualise and re-contextualise customisation, investigate the drivers of participating in the customisation process and the subsequent outcomes of customising, and review potential boundary conditions.*
Given the issues identified in the existing literature, a series of research questions are developed. The first specific area to address relating to the aim of this thesis is in re-contextualising mass customisation. There have been two prominent frameworks to understand customisation from an organisation viewpoint, however, customers have to take an active role in the customisation process. The role the customer takes on can vary widely. It is therefore important to understand the parameters of this involvement and how this impacts the type of customisation. Therefore, the first research question is outlined below and addressed in Paper 1:

**RQ1:** How can we conceptually make sense of, and delineate the areas of mass customisation?

Existing research in customisation has often posited one optimal solution for firms to offer customisation, with the implication being, one type of customisation toolkit will meet all customer needs. This assumption of homogeneity could be problematic for researchers and managers alike for a number of reasons. First, it has been well established in early marketing literature that customers are not homogenous and firms cannot assume the same preference structures (Claycamp and Massy 1968). Second, the premise of customization is to create a distinct, and individual product. Based on this, it is reasonable to expect some level of heterogeneity in the demand for customisation. Therefore, the second research question this thesis will address is outlined below and addressed in Paper 2:

**RQ2:** What type of customer segments exist in customisation when taking a configuration theory approach, and how does segment membership change the perception of customised products?
The first two research questions aim to add clarity to types of mass customisation and what, if any, segments exist in this context and the impact of segment membership on perception of customisation outcomes. It is also important to address boundary conditions that encourage customers to participate in customisation, particularly incorporating conditions outside of individual behavioural theories. Two pertinent calls to action are understanding when customers self-select to customise and how customisation relates to branding (Townsend, Kaiser and Schreier 2015).

While there has been research investigating outcomes of participating in customisation such as the impact on satisfaction and willingness to pay, it is still unclear when and why customers choose to participate in customisation. Therefore, the final research question this thesis will address is outlined below and addressed in Paper 3:

**RQ3:** What role do individual, product and brand elements play in customers’ participation in mass customisation?

### 1.1 Research Scope

As introduced in this chapter, this thesis builds on existing knowledge in the area of mass customisation by considering the different ways customers can participate and the factors that drive participation. It also investigates the subsequent outcomes of customisation. Figure 1-1 identifies the overarching conceptual model this research will apply in order to better understand and examine customisation. The overarching framework for this thesis is based on three key concepts relating to the individual, the product and the brand.
This framework is helpful to understand a basis for formulating expectations about how different factors relate to participating in customisation, and the interplay of these drivers in the context of customisation. For example, a customer who scores highly on brand related drivers, may be inclined to customise even though they may have low individual related drivers. Given the purpose of customisation is to develop a product that meets a customer’s needs, it is also highly relevant to investigate drivers and outcomes related to the product itself.

1.1.1 Research Philosophy
The overall paradigm applied to this research is a positivist approach. This is justified through answering three fundamental questions; the ontological question, the epistemological question and the methodological question (Guba and Lincoln 1994). The ontological question refers to the nature of reality and whether what is there can be known. The positivist answer to this question assumes realism. That is, research uncovers ‘the truth’. The epistemological question covers the relationship between the knower and what can be known. Applying the epistemology through a positivist paradigm assumes objectivity. That is, what is real is objectively true (Guba and Lincoln 1994). The methodological question relates to how the researcher can find
out if the belief can be known. Through a positivist lens, this typically applies quantitative methods (Guba and Lincoln 1994).

Therefore, the underlying ontology and epistemology for this thesis is a positivist paradigm assuming there is a true reality and it can be uncovered through applying a quantitative methodology (Guba and Lincoln 1994). Unlike alternative approaches – interpretivist and constructivist paradigms – this thesis does not consider subjective reality, but that reality is objective and measurable (Guba and Lincoln 1994).

The aim of inquiry for positivism is explanation, which is the most appropriate paradigm to address the research questions in this thesis (Von Wright 2004). This approach enables the prediction, and control, of phenomena (Guba and Lincoln 1994). Positivism applies hypotheses that can be accepted as objective facts, and is typically seen as having rigor through internal validity, external validity, reliability and objectivity (Guba and Lincoln 1994).

A quantitative approach was applied in this thesis for two reasons. First, this is the most appropriate design to address the research aim and questions that this thesis aims to address. That is, this thesis examines individual, product and brand related factors in relation to purchasing customised products. Using a combination of cross sectional and behavioural data allows for intention and purchase behaviour to be reported and measured. The second justification is similar designs have been applied in existing literature (Konuş, Verhoef and Neslin 2008). Using a similar research design allows this research to compare to relevant prior literature, and make additional theoretical and managerial contributions to the growing body of knowledge in this research area. Therefore, the choice of design is justified through
a combination of being the most appropriate to address the research questions in this thesis, and due to being used in prior literature.

1.1.2 Research Methodology

A quantitative approach is applied in this thesis to investigate customisation from the customer's perspective. Data are collected using two different online questionnaires, with three rounds of data collection occurring; the first in collaboration with an industry partner to collect behavioural data from customers, and the second and third using an online panel. The first two rounds of data collection utilise the first questionnaire (appendix 1) and the third round utilises a second questionnaire (appendix 2). For both instruments, scales were selected and adapted from empirically validated scales in previous literature. Attention checks were included in both research instruments, and any respondent who failed the attention checks or flat-lined in their responding were removed from the samples (Menictas, Wang and Fine 2011). Data was tested for reliability and validity using exploratory factor analysis and confirmatory factor analysis before further analysis was conducted for all studies (Byrne 2001).

There are two core data analysis approaches applied in this research across the papers. Paper Two employs a Latent Class Analysis (LCA). The research uses a Latent Cluster Model (LCM) to develop typologies for different customers that exist in co-configuration. The research estimates LCM using maximum likelihood (Collins and Lanza 2010; McCutcheon 2002) using Latent Gold Version 5 software (Vermunt and Magidson 2013). One hundred different random sets of starting parameters are used to reduce the chance of local maxima (Masyn 2013). Finally, local independence is tested for through bivariate residuals, and includes additional model
terms where appropriate (Collins and Lanza 2010; McCutcheon 2002; Vermunt and Magidson 2013).

Paper Three applies Structural Equation Modelling (SEM) using SPSS and AMOS version 25. In order to test the mediation model, the process as outlined by Preacher and Hayes (2004) was followed, first establishing direct effects, and then testing for mediation.

1.1.3 Research Justification

According to Perry (1998), PhD research can be justified through a combination of four factors: the importance of the topic area, relative neglect of the specific research problem, usefulness of potential applications of the study’s findings, and a relative neglect of methodologies in previous research. With this research, all four points are addressed, and thus provide justifications for the relevance of the research.

The first justification for this research is the increasing importance of mass customisation from both an academic and practical/managerial viewpoint. As alluded to above, customers are demanding products that directly fit their individual needs, and companies and academics alike are paying closer attention to the concept of mass customisation (Trentin, Perin and Forza 2014). This highlights the importance of understanding this area of research from both an academic and practical viewpoint.

The second justification is a neglect for the specific research problem. A review of the existing literature revealed that studies of mass customisation have primarily taken a managerial focus, and little academic research has focused on the customer side of mass customisation (Hunt, Radford and Evans 2013). This is compounded by the identification and conceptualisation of a new area of mass customisation in this
thesis; co-configuration. Extant literature has focused on different forms of customisation such as co-design, co-production and co-construction, yet in inconsistent ways. Therefore, there is a need to consider, and clearly define the different areas of mass customisation, and how this impacts customer perceptions.

The third area in research justification is the usefulness of the study, and potential application of the study’s findings. This research will provide an analysis of a nomological network for co-configuration and a detailed customer segmentation. Firms will be able to understand the drivers of customer participation, and the subsequent outcomes. Additionally, they will also understand how these drivers and outcomes differ between customer types. As this research also involved an industry partner using real customers, the practical application is enhanced.

Finally, the last justification as outlined by Perry (1998) is a neglect of methodologies in previous research. From the analysis of extant literature, studies have used the segmentation method to identify only one segment of customers who utilise customisation toolkits, and how to design the best choice menu (Fogliatto and da Silveira 2008; Hildebrand, Häubl and Herrmann 2014). However, there has not been any segmentation of the different types of customers who customise, and they have been previously treated as homogenous. Hence, this thesis is justified through the application of segmentation as a previously neglected methodology in this area.

1.1.4 Research Contributions
This thesis makes important contributions to advancing both theoretical and managerial knowledge. The first paper in the thesis seeks to establish a conceptual framework to understand the different roles customers can take in the customisation process. This investigates not only when customers get involved in the customisation
process, but also how. This advances knowledge as existing frameworks have previously considered this from the firm’s perspective, largely ignoring the many different ways the customer can be involved in mass customisation. The first paper contributes a strategic understanding of customisation, identifying and conceptualising an important fourth strategy in this area, co-configuration, among three existing strategies; co-production, co-construction and co-design.

The second paper adopts a configuration theory lens to understand the different types of customers that exist in customisation. The paper finds there are four types of customers that are internally consistent and stable across different contexts indicating a deeper underlying reason for customers to fit one of four customisation profiles. This can help firms identify how to best configure their internal and external resources to maximise competitive advantage. The second paper also enhances understanding of how customisation impacts product outcomes, particularly in new product design, which is an area that has been under investigated in current literature.

The third paper investigates the relationship between individual, product and brand related drivers and the impact these factors have on intention to use a customisation toolkit and purchase intention of customised products. This paper aims to identify the degree to which brand factors drive customers’ intention, or if there is something inherent about individual customers or the product category. Interestingly, paper three finds brand experience to mediate the relationship between individual drivers and intention to use a customisation toolkit. Intention to use a customisation toolkit fully mediates the relationship between brand experience and purchase intention of customised products, highlighting there are two distinct actions customers have to go
through; first customise a product, and then follow through with the purchase behaviour.

The three papers in combination address the overarching conceptual model outlined in this thesis, and provide both conceptual and empirical findings to address and answer the research questions and overall aim as outlined above. The papers in this thesis provide a better understanding of how customers can involve themselves in the customisation process, and the implications this has on each type of involvement. Considering the papers in unison, it is evident the types of customisation that exist, the different types of customers that involve themselves in co-configuration, how customising alters customer’s perceptions of product outcomes, and importantly how to encourage customers to participate. Each of these are important insights both from a theoretical perspective, but also for firms wanting to get the most out of implementing customisation strategies in to their core offering. Importantly, this research highlights offering customisation might be most appropriate to the product enthusiast segment, making up only 2.5 percent of customers. This raises the question whether mass customisation can really be offered to the ‘mass’.

1.2 Outline of Thesis

This thesis is structured in three papers, which constitute the core of the dissertation. Each of these papers investigate an important theoretical concept in relation to customisation and are linked together to answer the research questions outlined above. The second chapter in this thesis (paper one) crystallises four distinct forms of mass customisation. As discussed above, customers are increasingly demanding products that fit their individual needs and many firms have responded by cultivating
the individualisation of products via mass customisation. However, rather than focus on the customer, research has focused on the organisational view of customising. As a result, literature provides insufficient and inconclusive theorising regarding alternative customisation strategies from a customer’s perspective. This thesis chapter conceptualises a coherent mass customisation matrix, delineating four respective strategies of mass customisation and specifies co-configuration as an important yet understudied strategy warranting significant research.

Chapter Three (paper two) aims to provide a segmentation of different customer types. Building on paper one, little is known about customers’ engagement in customisation; importantly, how they may be segmented and how these segments shape new product success. By applying a configuration theory perspective, paper two provides insights into alternative market segments that provide opportunities for firms seeking strategic fit for more effective customisation. Data are collected through two rounds of data collection, across different contexts. Latent Class Analysis is then used to segment based on prior experience, investigating the effects of covariates on segment membership. The analysis results in four segments: casual customisers, non-customisers, playful customisers, and product enthusiasts, functioning as stable and internally consistent market configurations. Interestingly, one segment uses the customisation toolkit for play, yet purchase standard products, perceiving less symbolic value.

Chapter Four (paper three) aims to understand the impact of individual, product and brand related factors on intention to use a customisation toolkit and purchase intention of customised products. The paper seeks to address if individual, product, or brand factors are stronger at predicting intention through both intention to
customise using a toolkit and intention to purchase. To do so, data are collected using an online panel and structural equation modelling is used to analyse a mediation model. This research contributes to the growing body of customisation literature, as well as further exploring and expanding understanding of brand experience. It extends customisation literature by investigating the relationships of different antecedents in the customisation context. The paper first establishes the direct effect of individual drivers on intention to use a customisation toolkit, and then builds up to include product drivers, and finally to include brand experience as a mediator between individual and product drivers on intention to use and purchase intention. Interestingly, while individual factors are significant in the initial model, when running the final mediation model, the individual drivers reduce their effect. The implication of this being, product and brand related drivers are stronger at predicting intention to use a customisation toolkit than individual factors. The paper finds support for brand experience in promoting positive outcomes, however, intention to use a customisation toolkit fully mediates the relationship between brand experience and purchase intention.

Finally, Chapter Five summarises the findings of the three papers presented in this thesis, with the aim of drawing conclusions building on each of the previous chapters. Chapter Five outlines the overall theoretical contributions and managerial implications of the research conducted, as well as discussing opportunities for future research.
Chapter 2: Customer Participation and Innovation:
Conceptualising, Delineating and Leveraging Customisation Strategies

2.0 Introduction

Customers want unique products, services and experiences suited to their own preferences. Seeking to overcome traditional mass production and its limitations in offering this to customers, brands increasingly pursue alternative approaches to delivering tailor-made experiences through interactive media. Accordingly, there has been a significant growth in personalisation and customisation, both in being embedded in to firms’ competencies and also in academic literature. Personalisation includes tailoring for a specific customer, often without their knowledge, or requiring additional effort on the customer’s part. Churchill (2013) stated “personalisation is largely about filtering content to satisfy an individual’s particular taste” (p.12). That is, marketers can personalise content using information gathered from customers in order to segment and target them more effectively (Dunlap Jr 2014). Amazon have been personalising content for customers for many years with their product recommendations. More recent examples are Netflix and Spotify. Netflix have utilised personalisation to create alternate previews for shows based on the viewer’s history (Perez 2017), and Spotify curate weekly playlists based on a listener’s music preferences. Importantly, personalisation is undertaken by the firm without active involvement from the customer.

Alongside personalisation, there has been a growth in customisation, which does require active involvement from customers. Mass customisation can range from a relatively simple process (i.e., adding a name to a product, such as the case with
Nutella’s jar campaign) to a more complex process (i.e., directly involving the customer in the design process, as in bespoke jewellery). In this thesis mass customisation is defined as a form of micro-segmentation where firms create a wealth of product/service variants, down to a unit of one, allowing firms to satisfy the needs of individual customers with the efficiency of mass production (Hunt, Radford and Evans 2013; Piller and Müller 2004). Piller and Müller (2004) identified that mass customisation is cemented in three principles; it is defined by a fixed solution space, it is an application of computer integrated manufacturing, and cost savings economies open up from the result of customer integration in value creation, with an on-demand manufacturing approach.

Mass customisation aims to provide more meaningful, customised experiences at scale, while avoiding the pitfalls of surplus stock that customers are not willing to buy. For example, Choosy is a relatively new fast fashion brand that is implementing artificial intelligence (AI), scouring social media platforms to customise and curate 10 weekly styles based on fashion trends customers are responding favourably to. Customers are able to place their order, which are then put into production and sent to the customer within as little as two weeks (Friend and Houghton 2018). Similarly, Amazon, is one of several retail brands striving to encourage customer collaboration in the design process (i.e., by measuring themselves), and subsequently creating custom clothing made to measure (Wingfield 2017). However, this is not solely in the fashion category or with brands the size of Amazon. Across product and service organisations, regardless of size or industry, customers are increasingly demanding tailored interactive experiences to fit their individual needs (Deloitte 2015). Such mass customisation can be a driver of competitive advantage for brands (Salvador, De Holan and Piller 2009).
Recent advances in technology and improved customer interactions have made it easier for brands to offer customisation on a mass level (Fogliatto, da Silveira and Borenstein 2012). In particular, online customisation and interaction platforms have simplified the process while offering enhanced control to customers (He et al. 2016). However, research has shown that mass customisation can be a double-edged sword; increasing value for some customers, but not for those who see it as an added responsibility, perhaps through the additional effort required during the co-creation design process or by attracting a price premium (Hunt, Radford and Evans 2013). As a result of increasing demands for customised products and associated challenges of meeting customers’ individual needs, there is an increasing need for research into mass customisation (c.f., Hunt et al. 2013; Piller and Müller 2004; Sandrin et al. 2014). Indeed, there is a need for 1) conceptual clarity around customisation, 2) an understanding of types of customisation strategies and their relationships, and 3) an investigation for which type of customers these strategies might work, under which conditions.

A review of existing research highlights several different conceptualizations of mass customisation. Importantly, Duray et al. (2000) identified mass customisation as spanning a vast range of production practices, which cloud the meaning of the term and respective theoretical developments. As a result, the conceptual boundaries of mass customisation are blurred and theorizing challenged by various perspectives. While there have been several attempts at providing taxonomies to understand customisation, these frameworks either combine mass customisation strategies in to one category of a broader framework (Miceli, Ricotta and Costabile 2007; Wind and Rangaswamy 2001), investigate mass customisation from a firm perspective (Gilmore and Pine 1997; Lampel and Mintzberg 1996), or apply inconsistent terms to
the same specific type of customisation. To date, an integrated framework to help systematise and make sense of the concept of mass customisation and its potential manifestations is lacking. That is, while there has been important research conducted in mass customisation, this has been in insular approaches and streams. Therefore, a need for conceptual clarity persists.

The aim of this paper is to advance knowledge of the domains of mass customisation, understand their relationships, and review the way in which they have been conceptualised in academic literature. Technological advancements have meant implementing customisation into the product and service offering of a firm has significantly less barriers, and is increasingly commonplace. This provides an opportunity to provide an updated framework to understand mass customisation, taking into account the growth in academic literature, and the evolution of customer involvement observed in industry. Specifically, this paper closely looks at different mass customisation strategies involving customers in the innovation process. In doing so, this research systematises three existing strategies, while conceptualizing and adding clarity to a fourth mass customisation strategy, providing a more holistic theoretical understanding of mass customisation. This results in a 2x2 conceptual framework that reflects different stages of involvement (from development to implementation) and the nature of the design process (firm versus customer driven).

The presented framework provides a means to view and theorise mass customisation strategies in an integrative manner, building the foundation for an advanced understanding and more coherent theorising around the mass customisation phenomenon. This paper provides a customer perspective on mass customisation, specifying ‘co-configuration’ as an important strategy among three established strategies. Importantly, it also provides an in-depth account of the co-
configuration strategy and shows how this conceptualisation will help shape the direction of mass customisation literature through an extended future research agenda.

2.1 Literature Review

Customers have specific individual preferences, leaving many customer needs unfulfilled with standard product and service offerings. Consequently, offering customised products through mass customisation can increase the value offered to customers, providing firms with a competitive advantage (Fiore, Lee and Kunz 2004; Piller and Müller 2004; Pine 1993; Salvador, De Holan and Piller 2009). Past research tends to focus on operational and managerial processes of mass customisation with less research framed to understand the customer perspective. Two widely cited and accepted frameworks are Gilmore and Pine's (1997) ‘Four Faces of Customisation’, and Lampel and Mintzberg’s (1996) ‘Customising Customisation’. Gilmore and Pine (1997) focus on the production and monetary price of mass customisation from a firm perspective (Blom and Monk 2003; Mugge, Schoormans and Schifferstein 2009), while Lampel and Mintzberg (1996) focus on managerial implications, but do not account for customer involvement. A significant gap exists in these frameworks – the lack of a cost/benefit and experiential meaning lens from the customer’s perspective. While the frameworks acknowledge some customisation types cannot occur without the customer, both frameworks focus purely on costs/benefits to organisations through production efficiency. In practice, mass customisation requires involvement of customers, and often at points after production; therefore, it is important to more deeply consider mass customisation from the customer perspective, particularly in view of the experiential meaning and associated value.
Traditionally, customers are rarely involved in the development of new products (Mugge, Schoormans and Schifferstein 2009); thus, prior research has focused less on the customer’s perspectives of mass customisation (Hunt, Radford and Evans 2013). This neglect has led to a lack of delineation of customisation strategies from a customer perspective (Mugge, Schoormans and Schifferstein 2009), and a limited understanding of the customer’s derived value from customising (He et al. 2016). Von Hippel and Katz (2002) analysed the implementation and design of customisation toolkits. These toolkits allow customers to have extended control over the product design. Their results found that while toolkits allow extended control to the customer, the toolkits often incorporate specific automated rules that do not take into account the user skill level. They suggest a major managerial consideration when implementing toolkits is to offset the cost to the customer of having to learn the toolkit. However, the view this research has taken neglects to consider the type of customisation and how the customer is involved in each of these scenarios, changing the way the toolkit would need to be learned.

Research that does take into consideration the customer viewpoint often considers it based on the benefit of the outcome. Accordingly, researchers have primarily studied potential conditions and consequences of customisation. For example, customer’s readiness to purchase customised products, willingness to pay for customised products, and willingness to pay a premium (Franke and Piller 2004; Franke and Schreier 2008; Franke, Schreier and Kaiser 2010). Duray et al. (2000) consider customer involvement as part of their classification of mass customisation, however, this consideration is focused on when the customer is involved and does not consider how customers are involved in the design of customised products.

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There has been significant effort by scholars in marketing to provide further understanding to the interactions between firms and customers in co-creation broadly, and specifically in customisation (Bacile, Ye and Swilley 2014; Miceli, Ricotta and Costabile 2007; Sugathan, Ranjan and Mulky 2017; Teichmann, Scholl-Grissemann and Stokburger-Sauer 2016). However, conceptual clarity on the roles customers take in the firm interaction in mass customisation remains unclear.

2.1.1 The varied strategies of mass customisation
Mass customisation involves the customer in multiple and often varied roles, so it is critical to understand each possible role the customer can take on. An analysis of existing mass customisation strategies captured by the literature has led to the development of a 2x2 framework displayed in Figure 1. This framework conceptualises four types of mass customisation, of which three terms are applied heavily in existing literature (co-production, co-construction and co-design), albeit in rather insular ways. That is, researchers have dealt with each of these types individually and inconsistently (e.g. Duray et al. 2000; Franke et al. 2010), without necessarily considering their interdependencies or conceptual relatedness. A systematic understanding that integrates these existing perspectives thus remains missing. Moreover, the proposed fourth type of mass customisation, while gaining traction in industry, has not been clearly conceptualized in the existing literature as a distinct type of mass customisation. This warrants further investigation given its theoretical and managerial relevance. For each mass customisation strategy, the potential customer roles and perspectives are identified.
A valuable way to consider a categorisation of mass customisation is across two key dimensions. The first dimension corresponds to the ‘stage of customer involvement’ and the second the ‘nature of involvement’, which help provide structure for mass customisation strategies. At one end of the ‘stage of customer involvement’ spectrum lies ‘development’, referring to situations where the customer is involved prior to product conceptualization. In contrast, ‘implementation’ refers to when the customer is involved after the base product design has been conceptualised. ‘Implementation’ involvement may include the final production or assembly of the product, and ‘development’ may include the involvement in the design process. The second dimension of mass customisation is the ‘nature of involvement’. Connecting this spectrum is whether the design of the final product and/or service is driven by the customer or the firm. For example, a firm-driven customisation is where the firm controls the design outcome of the product, such as with IKEA furniture, while the customer dominates the final product design in NikeID, as an example of ‘customer-driven design’. The development of these dimensions enables a coherent

*Figure 2-1: Matrix of Mass Customisation Strategies and Customer Customisation Roles*
systematisation of the differences and similarities amongst mass customisation strategies, resulting in four quadrants along the spectrum: co-production, co-design, co-construction, and co-configuration. It is important to note that while these dimensions indicate typical or dominant roles the customer can take, firms may seek to implement customisation strategies that encompass aspects of multiple strategies and which encourage customers to assume multiple roles or different roles at different points in time. Thus, while four dimensions are identified, they could be considered along a spectrum, occurring in a combination of strategies.

Researchers are seeking to develop appropriate classifications around co-creation and mass customisation activity, identifying typologies to classify toolkits and methodological approaches (Piller, Ihl and Vossen 2010; Steen, Manschot and De Koning 2011). In what follows, this paper takes a closer look at the three strategies which have been studied amongst the existing literature (co-design, co-construction, and co-production), providing a deeper conceptual understanding of how they fit into an integrative mass customisation framework, and highlighting the need to conceptualise and further theorise co-configuration as a specific yet theoretically underdeveloped strategy.

2.1.2 Co-production – customers as ‘Assemblers’
The first quadrant, co-production, describes a mass customisation strategy where the nature of involvement lies within firm-driven design, with the customer involved at implementation of the product. At IKEA, customers purchase flat pack furniture ‘kits’ and assemble them in their own home. The product itself has been designed by IKEA, only the final assembly of the product relies on the customer. With assembly typically occurring in the customer’s home, customer involvement occurs at the implementation stage. Customers take on the role of assemblers, fixing together
product parts provided by the firm. The idea of ‘hacking’ IKEA furniture is becoming more prevalent, with online blogs such as IKEA Hackers providing inspiration and ideas to repurpose and customise the brand’s furniture further. Customers are even able to submit their own ideas increasing user interactivity. This highlights the various extents to which a customer can be involved in the process; from simply assembling the piece of furniture as instructed by the firm, to ‘hacking’ a unique solution. Importantly, though, the core structure and design of the product is developed by IKEA, and therefore still exemplifies firm-driven design.

In co-production, customers have an active role as creators of the core offering, typically within a set of specific parameters set by the firm (Haumann et al. 2015; Thyne and Hede 2016). As identified by Haumann et al. (2015), co-production research can be broadly classified into three areas. The first area has primarily focused on the firm; identifying the benefits of firms engaging customers in the production process (Mills, Chase and Margulies 1983; Mills and Morris 1986). The second area has focused on why customers choose to engage in co-production activities (Dabholkar 1994; Dabholkar and Bagozzi 2002), and the third area has focused on the shift to psychological consequences arising from customers’ participation in co-production (Atakan, Bagozzi and Yoon 2014).

Previous researchers have investigated improving customers’ efficiency in their role as “partial employees” through employee management models (Bowen 1986; Kristensson, Matthing and Johansson 2008; Payne, Storbacka and Frow 2008). Existing research has also addressed the practical applications and limitations these models have on firms. It has been identified that customers who actively engage in co-production of a product experience more beneficial results than in traditional
production by a firm where customers take no part in the production process (Haumann et al. 2015). Despite having beneficial results, some customers are still more prone to engaging in co-production than others. For example, time is a major resource that customers need to contribute towards the co-production process, and research has shown that customers with more discretionary time are more prone to engage, and therefore more likely to experience the beneficial results of engaging (Etgar 2008). As well as having discretionary time, research on co-production has shown customers’ willingness to participate in co-production activities can be affected by their propensity for do-it-yourself projects (Dabholkar 1996) and self-efficacy (Xie, Bagozzi and Troye 2008).

Franke, Schreier and Kaiser (2010) identified that customisation can impact customer perceptions through the ‘I designed it myself’ effect. That is, participating in forms of co-production allows customers to feel that they are the creators of the product, incrementally increasing its perceived value through subjective ownership. Troye and Supphellen (2012) extended this research through the ‘I made it myself’ effect in the context of co-production. Their research found not only that participating in co-production improved the customers’ perceptions of brand image, but it also impacted sensory perception of the product. For example, customers were more likely to enjoy the taste of a meal kit if they had prepared the meal themselves rather than if they were offered a sample prepared by the firm. This is particularly relevant for organisations such as HelloFresh and Marley Spoon that offer meal kit delivery services. Active engagement of customers in co-production processes can enhance customer evaluation of the resulting product or service (Atakan, Bagozzi and Yoon 2014; Troye and Supphellen 2012).
Involving customers in production, however, does not always lead to positive outcomes. In fact, higher levels of co-production intensity can sometimes lead to less satisfactory experiences with the co-production process (Haumann et al. 2015; Troye and Supphellen 2012). In their experimental study of assembling flat pack furniture, Haumann et al. (2015) found there was a negative association between co-production intensity and customer satisfaction with the co-production process. This negative impact was alleviated when the economic benefit to customers of participating in co-production was communicated. Furthermore, their research showed that another way to mitigate this adverse effect is to provide immediate support to customers (such as via interactive online support systems) in the production process. As co-production is primarily undertaken by the customer without direct contact from a service employee, it can be difficult to provide this immediate support.

An analysis of existing literature has identified co-production as the first quadrant of mass customisation characterized by customer involvement in the implementation stage, and firm-driven design. While co-production provides benefits to the firm and customer, there are still resource implications, such as time, money and esteem-related issues that need to be considered when implementing this mass customisation strategy.

2.1.3 Co-construction – customers as ‘Inputters’

The second quadrant, co-construction, is characterized by firm-driven design with customers involved in the development stage in the customisation process. For example, a customer may go to an architect to develop plans for a house. The customer initiates the process driven by a specific need and is thus involved at an early stage. However, the architect retains control of the design as the customer
might not have a clear picture of the desired outcome, nor have the necessary skills required to develop it. Without the customer’s involvement, the architect cannot meet the customer’s demand for an individually designed product. Choosy is also an example of co-construction, which integrates artificial intelligence (AI) to gather customers’ input through their interaction with fashion trends in online media to curate and customise weekly fashion capsules (Friend and Houghton 2018). This fits with the existing definition of co-construction, which is defined in the literature as: the involvement of the customer in rapid prototyping, customer experimentation, and flexible manufacturing to construct a product that meets the needs a customer projects when the customer does not have a clear picture of the final product (Udwadia and Kumar 1991). Customers take on the role of inputters, directly adding input to the customisation process early on, such as time and information about their needs.

As a concept, co-construction experiences have been widely studied in marketing literature (c.f., Prahalad & Ramaswamy 2004; Schembri 2006; Tumbat & Belk 2013). The extant literature in this area has predominantly focused on how the active participation plays out in a firm-designed and built environment (Tumbat and Belk 2013). While research has identified that processes in customisation have typically been linear, co-construction is iterative; the customer and firm have a continual dialogue from very early stages, and the customer imparts expertise and knowledge throughout the development of the product (Udwadia and Kumar 1991). This finding is supported in more recent literature. For example, Tumbat and Belk (2013) found customers and firms rely on their interdependent competencies. It is the skills and knowledge of both sides (firm and customer) that help shape the outcome for everyone.
Further research identified that without the user’s deep involvement, a firm would not be able to adequately customise and individualise to fulfil customer demands (Ulrich, Anderson-Connell and Wu 2003). For example, without the customer’s input in the co-construction process, the firm would be guessing the customer’s needs, and not be able to satisfactorily meet their individual needs.

The second quadrant, co-construction, has been identified and studied in the area of mass customisation, and the existing literature covers customers’ involvement in the early development stage of involvement and firm-driven design strategy of mass customisation.

2.1.4 Co-design – customers as ‘Designers’
The third quadrant, co-design, involves the customer at the development stage and allows the customer to drive the design. For example, LEGO Digital Designer allows customers to propose and build LEGO models using virtual bricks in a computer-aided design manner. The idea is to stimulate, translate, and harness customers’ imagination and creativity. Customers have complete design control with access to LEGO bricks and pieces in many colours to build any model imaginable. Co-designing requires control be relinquished by the firm and be given to customers (Nielsen 2011).

Co-design has been used broadly to mean creativity shared by two or more people (Sanders and Stappers 2008), more specifically, co-design refers to designers working with customers not trained in design, to work together in the design development process. More recent research by Smith, Blair and Cooper (2012) extended Sanders and Stappers (2008) definition of co-design to encompass the customer perception of being involved. Based on this, co-design in this paper is
defined as customers not trained in design, working with, or perceiving inclusion with, designers during the design development process.

Co-design has been extensively studied within the context of mass customisation (Nielsen 2011; Piller and Müller 2004; Sanders and Stappers 2008; Smith, Blair and Cooper 2012; Steen, Manschot and De Koning 2011). Much of the literature has investigated satisfaction from the customer and firm perspective. Early user involvement improved satisfaction for both the customer and the firm. This is due to customers communicating directly with the firm, rather than allowing information to filter and the message distort through different channels (Kujala 2003). Kristensson and Magnusson (2010) found that customers can generate ideas that are more innovative and better matched to their needs than ideas generated by professional developers. However, the professional developers’ ideas are more technologically feasible for the firm; thus highlighting the importance of striking a balance between customer-generated ideas, and technologically feasible capabilities.

A review by Roser and Samson (2009) identified the benefits of co-design include access to a wider source of customers’ experiences which increases idea generation, better quality of products and therefore higher satisfaction of customers, increased customer loyalty, higher perceived customer value for future co-design, and increased intention to co-design. Furthermore, they identified several positive effects on the organisational level in terms of the impact on traditional innovation processes, quality, and speed of decision-making to filter ideas, and creativity at the individual and group level.

While co-design is based on the premise that customers and firms work together, it has been identified that co-design does not necessarily involve the customer and the
firm or designer working together at the same time (Smith, Blair and Cooper 2012). This collaboration can be undertaken through interactive mediated systems at different points in time (Carolan and Cruickshank 2011), such as the example of LEGO Digital Designer. LEGO maintain the computer-aided design platform and provide guidance on how to design, but this action is distinct from the customer using the tool to design and create. Customers are often not able to directly experience the benefits of the final product during the co-design process. This is also a result of the actual product or service that is being designed by the customer not always being available in the co-design process, except in the re-designing of an existing product or service. The benefit customers are likely to perceive, are experienced after the product or service is developed and provided by the firm (Steen, Manschot and De Koning 2011).

The literature on co-design continues to evolve with different focuses on products, and new service development, however a review of the existing literature shows co-design as customer involvement at the early development stage, and a customer-driven design process, which fits in the third quadrant identified in this paper.

2.1.5 Conceptualizing co-configuration – customers as ‘Selectors’

The final quadrant, co-configuration, involves the customer at the implementation stage of involvement but gives the customer design control. In order to achieve this, the firm selects a ‘base’ product and a number of attributes, or components for the customer to choose from in order to develop their customised item/product. Importantly, here design can refer to either aesthetic or functional design. NikeID is an example of aesthetic design, the customer chooses a ‘base’ shoe and can then customise various aspects, such as the fabric, colours, laces, and even add a name or initials to the shoe. Functional design includes DELL, which has been used as a
common example in the study of mass customisation, where the customer chooses from functional components to design a computer that meets their specific requirements.

The term this paper applies for this type of mass customisation is co-configuration, which is defined as the customer designing a product or service from a pre-determined set of components. This has been adapted from a definition previously used by Duray et al. (2000) to define co-design. The reason for adapting this definition, is that the word ‘configuration’ more accurately describes the activity of selecting from a pre-determined list to design a product they are satisfied with from a finite number of combinations, rather than ‘designing’, which usually implies developing a new design from scratch. Co-configuration involves the customer at the implementation stage of the process, and the customer drives the final product design.

A recent study by Teichmann, Scholl-Grissemann and Stokburger-Sauer (2016), while applying the term ‘co-design’, investigates the interaction between firm and customers using interactive configuration toolkits during the configuration process of a customised product, and discusses the importance of this process for interactive marketing strategies. They find different levels of ‘co-design’ exist, further providing support for the clear conceptualisation of co-configuration as a late involvement, customer-driven design strategy. This thesis argues that Teichmann, Scholl-Grissemann and Stokburger-Sauer (2016) study is an important step in in the identification of co-configuration as a distinct form of mass customisation. Importantly, this study also investigates the impact customers participating in this
form of mass customisation has on increasing attachment to customised products and the additional money customers are willing to spend on their purchases.

A simple example of co-configuration can be seen in products such as from The Daily Edited, a company that sells leather accessories with the option of adding initials or a name stamped into the leather in various positions, as well as choosing from alternative zip colours and types. A more complex co-configuration product is Shoes of Prey, a custom shoe manufacturer that allows customers to customise their “perfect shoe” by having them choose from five shoe styles including heels, flats, sandals, boots, and sneakers and then giving them the opportunity to select fabric, style, heel height and design features from a list predetermined by the company. This results in many thousands of different combinations that customers are able to configure. These are just two examples of co-configuration. Since it is becoming increasingly common, there is a need to clearly define this area of research, not only academically, but practically, in order to advance our understanding of this form of mass customisation.

Co-configuration is highly relevant for services such as that offered by health insurance providers. For example, some health insurance providers offer modular options for health insurance policies, allowing customers to customise their perfect level of cover to meet their needs. This is in contrast to traditional insurance where the policies were fixed, customers now have the ability to select their coverage for hospital and ‘extras’ separately, including adjusting for the services they require more of, such as physiotherapy for athletes, or optical if one wears glasses.

In all of the examples above, the company has predetermined the options that are made available to the customer, and offers an interactive and dynamic platform for
the customer to choose the final design. This is distinctly different from co-design which involves the customer in an earlier stage of the product innovation and design process. Co-design brings the customer in early so the customer can influence the product design from the beginning (Sanders and Stappers 2008), whereas co-configuration involves the customer at a later stage after the firm has developed a range of components from which customers can configure their design. Co-configuration is also clearly distinguishable from co-production. In the example of IKEA, the customer assembles the furniture from a pre-prepared kit, whereas with co-configuration the customer selects the components that will make up their final product for the firm to produce. While they both happen at the implementation stage, co-configuration allows customers to drive the design of the final product. In our proposed framework, co-configuration is opposite to co-construction. The customer drives the design and is involved at a much later stage in the customisation process.

2.2 Theoretical implications and future research directions

While mass customization has been extensively studied and has made significant progress, the current state of theorizing remains rather puzzled. Researchers to date often use terms interchangeably or omit important nuances from both a theoretical and practical perspective. Despite the risk of conceptual enmeshment, insular streams of research on the topic contribute to studying seemingly independent parts rather than advancing the integrated whole. Against this background, this paper takes a critical step toward a more holistic yet simultaneously granular perspective on mass customization. In doing so, the paper furthers the conceptual contributions of ‘explicating’ and ‘relating’ theoretical concepts proposed and called for by MacInnis (2011). The research ‘explicates’ by delineating and synthesizing key forms of mass customization to the design of market offerings. It further ‘relates’ by
differentiating and integrating mass customization strategies, showing how these aspects form a greater whole yet warrant individual attention. Through a review of the existing literature, this paper identified that three of the four types of mass customisation have been studied to various degrees, yet from a rather insular (as opposed to an interrelated) perspective, resulting in a lack of a framework that links these strategies of mass customisation. This paper proposes a fourth type to complement existing perspectives, and provides a more holistic framework and understanding. This fourth type of mass customisation (i.e., co-configuration) has not been clearly differentiated in existing frameworks, but is increasingly being offered in the marketplace (He et al. 2016). An advanced understanding manifested in the proposed matrix enables more precise theorising, as researchers can more clearly identify, relate, and build on alternative mass customisation types. Importantly, while these strategies are considered from the customer perspective, firms may combine two or more of the approaches in order to meet customers’ individual needs. Therefore, this framework considers the types of mass customisation on a spectrum and are not mutually exclusive categories. Table 2-1 displays a summary of these four mass customisation strategies.
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<td><strong>Customer Customisation Role</strong></td>
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<td><strong>Nature of involvement</strong></td>
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Next, this paper focuses on outlining an agenda for future research and illustrate key research questions in view of better understanding specifically the co-configuration concept.

### 2.2.1 Antecedents to co-configuration

The Technology Acceptance Model (TAM) (Davis 1989) has been used extensively in mass customisation research to predict customer behaviours (Chen and Tan
2004; Koufaris 2002; Lee and Chang 2011; Lee et al. 2011). However, other general theories to predict behaviour, such as Theory of Planned Behaviour (TPB), could also be applied. TPB suggests that intention to perform a behaviour can be predicted in part by attitude, subjective norm, and perceived behavioural control (Ajzen 1991), and that attitude in isolation is not enough to predict intention to undertake a behaviour. These factors may be highly relevant to the setting of mass customisation, particularly co-configuration. For example, subjective norm is part of TPB but not TAM, and the personalised nature of co-configuration may mean it is highly influenced by external social pressures. Therefore, there is a need to expand on existing research that has considered attitude towards customisation only through TAM.

There is also the need for further research to consider other antecedents of participating in co-configuration given the interactivity of this customisation offering. For instance, in the area of mass customisation, perceived usefulness, product involvement, and need for uniqueness have been used as measures of attitude, and also antecedents to attitude. These three factors have each been shown to influence mass customisation in a general setting (Franke and Schreier 2008; Homburg, Schwemmle and Kuehnl 2015; Koufaris 2002). For example, several studies in mass customisation have found perceived usefulness to have a significant impact on attitudes towards online retailers (Koufaris 2002; Lee and Chang 2011; Tang, Luo and Xiao 2011). It is important to establish if these factors have a similar impact in the context of co-configuration, and if any of these factors may be a stronger predictor of co-configuration behaviour.
Godek and Yates (2005) researched the effect of perceived behavioural control (PBC) in the customisation of Dell computers, manipulating both perceived and desired control. They found that when the customer’s desired ability matched the actual control of a situation, PBC positively influenced the customer’s evaluation of the process (Godek and Yates 2005). Previous research also found PBC to have a positive effect on the intention to customise products to improve performance (Koufaris 2002; Lee and Chang 2011). It is important to investigate whether these antecedents have the same impact in a co-configuration setting when the product design is being manipulated, and if the desired control is higher in a design setting.

In addition to elements of the customer-related factors discussed above, further research needs to consider if the specific brand offering co-configuration has any impact on participation in co-configuration. In previous research, brand love was found to have a significant impact on brand loyalty (Batra, Ahuvia and Bagozzi 2012; Carroll and Ahuvia 2006; Fuchs, Schreier and van Osselaer 2015). Carroll and Ahuvia (2006) highlighted that while their study reported almost all of the respondents truly loving at least one brand, more research is needed in generalising results to other types of consumers and product categories. Further, Townsend, Kaiser and Schreier (2015) proposed specific calls for action in customisation research and highlighted the need for studies investigating how customisation relates to branding. Thus, highlighting the importance of considering the interplay of brand in this space.

This research proposes investigations into whether these constructs would have the same relationship in a co-configuration setting. For example:
1. Is TAM the best model to use when analysing co-configuration from a product design perspective? To what degree do more general models provide a more holistic view?

2. To what degree do factors such as brand love and product involvement influence a customer’s likelihood to participate in co-configuration?

3. To what degree do any of the antecedents already identified in existing studies of mass customisation have the same or similar relationship with regard to intention to participate in a co-configuration setting?

Additionally, extant literature on mass customisation has identified the best way to implement customisation toolkits from an operational viewpoint, but has treated customers as homogenous. Further research should not only investigate the antecedents to co-configuration, but also investigate if these differ by customer type. For example, co-configuration may be the preferred mass customisation solution for one type of customer, whereas another type of customer may prefer participating in co-design. Answering these questions will provide important insights into the factors that most strongly influence customer’s participation in co-configuration.

Rather than relying on a single existing theory, a new conceptual model should be developed for a number of reasons. Firstly, the literature review above highlighted a variety of factors which may influence participation in co-configuration. These range from psychographic factors, factors related to attitudes and beliefs towards co-configuration, and even aspects of co-configuration toolkits themselves. Hence, relying on a single existing theory would limit the understanding of co-configuration as a behaviour. Second, combining aspects of existing literature and theories into a combined conceptual model provides an opportunity to test the relative impact of
various factors. For instance, the model will be able to test whether general psychographics or specific beliefs about co-configuration are more influential in driving participation in this behaviour.

2.2.2 Outcomes of co-configuration
A recent study by Homburg, Schwemmle and Kuehnl (2015) considered three dimensions of new product design on purchase intention and found that customers’ intention to purchase was influenced by aesthetics, functionality, and symbolism. Importantly, it was the first study to consider symbolism in a new product design setting. However, the study did not consider the impact of the customer being involved in the product design process and how this interactivity could change the perception of these dimensions for customers. That is, while the factors of aesthetics, functionality and symbolism were suggested as reasons to purchase, this research did not test whether the resultant purchase actually delivered the desired outcomes.

As identified by Hollebeek, Glynn and Brodie (2014), brand engagement is an emerging concept that warrants further investigation. Their study provided the first known empirical study of this concept, and has been found to have a positive impact on self-brand connection and brand usage intent (Hollebeek, Glynn and Brodie 2014). A key antecedent to brand engagement in previous research is consumer involvement. An alternative brand related factor to consider is brand experience, which has also been shown to be relevant in driving customer behaviour (Brakus, Schmitt and Zarantonello 2009). Therefore, brand related concepts are important factors to consider in regards to co-configuration.
There has been strong empirical support in previous literature to show that if customers have been satisfied with a product, they are more likely to repurchase (Anderson and Sullivan 1993; Hellier et al. 2003; Patterson and Spreng 1997). As this research is investigating customer’s participation in co-configuration, it is relevant to investigate whether participating in co-configuration will increase repurchase intention. Therefore, further research could consider:

1. To what degree does co-configuration impact customer perception of product outcomes in an interactive setting and in what way(s)?

2. To what degree does co-configuration impact brand related outcomes and in what way(s)?

3. To what degree does co-configuration impact re-purchase intention and in what way(s)?

As research has primarily focused on antecedents of customising products, expanding the research focus to consider outcomes will not only add to the development of a nomological network for co-configuration, but can also set the stage for investigating outcomes in a broader mass customisation setting.

2.2.3 An optimal co-configuration level

Another area that future research should consider is the extent of co-configuration that firms should provide. Offering more configuration options could require higher investment and increase production costs for firms. For example, offering one additional pre-set component could increase the final product combinations dramatically, and in turn increase production costs.

Co-configuration can provide customers with options that they want, however, a large number of choices or a variety of configuration options may leave the customer
overwhelmed or confused with the complexity of the customisation offering (Huffman and Kahn 1998). Due to the numerous options to consider, customers can experience confusion or perceived complexity because the task of customising is difficult (Huffman and Kahn 1998; Malhotra 1982). For example, where two firms are customising shoes, if firm A offers a product with fewer configuration options and firm B offers a more extensive configuration platform, do the customers get the same benefit from customising each product? This area links strongly back to identifying antecedents, and how co-configuration complexity could impact the antecedents identified above, such as perceived behavioural control. Therefore, to understand the optimal level of co-configuration, future research will need to explore:

1. To what degree does a more extensive level of configuration provide greater perceived benefits?
2. If there are too many options, does the customer become overwhelmed and, if so, at what point(s) given the increase in interactive consumption and stimulation for customers?

Future research may also need to consider the optimal customisation level across product categories and brands. For example, a customer purchasing co-configured shoes, may seek a wider range of options than when co-configuring a leather notebook. Similarly across brands, a customer co-configuring Nike athletic shoes may have different needs than when co-configuring fashion shoes from Shoes of Prey. Not only could the type of shoe impact the co-configuration level, but the brand attributes could also play a role in altering the optimal customisation level from a customer's perspective.
2.2.4 The impact of virtual reality and artificial intelligence

Immersive multimedia and computer simulated reality of virtual reality (VR) and providing superior experiences for customers through the use of Artificial Intelligence (AI) is an important consideration in an increasingly interactive environment for customers. Customers can be immersed in seeing the customised product come to life rather than seeing a static image on a page, and AI can be introduced to assist in the decision-making process, similar to what Choosy has done. Quite often, the customisation process is time intensive for customers; learning what is possible, testing solutions, learning from mistakes, and then comparing what they like. The introduction of AI could simplify this process, relieving some of the time investment and reduce the choice complexity. Wang and Tseng (2011) experimented using AI to adapt the configuration options offered to customers, uncovering a new perspective to understand configuration toolkits. This technology may change the impact some factors have on customisation, such as perceived behavioural control or perceived usefulness of the customisation platform.

The act of co-configuring a product or service utilising VR and AI could also draw on ‘play’. Huizinga (1949) defined play as unserious, voluntary, and captivating activity that is different to ordinary life. Play assumes the opposite of efficacy and utilitarianism, establishing the activity as a hedonic pursuit ‘for its own sake’ (Holbrook et al. 1984). For example, a customer might perceive the act of co-configuring through VR and AI as purely hedonic enjoyment, and they may not follow through with the purchase. This is an important aspect to consider. While the extent to which these technologies can be implemented is an important factor to consider, questions around VR and AI specific to co-configuration are:
1. How can VR be leveraged so customers better understand the context of their co-configuration?

2. How can AI be used to optimise and facilitate co-configuration, adapting to dynamic customer needs?

3. How might customers use VR and AI for hedonic enjoyment?

4. How might the implementation of VR and AI technology impact the profitability of co-configuration?

With the rapid evolution of technology and accessibility of VR and AI to customers, these factors are important to consider in the impact they have on customer participation in co-configuration.

2.2.5 Balancing ethical considerations and IoT technology

There are social considerations that arise from the additional effort customers exert when participating in such activities as mass customisation (Arvidsson 2011; Ritzer and Jurgenson 2010), with Arvidsson (2011) suggesting self-expression as the main motivation, and community contribution as the main measure of value in social production. Arvidsson (2011) also highlighted that young radicals participate in social production, but as they get older, they shift their focus and evolve their behaviour into capitalist actions and participate in co-creation. This has led to the successive capitalist transformation of the social environment. Through these actions, the customers are becoming involved as either employees of the firm without monetary benefit, or generate value in other ways (Ritzer and Jurgenson 2010).

Despite the value some customers derive from participating in customisation activities, Smith (2013) highlighted the need to consider customers’ negative encounters during co-creation, defined as value co-destruction (VCD). Resource loss
was found to be a strong driver of VCD, not only with monetary loss, but factors such as time and esteem were perceived to cause co-destruction for customers. Quite often, organisations misuse their own resources, and in turn, do not meet the value proposition for the customer.

In addition, ethical considerations with regard to the dark side of the Internet of Things (IoT) is important to consider (De Cremer, Nguyen and Simkin 2016; Balaji and Roy 2017). Customers co-create value through their interaction with IoT technology, particularly in retail settings (Balaji and Roy 2017). However, De Cremer, Nguyen and Simkin (2016) highlighted the dark side of IoT technology in eight areas, two of which raise ethical considerations in the context of mass customisation – information misuse and privacy issues. The authors identified information misuse stems from the increasing amount of information available about the customer in order to serve them better. This information is then used in ways customers do not approve of, or are unaware of the extent of the use. As customisation involves giving highly personalized, unique information about the customer, firms could take the opportunity to use this to their advantage, overpowering the customer.

Firms are readily able to access transaction records, and observe customisation usage behaviour. This empowers firms with more knowledge about the customer’s sensitive information which may also be used unethically. De Cremer, Nguyen and Simkin (2016) highlighted the privacy issue whereby firms learn more about the customer than desired, and use this in unwanted and intrusive ways, such as through pop-up ads or unsolicited emails. The final IoT technology consideration important to acknowledge is manipulating transaction-based behaviour. This can be
done through offering customisation variations with ‘hidden’ and unexpected costs. Therefore, the following questions are proposed to address in this area:

1. What are some ethical considerations for each role in mass customisation, specifically co-configuration?
2. How can IoT technology be used to optimise and facilitate co-configuration for the customer?
3. How do customers feel about their interaction with IoT technology in co-configuration?

2.2.6 Co-configuration profitability
The final area that should be addressed relates to how offering co-configuration impacts firm profits. Existing literature suggests the best attribute to customise is one that no other firm is already customising, as this mitigates price discounting (Syam, Ruan and Hess 2005), however, is it profitable for a firm to customise any attribute that no other firm does? For example, firms might not already be offering that attribute for customisation as there may be little demand in the market, reducing the potential profitability in offering that customisation option. It is important to consider how firms can leverage co-configuration as a mass customisation strategy compared to the three existing strategies. Therefore, there are still such questions remaining as:

1. To what degree does offering co-configuration make customers more likely to buy, or buy more frequently?
2. To what degree are customers willing to pay a premium for co-configured products? How can companies understand potentially acceptable price
ranges, while simultaneously covering the costs associated with the complexity of co-configuration?

Prior research has identified factors such as brand uniqueness that impacts customer's willingness to pay a price premium across a variety of high purchase volume product categories including soft drink, toothpaste, athletic shoes, and jeans (Netemeyer et al. 2004). It is important to understand if similar factors also impact customer's willingness to pay in a co-configuration setting for different product categories, while not neglecting internal cost considerations.

2.3 Conclusion

The aim of this paper is to build the conceptual foundation for customisation strategies by way of an integrative and coherent framework that informs marketing theory through its detailed perspective. In doing so, this paper crystallizes four distinct strategies of mass customisation. The current review revealed that existing literature has investigated specific mass customisation strategies; it outlines the need for exploring 'co-configuration' among other customisation strategies, then contributes a matrix that compares and contrasts the existing well-known and studied areas of mass customisation, against the newly developed concept of 'co-configuration'. Furthermore, this paper proposes a framework and future research agenda for further investigation of co-configuration, such as to understand what drives customer intention to participate, and how co-configuring products impacts the perception of outcomes and brand engagement. This paper also proposes investigations to determine the optimal level of co-configuration that firms should offer, as well as explore questions around the inclusion of technology such as VR, AI and IoT and how this would impact the factors affecting customer participation in an
increasingly interactive and over-stimulating environment. To distinguish co-configuration from other mass customisation strategies, an analysis of the current research climate, and an agenda for further research to advance the theoretical basis of mass customisation is provided, not only for academic application but also for practitioners.
Chapter 3: Should firms offer co-configuration? Understanding customer segments in online customisation

3.0 Introduction

Amazon Custom allows sellers to list products with customisation options and customers select the customisation details required at the point of purchase (Dawson 2018). Amazon have also been exploring the possibility of selling customised clothing online, with items tailored to the measurements of individual customers. Amazon is by no means the first, nor will it be the last company to integrate customisation into their product offering. Brands including Nike allow users to immerse themselves in computer-simulated environments where they can customise their own sneakers (Clark 2015), and cosmetic company Lancôme have developed customised foundation using three different scans of a customer’s skin tone. These examples demonstrate how customisation is becoming a part of consumers’ everyday life and of firms’ strategic choices.

There is a clear demand for mass customisation from customers too. It is estimated that 62% of online shoppers in the US have chosen, recommended, or purchased a brand that provides a customised experience or service (Walker 2017). Furthermore, a study by Deloitte (2015) found 25% of customers are willing to pay a price premium of 20% or more of the product value for customised products, and 45% are happy to wait longer to receive their customised product. If just 25% of online footwear sales were customised, this equates to approximately US$2 billion per year (Bain & Company, 2013), indicating the impact mass customisation can have on revenue streams for organisations. Clearly this opens up important strategic opportunities for firms.
Firms offering customisation have faced barriers in converting customers from ‘playing’ on their customisation tool to purchasing customised products, but evidence suggests that price is not necessarily a barrier to product customisation. As previously established, some customers are willing to pay a 20% price premium for customised products (Deloitte 2015) with academic research supporting the connection between customisation and willingness to pay (Franke and Piller 2004; Piller and Müller 2004). Given conflicting or inconsistent organisational experiences and academic findings in this context to date, it is necessary to theoretically and practically understand the factors that separate customers from being merely interested in customisation, to following through with the act of purchase by reducing or eliminating potential barriers. This in turn would enable firms to better align with markets and achieve strategic fit.

While configuration theory has traditionally been applied to understand the set-up of internal resources for better strategic fit, this thesis argues that understanding the configuration of customer types is vital for competitive advantage. As configuration theory posits, firms may optimise their internal resources to best serve the needs of different market configurations. Applying this logic, it is expected that different customer configurations, or segments, will exist in customisation. This paper applies latent class analysis to explore customisation behaviour, and uncover any differences in customer types that exist in a specific co-configuration context. Against this backdrop, brands would be better served by knowing exactly how customer demands and preferences vary, underpinned by strong theoretical reasoning. Specifically, there is a need for a detailed understanding of customers based on their desire for, and actual, customisation behaviour, extending to incorporate behavioural and psychographic covariates. Such information would assist brands in making
sense of how these customers differ and better predict important outcomes of their
participation; for example, recently Homburg, Schwemmle and Kuehnl (2015)
introduced the new product design (NPD) factors including aesthetic, functional, and
symbolic success elements. To what degree does customisation actually contribute
across potential customer types to the success of NPD? From a strategic
perspective, this would allow for a better theoretical understanding of the benefits
associated with identifying and aligning with various customisation types. Two
research questions guide this study: Applying a configuration theory lens, what
customisation segments emerge and deserve strategic prioritisation? And how does
customisation segment membership alter perceptions of NPD factors?

This paper makes several contributions to the marketing literature. By applying a
configuration theory approach, this paper first conceptualises and test a model
concerning customisation types from a customer perspective. In doing so, this paper
enhances theoretical understanding of how segment thinking is increasingly relevant,
even in environments that seek to cater to individual customers through
customisation. This paper demonstrates factors that impact segment membership,
and drive customisation value for different customer types. The research then
investigates how different marketing configurations impact NPD factors (Homburg,
Schwemmle and Kuehnl 2015), ultimately driving value for customers. The
managerial implication for this research allows firms to better understand and
manage for customer types and to increase the chances for meaningful
customisation strategies. Indeed, this research will help managers recognise
conceptual differences that translate into behavioural outcomes and likely greater
new product design success.
3.1 Customisation: the current state

In this paper, mass customisation is defined as a form of micro-segmentation, allowing firms to satisfy the needs of individual customers (Hunt, Radford and Evans 2013). With the increase of new technology in production and customer interfaces, firms are able to more easily develop strategies that allow delivery of customised products to consumers in a timely and affordable way (Hunt, Radford and Evans 2013). This has led to increased research both from an operational perspective and from the perspective of better understanding customers.

3.1.1 Operational and managerial considerations

The majority of academic literature in customisation focuses on the operational and managerial processes and implications of embedding customisation into the product and service offering (Franke and Von Hippel 2003; Gilmore and Pine 1997; Pine 1993; Syam, Ruan and Hess 2005). Gilmore and Pine (1997) developed the ‘Four faces of customisation’ framework, specifying four ways in which organisations can implement customisation into their product and service offering. The authors highlight four approaches to customisation that maximise value for the lowest possible cost. Critically, this framework considers mass customisation types as being distinct from the organisations’ perspective, but neglects to understand if there are different customer types participating in customisation.

More recent research tried to understand the implementation of toolkits from a customer viewpoint. Hildebrand, Häubl and Herrmann (2014) found customisation via starting solution (CvSS), as opposed to attribute-by-attribute customisation, enhanced mental simulation of the product, decreased perceived complexity of the product customisation, and resulted in more feature rich products being customised.
This also led to an increased satisfaction of the customised product purchase. Importantly though, existing research has been primarily hypothetical in nature; that is, creating scenarios for customers to imagine themselves in. Hence, research to date taking the customer perspective is relatively limited and strategic implications are rather inconclusive; there is accordingly a need to understand customisation from the viewpoint of actual customers who are purchasing customised products and/or services and how this in turn creates value.

3.1.2 The view of the customer
When considering the customer viewpoint, research has explored the impact customisation has on customer satisfaction (Lee et al. 2011) and customers’ attitude towards customisation (Lee and Chang 2011). Beyond answering customers’ general satisfaction and attitude, customisation can also impact a customer through the ‘I designed it myself’ effect (Franke, Schreier and Kaiser 2010). Customisation allows customers to feel like they are the creator of the product which incrementally increases their perceived value through subjective ownership. This suggests an opportunity for further research to not only examine the drivers of participating in customisation, but also what impact this may have on the customer and their perception of product outcomes. Moreover, employees of firms are not necessarily consumers or users of their product or service offering, so they might misinterpret or remain unaware of customers’ true needs (Franke, Von Hippel and Schreier 2006) and how this creates value (Leclercq, Hammedi and Poncin 2016). More recent research has investigated customer attitudes through the application of the technology acceptance model (TAM) (Lee and Chang 2011) and customer satisfaction with internet apparel sites specifically (Lee et al. 2011). Lee and Chang (2011) applied TAM as a framework for identifying customer attitudes towards
customisation. Interestingly, existing studies taking the perspective of the customer still consider customers participating in customisation as a homogenous group with common needs.

3.1.3 One size does not fit all
Research conducted in customisation has often investigated only one solution at a time as the best way for firms to engage customers and offer customisation into their product and service offering. The views these studies take treat the populations who are participating in customisation activities as the same, assuming identical needs and preference structures. This is problematic as it leads to conflicting findings in extant literature and inconclusive theorising. For example studies have found the optimum solution for firms to implement attribute-by-attribute customisation (Franke, Schreier and Kaiser 2010) but more recent research suggests that customisation via starting solution is better for overcoming choice complexity (Hildebrand, Häubl and Herrmann 2014). Both solutions posit only one ‘optimum’ way to offer customisation to all customers and yet they are vastly different from each other. It is known already from early marketing literature that populations are not homogenous, and customers participate in consumption activities differently and with varying reasons for participation (Claycamp and Massy 1968; Holt 1995). More recent research also emphasizes customers are no longer accepting a “one-size-fits-all” experience (Wilder, Collier and Barnes 2014). As a consequence, theoretical frameworks currently fail to account for and explain customer differences in customisation contexts and potential consequences.

The current one-size-fits-all theoretical basis marginalises heterogeneity in consumption practices and meaningful insights to better understand and explain firm success. This also reflects a broader shift in research focusing on a person-centred
approach (e.g. cluster analysis, and latent profile analysis), as opposed to a variable-centred approach (e.g. structural equation modelling). That is, the person-centred approach leads to identification of meaningful customer types or segments within a population, allowing for the possibility that customers experience products and services differently, and in different combinations of variables (Kam et al. 2016; Wang and Hanges 2011; Meyer, Stanley and Vandenberg 2013). At the other extreme end of the spectrum, research posits marketing to segments-of-one, emphasizing that every customer is unique and any type of meaningful group cannot be created. This paper questions this theoretical assumption and in contrast proposes that segment thinking is relevant even in context of customisation which potentially produces units of one.

To this end, clear and coherent theorising is needed to address previous assumptions in relation to understanding the customer perspective. Configuration theory, while traditionally applied to understand the set-up of internal resources for better strategic fit, allows researchers to express complicated and interrelated relationships within systems such as organisations without resorting to artificial oversimplification of the phenomenon (Dess, Newport and Rasheed 1993; Hambrick 1983; Mintzberg 1973). Configuration theory investigates “the degree to which a business's marketing organisation differs from that of an empirically derived ideal profile that achieves superior performance” (Vorhies and Morgan, 2003, p.100). Ideally, organisations understand and influence their environment to achieve strategic fit, for example, by way of structure, leadership and strategic resources in order to better align with conditions of complex and dynamic market structures (Dess, Newport and Rasheed 1993; Vorhies and Morgan 2003). Configuration theory helps to solve some of the difficulties in articulating multilayered constructs and
relationships among them. Fang, Palmatier and Grewal (2011) investigated the impact of integrating customer innovation assets on firm performance through a configuration theory lens. The authors argue that excluding the customer innovation assets from the organisation structure, isolates a critical dimension in enhancing firm performance. That is, in order to enhance internal strategic fit, a firm must also create the appropriate external value through assets that are interdependent.

Customisation involves complex dimensions for both the firms offering and customers participating in customisation, with the customer actions inseparable from the internal customisation process. A firm cannot offer customisation without input from the customer. This highlights the usefulness of applying configuration theory as a lens to understand how customisation markets are best configured for enduring success.

A useful tool to identify, analyse and understand market configurations is through studying customer types and applying segmentation. The use of this method may help capture organisational reality in a more meaningful way. This paper argues that while configuration theory has primarily been used to understand internal organisational structures, understanding customer segments represents market elements that organisations need to also best configure their products and services for in order to maximise competitive advantage. Thus, each of the core segments could be seen as a different configuration.

Not only is it critical to establish customer segments, but also to understand the impact segment membership has on specific outcomes of customisation as ultimately firms need to resource the production of these customised solutions.

Homburg, Schwemmle and Kuehnl (2015) investigated how NPD factors –
manifested in aesthetics, functionality and symbolism dimensions – impact factors such as purchase intention and word of mouth. The authors state that “further research might explore when and how the three product design dimensions vary in influencing distinct outcomes of consumer behaviour” (Homburg, Schwemmle and Kuehnl, 2015, p.53). This emphasises the importance of understanding first what impacts these factors across different segment configurations. There is accordingly little research providing insights into specific antecedents of the NPD; in particular, if the customisation of a product changes how different customers perceive the aesthetics, functionality and symbolism of products against a standard ‘off the shelf’ solution. This in turn could have a significant impact of the value customers derive from the customisation process.

In summary, research on customisation to date is firm-centric. Studies taking a customer perspective provide limited and inconclusive insights given inconsistent behaviour across customers in transitioning from customising through to purchasing (Piller and Müller 2004). Moreover, the implications for NPD across market configurations remains unclear. Therefore, the aim of this paper is to advance theoretical understanding in the specific context of co-configuration, as a type of mass customisation. Specifically, applying configuration theory this research aims to provide a more comprehensive and fine-grained understanding of customisation, more specifically co-configuration, from a customer perspective, how different segments engage with customisation through their purchase behaviour, and understand the driving factors of this participation and subsequent outcomes of participation, as a basis for better strategic fit.
3.2 Configuring customisation: a conceptual framework

In order to understand customisation behaviour, and to achieve the aim of identifying what kind of customer segments exist in customisation, it is critical to distinguish between different kinds of customisation behaviour. To this end, it is important to consider the recency of the customised purchase, and the frequency with which customers purchase customised products in order to understand differences, if any, between behaviours. According to adaption-level theory (Helson 1948), an individual’s response to a task is based on past experience, context and stimulus. More recently, a study by Langdon, Lewis and Clarkson (2007) concluded prior experience is a strong indicator of future use of products. Through engaging in customisation activities such as co-configuration, customers potentially develop new skills and engage in learning loops that enrich their engagement in future co-creation activities (Leclercq, Hammedi and Poncin 2016). Additionally, the performance outcomes of products also increased with prior experience, more so than with age or a generational influence (Langdon, Lewis & Clarkson 2007). It has also been identified that much of the research in customisation has been driven by hypothetical purchase scenarios, so in order to understand actual behaviour, this paper applies contexts in which customers have previously purchased customised products through co-configuration toolkits. It is important to understand how prior experience, including recency and frequency of purchase, impacts segment membership.

Figure 3-1 presents the conceptual framework for this study. The framework advances current research in customisation by drawing on and cross-validating previously considered antecedent factors, and comparing these to a set of theoretically derived additional factors. This framework also helps understand
potential outcomes across NPD factors. In combination, the insights help academics and practitioners alike to refine understanding of customisation.

Figure 3-1: Conceptual Framework

As is traditionally the case with segmentation studies (Konuş, Verhoef and Neslin 2008; Sands et al. 2016), final segments are not predetermined, thus formal hypotheses are not stated \textit{a priori}. Instead, possible effects of the variables on customisation behaviour is suggested.

3.2.1 Factors that impact customisation behaviour

In addition to understanding how customisation behaviour impacts segment membership, it is important to consider the factors that impact and influence this behaviour. This is considered in two key areas; factors relating to the individual and factors relating to the product. It is important to understand if there is something inherent about the customer following through with the customisation behaviour that impacts which segment they belong to, therefore the underpinning framework for understanding individual covariates of participation is based on Theory of Planned Behaviour (TPB) (Ajzen 1991). TPB suggests the intention to undertake a behaviour is based on three antecedents, attitude (evaluation of the behaviour), subjective norm (the impact of views from relevant others) and perceived behavioural control (PBC) (whether they believe they have control over the behaviour).
Innovativeness is included as an additional individual covariate to the TPB factors. Offering customisation is still a relatively new capability to a lot of firms, and therefore innovativeness of customers willing to undertake the behaviour is an important factor to consider. This research also considers two product related factors to understand if the product customisation on offer impacts the segments more than individual characteristics.

3.2.1.1 Individual covariates

Innovativeness is the degree to which customers prefer to seek out new experiences and try new and different products (Konuş, Verhoef and Neslin 2008; Midgley and Dowling 1978). While customising products is becoming increasingly more common, it offers customers the ability to configure new and different products, therefore innovativeness could have an impact on customisation demand and segment membership.

Attitude is the extent to which an individual has a positive or negative evaluation of the intended behaviour (Ajzen 1991). For example, if a customer has a favourable view of customisation then they might be more likely to participate in the behaviour, as opposed to a customer with an unfavourable view. Researchers have found attitude to have a positive influence on behavioural intention to purchase customised products (Tang, Luo & Xiao 2011), willingness to purchase and recommend to friends (Lee & Chang 2011) and intention to use a virtual store (Chen & Tan 2004). It is reasonable to expect different attitudes towards customisation may impact segment membership.

Subjective norm is the social pressure to undertake a behaviour as perceived by the customer, and impacts the intention for a customer to perform a behaviour (Ajzen
1991). For example, the impact of the views of relevant others may impact whether a customer chooses to participate in customisation. Subjective Norm has been criticised as the weakest predictor of intention in TPB (Armitage & Conner 2001; Terry, Hogg & White 1999). However, the concept of customisation is designed to meet individual needs, which could be considered to include the social pressure of having an individual product (Belk 1988). Therefore, subjective norm could impact customisation behaviour and is a relevant factor to consider in this study.

Perceived Behavioural Control is the customer’s perception that the behaviour of interest is easy or difficult to perform (Ajzen 1991). If two customers perform the same behaviour, the customer with higher perceived ability to complete the activity, will more likely achieve success. Alternatively, a customer with low perceived behavioural control may not believe they can undertake the activity in the first place (Ajzen 1991). Godek and Yates (2005) researched the effect of perceived behavioural control in a customisation setting, manipulating both perceived and desired control. They found when customers desired ability matched their actual control of a situation, perceived behavioural control positively influenced customers evaluation (Godek & Yates 2005). Customisation requires the customer to have a high involvement in selecting from the pre-defined options in order to customise a product, however, customers may have a sense of inability to control the process, or be overwhelmed by the options available to them (Lee & Chang 2011; Piller et al. 2005). It is expected that this covariate could impact segment membership, particularly in the undertaking of customisation behaviour to begin with.
3.2.1.2 Product covariates

Similarly to TPB, TAM is based on the theory of reasoned action, however, it has a focus on the use of technology in the intention to perform a behaviour, with perceived usefulness (using technology to enhance performance) and perceived ease of use (using the technology is free from effort) as predictors (Davis 1989). There have been mixed results about the effect of Perceived Ease of Use in the technology and online shopping context (Lee and Chang 2011), with several researchers reporting no significant effect (Lee and Chang 2011; Van der Heijden and Verhagen 2004), therefore, this paper only considers the effect of perceived usefulness in this context.

Product involvement is the level of interest a customer's has towards a product, where the interest is based on the relevant importance of the need to the customer (Damm, de Pablos Heredero and Rodríguez-Monroy 2013; Koufaris 2002; Zaichkowsky 1985). A customer that is highly involved in a product may have a higher intention to customise as they attribute a high value to the product or service (Damm, de Pablos Heredero and Rodríguez-Monroy 2013). This paper expects customers who are more involved with the product category could differ on their segment membership.

3.2.2 Outcomes of Participating in Customisation

Involving customers in customisation does not always lead to positive outcomes, therefore it is important to understand the impact segment membership has on perceived outcomes of customised products. The outcomes for this research have been carefully selected to understand the impact segment membership has on new product development in driving value for customers. That is, understanding the
impact customising products has on perceptions of aesthetics, functionality and symbolism (Homburg, Schwemmle and Kuehnl 2015). It is also important to understand the impact on purchase intention to understand which segments are more or less likely to purchase the customised products. Purchase intention represents the customer’s perception that they will purchase a product or service from the company in the future, taking into account their current situation (Hellier et al. 2003). This research seeks to understand different customer segments within customisation purchase behaviour, and thus understanding the purchase intention of different segments will aid organisations in configuration of both internal and external resources.

### 3.2.2.1 New Product Design factors

Homburg, Schwemmle and Kuehnl (2015) considered three dimensions (aesthetics, functionality and symbolism) of NPD on purchase intention. Their study found customers’ intention to purchase was increased by the three dimensions. It also was the first study to consider symbolism in a new product design setting. However, they did not consider the impact of the dimensions as outcomes. It is therefore important to understand the antecedents of new product design factors to enhance value creation for customers.

Product aesthetics refers to the beauty of a product perceived by its appearance (Bloch 2011; Homburg, Schwemmle and Kuehnl 2015; Leder et al. 2004). According to Homburg, Schwemmle and Kuehnl (2015) the best definition for product aesthetics is: “a product has attributes that cause a perception of beauty for the beholder” (p.44). Customising a product allows customers input into the aesthetics of
the product. Hence, different segments may have different perception of aesthetics as an outcome of customised products.

Functionality refers to the customer’s perception that a product can fulfil its purpose (Bloch 2011; Homburg, Schwemmle and Kuehnl 2015). Perceived functionality is increasingly important in an online setting, where a customer doesn’t have the opportunity to experience the functionality of the product, but they imagine the product based on a visual stimulus and episodic memories (Homburg, Schwemmle and Kuehnl 2015; Spears and Yazdanparast 2014). Customisation allows the customer to design the product for the purpose that they intend to use it for and it is anticipated that customisation may impact functionality as an outcome.

Symbolism is the perceived message of self-image the customer takes from a product on the basis of physical appearance (Bloch 2011; Homburg, Schwemmle and Kuehnl 2015). Homburg, Schwemmle and Kuehnl (2015) emphasized the importance of considering symbolism as well as aesthetics and functionality, as symbolism and aesthetics may hold opposing views for the customer. For example, a university/college jumper may hold a high symbolic value even if the customer does not like the design of the product. Symbolism is also important as products, in part, can also reflect customers need to express their extended selves (Belk 1988; Homburg, Schwemmle and Kuehnl 2015).

3.3 Method

Two studies were conducted to address the research aims of this paper. The same method is applied for both studies in this paper, with the only difference occurring in the data collection method used. In both studies, respondents were asked a series of questions about their co-configuration experience and purchase behaviour. Study
one probed customers of a reusable coffee cup brand on their past (actual) purchase behaviour. Study two drew on a panel of consumers, asking the same questions in relation to a hypothetical customised purchase, still asking about their own past experience of customising. The covariates and outcomes identified in the conceptual model were operationalized on a seven-point Likert scale anchored at 1 (strongly disagree) and 7 (strongly agree). There has been strong empirical support in previous literature to show if customers have been satisfied with a product they are more likely to repurchase, therefore customers who had purchased a product previously were asked about their repurchase intention, rather than purchase (Anderson and Sullivan 1993; Hellier et al. 2003; Patterson and Spreng 1997). Purchase/repurchase intention is operationalized using a single item scale in line with previous research (Chang and Wildt 1994; Kalwani and Silk 1982). While all scales were adapted from existing literature, exploratory factor analysis was used to summarise each measurement scale into factors. For each measurement scale, the constructs were simultaneously analysed to provide support for their underlying structure. Principle Components method of extraction was used as specified by Hair et al. (2010). An item loading of .70 or greater was used as a baseline for including constructs. Confirmatory Factory Analysis was used to assess the reliability and validity for the model. All constructs had a Cronbach’s alpha above 0.8 meeting reliability criteria (Pallant 2013). All AVE values were >0.5 which suggests convergent validity conditions were met.

3.3.1 Data analysis
This research employed latent class analysis (LCA) using Latent Gold Version 5 software (Vermunt and Magidson 2013). A latent cluster model (LCM) is used to develop typologies for different customers that exist in customisation. LCM is
preferred over other clustering methods (such as k-means) for a number of reasons. First, a LCM provides a statistical basis for deciding on the number of clusters to include in the final solution (Magidson and Vermunt 2002). Second, LCM does not assume normality or linearity, while k-means clustering does (Wedel and Kamakura 2000). This means a LCM can accommodate variables from a variety of scale types (Vermunt and Magidson 2002). Finally, LCM allows for covariates to be directly included in the model, while other clustering methods require a post-hoc analysis of cluster profiles.

The LCM is estimated using maximum likelihood (Collins and Lanza 2010; McCutcheon 2002), using 100 different random sets of starting parameters to reduce the chance of local maxima (Masyn 2013). The indicator variables in the model are purchase recency and frequency for both standard and customised products. The covariates measured individual and product factors as identified in the conceptual model. Finally, local independence is tested for through bivariate residuals, and includes additional model terms where appropriate (Collins and Lanza 2010; Vermunt and Magidson 2013; McCutcheon 2002). Following the procedure for Step3 analysis (Vermunt and Magidson 2013), the impact of segment membership on outcomes is analysed.

3.4 Study One: A Segmentation within a Single Product Category

In order to investigate the factors which lead consumers to customise, this study partnered with an organisation engaged in the manufacture and sale of reusable coffee cups. These coffee cups can be purchased pre-made, or consumers have the option to customise a cup based on a selection of colours and styles using a configuration toolkit. A total of 8,879 online surveys were sent to customers of the
coffee cup brand, with 2,610 (29.6%) opened and 714 (27.4%) respondents starting the survey. A final usable sample of 394 (15.1%) was collected. Respondents were 80% female, with 86.4% aged between 25 to 54 years, as is representative of the brands customers.

3.4.1 Results and interpretation of segments

The solutions are estimated for one to 10 clusters, and the best model is selected by applying the Bayesian information criterion (BIC), as this is more effective in detecting the correct model when using LCA than other information criteria (Nylund, Asparouhov and Muthén 2007). Classification error is used as a secondary criterion, which provides information on the proportion of cases expected to be misclassified (Collins and Lanza 2010). The four-cluster model provided the lowest BIC, and also had a minimal classification error as identified in Table 3-1 below. This model was deemed the most suitable and therefore chosen as the final model.

Table 3-1: Log-likelihood statistics for model selection

<table>
<thead>
<tr>
<th>Model</th>
<th>Cluster</th>
<th>LL</th>
<th>BIC(LL)</th>
<th>Npar</th>
<th>Class.Err.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>1-Cluster</td>
<td>-2060.3186</td>
<td>4168.4480</td>
<td>8</td>
<td>0.0000</td>
</tr>
<tr>
<td>Model 2</td>
<td>2-Cluster</td>
<td>-1845.0549</td>
<td>3773.7788</td>
<td>14</td>
<td>0.0007</td>
</tr>
<tr>
<td>Model 3</td>
<td>3-Cluster</td>
<td>-1714.6626</td>
<td>3548.3522</td>
<td>20</td>
<td>0.0180</td>
</tr>
<tr>
<td>Model 4</td>
<td>4-Cluster</td>
<td>-1695.1826</td>
<td>3545.7503</td>
<td>26</td>
<td>0.0303</td>
</tr>
<tr>
<td>Model 5</td>
<td>5-Cluster</td>
<td>-1687.4544</td>
<td>3566.1519</td>
<td>32</td>
<td>0.1372</td>
</tr>
<tr>
<td>Model 6</td>
<td>6-Cluster</td>
<td>-1681.8827</td>
<td>3590.8667</td>
<td>38</td>
<td>0.1137</td>
</tr>
<tr>
<td>Model 7</td>
<td>7-Cluster</td>
<td>-1676.5081</td>
<td>3615.9756</td>
<td>44</td>
<td>0.1698</td>
</tr>
<tr>
<td>Model 8</td>
<td>8-Cluster</td>
<td>-1674.3248</td>
<td>3647.4671</td>
<td>50</td>
<td>0.2351</td>
</tr>
<tr>
<td>Model 9</td>
<td>9-Cluster</td>
<td>-1672.9147</td>
<td>3680.5050</td>
<td>56</td>
<td>0.2276</td>
</tr>
<tr>
<td>Model 10</td>
<td>10-Cluster</td>
<td>-1669.4381</td>
<td>3709.4100</td>
<td>62</td>
<td>0.2144</td>
</tr>
</tbody>
</table>

Table 3-2 below displays the results for the indicator variables for each cluster, as well as additional profiling based on customised purchasing experience.

Table 3-2: Indicator Variables (n=394)
The first segment (67.3%) represents customers who have all previously customised, and purchased a customised product, from the brand. Additionally, it is highly likely that the last purchase these customers made was a customised product. However, compared to other segments the overall frequency of customised purchase is moderate (2.5 products) and the proportions of customers in this segments who had purchased in the past 12 months is relatively low (54.3%). Based on this, this segment is labelled *Casual Customisers*.

The second segment (15.3%) has the lowest proportion of customers who have ever used the co-configuration toolkit (34.0%), and almost none of this segment have purchased a customised product from the brand (0.5%). Additionally, this segment has the lowest proportion of customers who have purchased in the past 12 months (51.0%). Hence, this segment is identified as *Non-customisers*.

The third segment (9.7%) represents customers who have all customised a product from the brand. However, only 77.0% of this segment have followed through to purchase a customised product, which is notably lower that other customising segments. Additionally, while the vast majority of this segment have purchased in the past 12 months (86.4%), only a very small proportion (2.4%) purchased a customised product as their most recent purchase. Compared to other segments who have purchased customised products, this segment also has the lowest frequency of customised purchase (1.8 products) and the lowest overall proportion of
customised purchases (39.0%). These characteristics indicate this segment is *Playful Customisers*, who use customisation to play for hedonic enjoyment, but are more likely to purchase a standard product.

The final segment identified in this research (7.7%) is similar to segment 1 in that all customers have customised and purchased a customised product. The vast majority (89.3%) of this segment also purchased a customised product in their last purchase. What distinguishes this segment from others is the notably higher frequency of purchase overall (13.6 products), as well as the frequency of customised purchases (8.4 products). As a result, this group is labelled *Product Enthusiasts*.

### 3.4.2 Covariates and Outcomes

This study finds some covariates impact the model at an overall level, and some covariates are significant between clusters. Table 3-3 displays the results of this analysis.
### Table 3-3: Covariates Associated with Customer Segments – Reusable Coffee Cups

<table>
<thead>
<tr>
<th>Covariates</th>
<th>Casual Customisers</th>
<th></th>
<th>Non-Customisers</th>
<th></th>
<th>Playful Customisers</th>
<th></th>
<th>Product Enthusiasts</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovativeness</td>
<td>-0.2061</td>
<td>0.1008</td>
<td>*</td>
<td>-0.4598</td>
<td>0.1371</td>
<td>**</td>
<td>0.5979</td>
<td>0.1930</td>
</tr>
<tr>
<td>Product Involvement</td>
<td>-0.2594</td>
<td>0.1128</td>
<td>*</td>
<td>-0.1075</td>
<td>0.1506</td>
<td></td>
<td>-0.4705</td>
<td>0.1814</td>
</tr>
<tr>
<td>Subjective Norm</td>
<td>-0.0615</td>
<td>0.0764</td>
<td></td>
<td>0.1598</td>
<td>0.1083</td>
<td></td>
<td>0.1877</td>
<td>0.1474</td>
</tr>
<tr>
<td>Perceived Usefulness</td>
<td>0.1032</td>
<td>0.1070</td>
<td></td>
<td>-0.3066</td>
<td>0.1603</td>
<td>^</td>
<td>-0.3858</td>
<td>0.1595</td>
</tr>
<tr>
<td>Perceived Behavioural Control</td>
<td>0.0366</td>
<td>0.1134</td>
<td></td>
<td>0.0010</td>
<td>0.1870</td>
<td></td>
<td>0.2697</td>
<td>0.2237</td>
</tr>
<tr>
<td>Attitude</td>
<td>0.1095</td>
<td>0.1215</td>
<td></td>
<td>-0.4331</td>
<td>0.1657</td>
<td>**</td>
<td>0.4279</td>
<td>0.2412</td>
</tr>
</tbody>
</table>

*p<0.1, *p<0.05, **p<0.01

### Table 3-4: Outcomes Associated with Customer Segments – Reusable Coffee Cups

<table>
<thead>
<tr>
<th>Covariates</th>
<th>Casual Customisers</th>
<th></th>
<th>Non-Customisers</th>
<th></th>
<th>Playful Customisers</th>
<th></th>
<th>Product Enthusiasts</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase Intent</td>
<td>-0.0910</td>
<td>0.1197</td>
<td></td>
<td>-0.3975</td>
<td>0.1764</td>
<td>*</td>
<td>0.3016</td>
<td>0.1911</td>
</tr>
<tr>
<td>Aesthetics</td>
<td>-0.0486</td>
<td>0.0640</td>
<td></td>
<td>-0.3985</td>
<td>0.1015</td>
<td>**</td>
<td>0.1199</td>
<td>0.1058</td>
</tr>
<tr>
<td>Functionality</td>
<td>-0.1345</td>
<td>0.0711</td>
<td>^</td>
<td>-0.0029</td>
<td>0.0862</td>
<td></td>
<td>0.0615</td>
<td>0.1080</td>
</tr>
<tr>
<td>Symbolism</td>
<td>-0.0616</td>
<td>0.1134</td>
<td></td>
<td>0.0830</td>
<td>0.1460</td>
<td></td>
<td>0.0292</td>
<td>0.2045</td>
</tr>
</tbody>
</table>

*p<0.1, *p<0.05, **p<0.01

79
Casual customisers are likely to be less innovative than other customers who customise. While they participate in the customisation process they do it less frequently than Product enthusiasts, and less recently than both of the other customising segments. This is consistent with the lower innovativeness, suggesting they are happy to customise but don’t have as strong a desire to have new and different products. Casual customisers are also likely to have lower product involvement, which is also consistent with the frequency of their purchasing.

Non-customisers are even less innovative than Casual customisers, which is consistent with a low percentage of this segment ever trying customisation. This segment are also more likely to have an unfavourable attitude towards purchasing customised products. These results could be influenced by the product category as reusable coffee cups are a low involvement purchase. While only significant at \( p=<0.1 \), Non-customisers are characterized by low perceived usefulness of customising. This reduced perceived usefulness could be a result of this segment only being familiar, and exposed to, attribute-by-attribute customisation, as opposed to customisation via starting solution. Attribute-by-attribute has lower mental simulation of product use during customisation, as a consequence customers may not be able to accurately picture the product they are creating (Hildebrand, Häubl and Herrmann 2014).

The third segment is Playful customisers (9.7%). Product involvement and perceived usefulness are both significantly lower for Playful customisers. These results could be due to this segment’s hedonic consumption, and the use of customisation as play. While this segment doesn’t follow through with the customised purchase, they may receive hedonic enjoyment from the activity but purchase standard products, as
evidenced by the likelihood of their last purchase not being customised, and less than 40% of their total purchases being customised. Interestingly, innovativeness is significantly higher for Playful customisers, indicating their willingness to try new experiences and keep to date with the latest trends. This is also a good indication of their choice to use the customisation process for hedonic enjoyment. This segment want the experience of trying new things, but don’t need to follow through with the product purchase.

The final segment in this study is Product enthusiasts (7.7%). Product enthusiasts have significantly higher product involvement and perceived usefulness of customising the product. These results are logical when considering the frequency at which they purchase customised coffee cups being almost 3.5 times higher than the next highest segment (Casual customisers).

3.4.2.1 Outcomes

Using the Step 3 analysis this study finds that the customisation segments differ in relation to purchase intention, aesthetics and functionality, but no significant differences are found for symbolism. Purchase Intention is significantly lower among Non-customisers, indicating they are the least likely to purchase a customised reusable coffee cup within the next 12 months. This is consistent with the profile of this segment having little experience or interest in customisation. This segment also have lower perceived aesthetics of a customised product than any other segment, partially explaining their lower attitude towards the customisation process. In contrast, Product enthusiasts have significantly higher ratings of aesthetics, consistent with the frequency of customisation among these customers. While not significant at p<0.05, perceptions of functionality is lower for Casual customisers at
p<0.1, supporting the suggestion that these customers see customisation as a more hedonic activity.

3.4.3 Discussion
The first question of this study was to understand if different customer segments exist in co-configuration. Four segments were found; casual customisers, non-customers, playful customisers and product enthusiasts. The second question this study aims to address is the extent that different market configurations contribute to the success of NPD factors. Some unexpected results were found in the first study. For example, it is interesting and counterintuitive to find that symbolism isn’t significant between the customer segments. Homburg, Schwemmle and Kuehnl (2015) verified the symbolism scales applicability in three studies using different products from different product categories and in distinct cultural contexts, and found symbolism to have a significant impact on purchase intention and word of mouth in all settings, so it is interesting the study did not find a significant impact of customisation behaviour on symbolism. In order to further understand the counterintuitive results, and test the impact of the product context further, a second study across additional product categories is conducted.

3.5 Study Two: An Extension across Product Categories

While segmentation is a useful technique to identify and analyse configurations, in order to ensure the segments identified are more than statistical artefacts resulting from analysis of data, the solution requires further validation. One technique for achieving this validation is through replication (Dess, Newport and Rasheed 1993). Therefore, in order to understand if the segments found are indeed stable configurations and produce stable outcome relationships in view of creating value in
customisation outcomes, Study Two replicates and extends the investigation across additional product categories, to include sneakers and watches, as well as retaining reusable coffee cups for comparison to Study One.

The data for the second study was collected from a sample of US consumers who are members of Amazon Mechanical Turk (MTurk). MTurk recruitment is timely, cost-effective, and yields good quality data (Buhrmester, Kwang and Gosling 2011; Goodman, Cryder and Cheema 2013; Paolacci and Chandler 2014). Respondents were paid $1.30 for their time in completing the questionnaire. Respondents were randomly allocated in to one of five conditions, two brands offering customised sneakers, two brands offering customised watches and the fifth brand offering customised reusable coffee cups. The questionnaire mirrored that of Study One.

A total of 606 completed survey responses were collected. Data was cleaned by removing respondents on duplicate IP address, an attention check question, removing survey speeders (i.e. those that completed the survey in less than 3 minutes – the average completion time was 11 minutes 30 seconds), and flat lining respondents (Menictas, Wang and Fine 2011). A final qualified sample of 489 responses was obtained, with 90 in sneaker brand A, 96 in sneaker brand B, 108 in watch brand A, 96 in watch brand B and 99 in reusable coffee cup brand.

3.5.1 Results and interpretation of segments
Following the same process as Study One, solutions for one to 10 clusters are estimated, and the best model selected by applying the Bayesian information criterion (BIC). Again, the four-cluster model provided the lowest BIC, and also had a minimal classification error as identified in Table 3-5 below, and was therefore deemed the most suitable.
Table 3-5: Log-likelihood statistics for model selection

<table>
<thead>
<tr>
<th></th>
<th>LL</th>
<th>BIC(LL)</th>
<th>Npar</th>
<th>Class.Err.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>1-Cluster</td>
<td>-1610.6972</td>
<td>3264.7409</td>
<td>7</td>
</tr>
<tr>
<td>Model 2</td>
<td>2-Cluster</td>
<td>-1327.4708</td>
<td>2723.0575</td>
<td>11</td>
</tr>
<tr>
<td>Model 3</td>
<td>3-Cluster</td>
<td>-1229.7494</td>
<td>2552.3842</td>
<td>15</td>
</tr>
<tr>
<td>Model 4</td>
<td>4-Cluster</td>
<td>-1172.6286</td>
<td>2462.9120</td>
<td>19</td>
</tr>
<tr>
<td>Model 5</td>
<td>5-Cluster</td>
<td>-1163.993</td>
<td>2470.4102</td>
<td>23</td>
</tr>
<tr>
<td>Model 6</td>
<td>6-Cluster</td>
<td>-1157.5922</td>
<td>2482.3782</td>
<td>27</td>
</tr>
<tr>
<td>Model 7</td>
<td>7-Cluster</td>
<td>-1157.2586</td>
<td>2506.4804</td>
<td>31</td>
</tr>
<tr>
<td>Model 8</td>
<td>8-Cluster</td>
<td>-1157.0141</td>
<td>2530.7610</td>
<td>35</td>
</tr>
<tr>
<td>Model 9</td>
<td>9-Cluster</td>
<td>-1156.8276</td>
<td>2555.1573</td>
<td>39</td>
</tr>
<tr>
<td>Model 10</td>
<td>10-Cluster</td>
<td>-1156.6807</td>
<td>2579.6330</td>
<td>43</td>
</tr>
</tbody>
</table>

Table 3-6 below displays the results for the indicator variables for each cluster.

Table 3-6: Indicator Variables (n=489)

<table>
<thead>
<tr>
<th>Cluster Size</th>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
<th>Cluster 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ever customised (% Yes)</td>
<td>99.9%</td>
<td>2.1%</td>
<td>99.9%</td>
<td>99.9%</td>
</tr>
<tr>
<td>Purchased customised (% Yes)</td>
<td>100.0%</td>
<td>0.2%</td>
<td>89.5%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Recency of customised Purchase (% &lt;12 months)</td>
<td>96.7%</td>
<td>0.0%</td>
<td>4.2%</td>
<td>99.9%</td>
</tr>
<tr>
<td>Frequency of customised Purchase</td>
<td>1.5</td>
<td>0.0</td>
<td>0.2</td>
<td>9.5</td>
</tr>
</tbody>
</table>

The segments in Study Two match that of Study One, although the size of the segments are slightly different. Cluster 1 again describes Casual customisers, who have all customised and purchased a customised product recently, but have only done so at a moderate frequency. Notably, the size of this cluster in the general population (37.2%) is lower than in the specific context of Study One (67.3%).

Cluster 2 replicates the Non-customisers segment, with no experience of purchasing customised products. This segment is twice as large in the general population (37.6%) than in Study One (15.3%). The Playful customisers segment are again found in Cluster 3, representing by a large degree of experience with customising products, but a notably lower frequency of customised purchase (0.2 products). This
segment are also twice as common in the general population as in the specific customer base considered in Study One. Finally, the *Product enthusiasts* are replicated in Study Two, representing a small proportion of the population (2.5%) with a high frequency of customised purchase (9.5 products).

### 3.5.2 Covariates and Outcomes

Table 3-7 displays the results of the covariate analysis, and Table 3-8 displays the results of the Step3 analysis for outcomes.
Table 3-7: Covariates Associated with Customer Segments – General Consumer Group

<table>
<thead>
<tr>
<th>Covariates</th>
<th>Casual Customisers</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Non-Customisers</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Playful Customisers</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Product Enthusiasts</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovativeness</td>
<td>0.1853</td>
<td>0.1062</td>
<td></td>
<td>-0.3716</td>
<td>0.1035</td>
<td>**</td>
<td>-0.1877</td>
<td>0.1098</td>
<td>^</td>
<td>0.3740</td>
<td>0.2325</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.0281</td>
<td>0.1693</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product Involvement</td>
<td>0.0363</td>
<td>0.0742</td>
<td></td>
<td>-0.0036</td>
<td>0.0751</td>
<td></td>
<td>-0.0046</td>
<td>0.0810</td>
<td></td>
<td>-0.0281</td>
<td>0.1693</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.1906</td>
<td>0.2872</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subjective Norm</td>
<td>-0.0079</td>
<td>0.1143</td>
<td></td>
<td>0.0226</td>
<td>0.1075</td>
<td></td>
<td>-0.2052</td>
<td>0.1157</td>
<td>^</td>
<td>0.1906</td>
<td>0.2872</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.2613</td>
<td>0.4271</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Usefulness</td>
<td>-0.1032</td>
<td>0.1603</td>
<td></td>
<td>-0.1853</td>
<td>0.1576</td>
<td></td>
<td>0.0272</td>
<td>0.1660</td>
<td></td>
<td>0.2613</td>
<td>0.4271</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.2876</td>
<td>0.4150</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Behavioural Control</td>
<td>0.2756</td>
<td>0.1635</td>
<td></td>
<td>-0.0711</td>
<td>0.1515</td>
<td></td>
<td>0.0830</td>
<td>0.1639</td>
<td></td>
<td>-0.2876</td>
<td>0.4150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.4496</td>
<td>0.2788</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Attitude</td>
<td>-0.0256</td>
<td>0.1265</td>
<td></td>
<td>-0.1658</td>
<td>0.1260</td>
<td></td>
<td>-0.2581</td>
<td>0.1386</td>
<td>^</td>
<td>0.4496</td>
<td>0.2788</td>
<td></td>
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^p<0.1, *p<0.05, **p<0.01

Table 3-8: Outcomes Associated with Customer Segments – General Consumer Group

<table>
<thead>
<tr>
<th>Covariates</th>
<th>Casual Customisers</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Non-Customisers</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Playful Customisers</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Product Enthusiasts</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase Intent</td>
<td>0.0058</td>
<td>0.0741</td>
<td></td>
<td>-0.2927</td>
<td>0.0778</td>
<td>**</td>
<td>-0.3645</td>
<td>0.0839</td>
<td>**</td>
<td>0.6515</td>
<td>0.1994</td>
<td>**</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Aesthetics</td>
<td>0.0730</td>
<td>0.1134</td>
<td></td>
<td>-0.1846</td>
<td>0.1037</td>
<td>^</td>
<td>-0.0182</td>
<td>0.1131</td>
<td></td>
<td>0.1298</td>
<td>0.2478</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.1332</td>
<td>0.2072</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Functionality</td>
<td>0.2433</td>
<td>0.1143</td>
<td>*</td>
<td>-0.0944</td>
<td>0.0962</td>
<td></td>
<td>-0.0157</td>
<td>0.1078</td>
<td></td>
<td>-0.1332</td>
<td>0.2072</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.6439</td>
<td>0.1975</td>
<td>**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Symbolism</td>
<td>-0.1291</td>
<td>0.0832</td>
<td></td>
<td>-0.2045</td>
<td>0.0784</td>
<td>**</td>
<td>-0.3103</td>
<td>0.0841</td>
<td>**</td>
<td>0.6439</td>
<td>0.1975</td>
<td>**</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

^p<0.1, *p<0.05, **p<0.01
As the same four segments were found in both Study One and Study Two, it is valuable to compare the covariate results for consistencies and differences. In Study Two, no significant covariates are found for the Casual customisers segment. This suggests that this segment record average scores on the hypothesised antecedents of customisation behaviour. This is somewhat different from Study One, where this segment were found to score significantly lower on innovativeness and product involvement. The implication of this difference is that these relationships may be specific to product categories, and may not be generalised across the population. This, as well as the relatively large segment size, indicates Casual customisers are the typical customer who participates in customisation.

Consistent with Study One, Non-customisers are less likely to be innovative. However, Study Two found that innovativeness is the only significant covariate in a general consumer setting. That is, the lower attitude of these customers identified in Study One, may be unique to the product category that was considered. Non-customisers in a general setting do not have significantly lower perceived usefulness or attitude towards customisation.

The covariate results related to Playful customisers in Study Two are somewhat different from Study One. Most notably, in Study Two, no results are significant at the 0.05 level. However, at the 0.1 level, in Study Two, Playful customisers have lower innovativeness, subjective norm and attitude. While somewhat different effects from Study One, this results still support the behaviour of this segment customising for hedonic enjoyment but have an unfavourable attitude to following through with the purchase.
No significant covariates were found for Product enthusiasts, indicating they are similar across covariates as Casual customisers. However, the profile of this segment still clearly demonstrates a high purchase frequency and recency of purchasing customised products, supporting that the key difference between Casual customisers and Product enthusiasts is in the frequency of engaging with the product category.

3.5.2.1 Outcomes

Consistent with Study One, Non-customisers have lower purchase intentions than other segments in Study Two. In the general population considered in Study Two, this relationship is also found for Playful customisers, while Product enthusiasts record higher levels of purchase intention. Non-customisers and Playful customisers also perceive lower symbolism, while this is significantly higher for Product enthusiasts. This is in contrast to Study One, where no significant results were found for Symbolism. This suggests that the impact of customisation on perceived symbolism may depend on the product category in consideration. Finally, Casual customisers perceive higher functionality of customised products than any of the other segments.

3.5.3 Cross-study Implications

Study one found a somewhat counter intuitive result suggesting that symbolism was not a significant outcome of purchasing customised products. When investigating this result further in a general consumer setting across three different product categories, the customisation segment that customers belong to does change their perception of perceived symbolism. Symbolism is significantly lower for Non-customisers and also Playful customisers, both of whom have a reduced frequency
and recency for purchasing customised products, and is significantly higher for Product enthusiasts. Interestingly, while differences are found between the studies, there are also similarities. The second study supports the key difference between being a Casual customiser and a Product enthusiast is the frequency of purchase, with Product enthusiasts purchasing a far greater number of customised products. Further support for Playful customisers using the customisation toolkits for hedonic enjoyment or ‘play’ rather than to follow through with the purchase is also found.

3.6 Discussion

This research set out to expand the current understanding of mass customisation. Extant theorising revolves predominantly around the firm’s perspective; customer-driven insights have been limited by inconclusive findings, partially because of in-built assumptions of customer homogeneity. Accordingly, potential market configurations and respective strategic implications have been largely ignored to date. Against this background, the following research questions guided this investigation: Applying a configuration theory lens, what customisation segments emerge and deserve strategic prioritisation? And how does customisation segment membership alter perceptions of NPD factors? These questions are addressed through two stages. First identifying relevant market segments through latent class analysis, and understanding the impact of relevant covariates. Second, investigating how segment membership impacts customisation outcomes, in particular NPD success. By applying a market-oriented configuration theory perspective, this research provides insights into four alternative market segments that provide opportunities for firms seeking strategic fit for more effective customisation. This paper then sheds light on how market configurations influence new product design
success. Further clarity into the area of customisation is provided through identifying the importance of understanding hedonic consumption experiences from the aspect of play, and how customers create value.

An important issue to address when segmenting customers is to ensure the stability of segments. If the configuration of segments identified in customisation differs radically from one context to the next, it will be hard to make meaningful recommendations, particularly from understanding this phenomenon from a managerial viewpoint. One way to address stability is through a cross-contextual study, comparing segments across studies and contexts. Evidence of four customer segments is found in this research, three of which are involved in actively purchasing customised products. The segments function as stable and internally consistent market configurations across different contexts, indicating a deeper underlying reason for these customers forming homogenous groups. Therefore, organisational strategy should consider how they fit the configurations, suggesting multiple strategies may need to be considered in the development of marketing activities in order to reach and satisfy the diverse needs of the market configurations. A second way to address stability is to understand temporal stability of profiles. Assessing the stability of customer segments overtime, and understanding the transition of customers between profiles, if any. This opens up an opportunity for further research in this area, to extend this study by investigating the impact of time on customer segments in customisation.

Depending on context, 60% to 80% of customers participate in customisation activities. This has a managerial implication in understanding the active and profitable segments and focusing resources on prioritising targeting these customers.
over customer segments that may not purchase as frequently. Our results reveal that segment membership, while based on prior customisation experience, is also impacted by individual and product related factors. Customers who customise are more likely to be innovative, have a more positive attitude towards customisation and are more involved in the product category to which they are customising. Segment membership impacts purchase intent and increases the perceived aesthetics of the customised product, with customers who customise more likely to purchase, or repurchase a customised product within 12 months, and perceive higher aesthetics and symbolism as an outcome. This is an important finding and extends research conducted by Homburg, Schwemmle and Kuehnl (2015). This research proposes that segment membership has an impact on NPD factors, and finds covariates that lead to this segment membership. Homburg, Schwemmle and Kuehnl (2015) developed the NPD factors and the impact these factors have on Purchase Intention, Willingness to Pay, and the inclusion of Brand Attitude as a partial mediator. This paper extends this by investigating the behaviour that actually leads to the difference in NPD factors in customisation.

3.6.1 Managerial implications
This research has several implications for managers. One finding is the emphasis of the stable segment types across product categories, suggesting these segments are likely to be found across many different customisation contexts. That is, organisations that don't currently offer customisation in their offering, can use these segments as a basis to understand potential customers. Within the customers who customise, there are three different types, while a fourth segment exists that doesn't customise. While three of these segments have participated in customisation, they differ substantially in whether they follow through with the purchase, and if they do
follow through, the frequency at which they purchase. For example, playful customisers are less likely to have followed through with the customised purchase than the other two customising segments, and product enthusiasts are purchasing at a substantially higher frequency (9.5 products) compared to casual customisers (1.5 products) in a general setting. This creates a number of managerial implications. Firstly, playful customisers represent a lost opportunity of individuals who are interested in customisation but have not purchased. Second, there may be an opportunity to use targeted marketing activities to shift casual customisers to product enthusiasts.

This emphasises the need for managers to think about the best strategies to target each segment. Managers must understand the importance of the difference in the covariates and outcomes for each segment so as to best configure their resources for optimal strategic fit. This paper contributes an advanced understanding of customisation behaviour, which assists in the development of future marketing strategies for firms.

3.7 Limitations and future research

While this research has contributions to academic literature and a managerial context, there are still limitations that need to be discussed. Study 1 was conducted with a sample of customers from an industry partner and is not representative of the general population. While the sample is skewed in relation to the general population, this is representative of the customer base of the retailer, and therefore a valid sample base for the study but is limited in drawing conclusions to apply to the general population from Study 1 alone.
This research lacks longitudinal data, therefore, given the segmentation is based on survey data, the findings cannot be cross-validated. There is also opportunity to further investigate the diffusion of customisation, and identify time points between each segments uptake of customisation for a firm. This would enable firms to better forecast the success of customised products and at what point in time they would tap in to each customer segment. There is an opportunity to understand if customers transition between segments overtime, and the likelihood of this transition. This would better understand if these segments are static, or if customers can evolve overtime which would impact how organisations configure for enduring success.

Finally, the two studies in this paper show that while the segments are consistent across contexts, the covariates and outcomes differ. Future research could aim to understand why there is a difference between covariates in different product customisation contexts, or extend this research through attempting to generalise the findings.
Chapter 4: Understanding consumers’ desire for mass customisation: The mediating role of brand experience.

4.0 Introduction

Consumers seek memorable and unique experiences, providing opportunities for brands to co-create meaningful consumer interactions (Dwivedi, Nayeem and Murshed 2018; Zarantonello and Schmitt 2010). A focus on experience is not new, first emerging in the 1980’s (Holbrook and Hirschman 1982). However, the notion of experience has evolved significantly over time. In 1998, Pine and Gilmore (1998) coined the ‘experience economy’, explaining that the new era of competitive advantage lies in staging unique customer experiences. While they later emphasised that experiences have only become more important (Pine and Gilmore 2011), a key challenge is there is no one-size-fits-all experience strategy. Fundamentally, the meaning of experience differs across contexts, and even between customers.

Interactions with brands are a rich source of experience for customers (Schmitt 1999). With the development of technology to facilitate brand interactions, brands can offer experiences with customers through a myriad of channels (Ramaseshan and Stein 2014). Brand experience literature has increased significantly since Brakus, Schmitt and Zarantonello (2009) developed a scale for measuring brand experience through sensory, affective, behavioural and intellectual dimensions. The literature highlights the impact of brand experience on outcomes such as satisfaction, loyalty, and willingness to pay, enabling brand experience to be viewed as a way to enhance relationships between customers and brands (Brakus, Schmitt and Zarantonello 2009; Dwivedi, Nayeem and Murshed 2018; Ramaseshan and Stein 2014). However, existing literature has mainly considered the role of brand
experience in relation to other brand related factors (de Oliveira Santini et al. 2018). Thus, research considering how brand experience interacts factors outside that of the brand are scarce.

An increasingly common way of delivering unique and tailored experiences for customers is through customisation. Many brands are implementing customisation as part of their product and service offering, from cars to handbags and a variety of categories in-between. In many contexts, customers are seeking products with individual characteristics to meet their personal needs and desires. With the growth and accessibility of customisation, traditional roles of the customer and firm have evolved. That is, customers can take on many different, and often active, roles in the co-creation of products and services. It is no longer enough to consider the traditional view of the customer as a passive receiver of information from a firm. Further, the way customers interact and engage with a brand has also evolved. Tynan and McKechnie (2009) posit that value is not a distinct added component, but rather value is created while customers are experiencing the brand. Thus, it’s best to maximise this potential value to customers, not only through the product customisation process, but also through their experience with the brand at each interaction.

Despite the increase in attention on customisation in academic literature, a recent book chapter by Townsend, Kaiser and Schreier (2015) highlights key questions that are still left unanswered. The authors state a series of call to actions for further research in this area. Two pertinent calls to action are understanding when customers self-select to customise and how customisation relates to branding (Townsend, Kaiser and Schreier 2015). While there has been research investigating
outcomes of participating in customisation such as the impact on satisfaction and willingness to pay, it is still unclear when and why customers choose to participate in customisation. The authors suggest that understanding individual and product categorical factors will prove valuable to both academics and managers. The authors also highlight there is a scarce amount of research relating branding to customisation despite relevance to both theory and practice. In particular there has not been an exploration of how presence of a strong brand affects the customisation experience (Townsend, Kaiser and Schreier 2015). To this end, the impact of a strong brand experience on customisation is unknown. The overarching research question driving this paper is therefore: What role do individual, product and brand elements play in customers’ participation in mass customisation?

To this end, this research offers important insight and contribution to the interplay of brand experience with individual and product related factors in the context of customisation. This paper builds on brand experience literature by investigating the mediating impact of brand experience and critically the role of brand experience in predicting different behavioural intentions in customisation. This paper’s objective is to understand the impact of brand experience on customer intentions. First the intention to utilise a customisation toolkit and subsequently the purchase intention of a customised product. In doing so, a model of how individual, product and brand antecedents interact in the context of customisation is developed and empirically tested, contributing to advancing knowledge in both brand experience and customisation literature. Brand experience is found to be the stronger predictor of intention to use a customisation toolkit, with past experience the only individual driver to have a direct effect on purchase intention of customised products.
4.1 Brand experience and customisation: a conceptual foundation

4.1.1 Brand experience defined

Brand experience can be defined as “sensations, feelings, and cognitions, and behavioural responses evoked by brand-related stimuli that are part of a brand's design and identity, packaging, communications, and environments.” (Brakus et al., 2009, p.53). Brakus, Schmitt and Zarantonello (2009) conceptualised, developed and tested a scale based on measuring sensory, affective, behavioural and intellectual responses to a specific brand, considering multiple dimensions to understand a customer's interaction. The authors also highlight that the nature of brand experience can vary from customer to customer in the direction of the experience, the strength of the experience and the duration of the experience. For example, some customers may perceive certain interaction experiences with a brand as more positive or negative, it may be more intense in some experiences over others, and particular brand experiences may stay in the customer’s memory for a sustained period, impacting how they feel about the brand for a longer period of time (Brakus, Schmitt and Zarantonello 2009; Ramaseshan and Stein 2014).

Gaining more traction in recent years, brand experience has been investigated in product categories ranging from low involvement, habitual purchases such as Starbucks (Cleff, Lin and Walter 2014; Ding and Tseng 2015) through to high involvement purchases such as new automobiles (Dwivedi, Nayeem and Murshed 2018). Importantly, the contexts that have been considered for brand experience, while varied across place, product and brand, have not yet investigated customisation, and how the active role of the customer in the customisation process relates to brand experience. This provides an opportunity to investigate the
importance of brand experience in a context where the customer is investing more of themselves in the experience than with a standard purchase.

As well as the range of contexts, the impact of brand experience has been investigated on a number of outcomes. Predominantly, research in this area considers brand experience on outcomes such as satisfaction and brand loyalty (Brakus, Schmitt and Zarantonello 2009; Ding and Tseng 2015; Iglesias, Singh and Batista-Foguet 2011; Ramaseshan and Stein 2014), and more recently on willingness to pay a price premium (Dwivedi, Nayeem and Murshed 2018). Most recently de Oliveira Santini et al. (2018) conducted a meta-analysis of brand engagement literature to investigate inconsistencies and conflicts in research findings in brand experience. The authors suggest the inconsistencies in findings are due to most brand experience research being conducted within a brief period of time. Their study aims to reduce conflicting findings and provide a theoretical model to deepen the understanding of brand experience. The authors find considerable support for the direct effect of brand experience on outcomes such as brand satisfaction, brand loyalty, and brand trust.

What most of the current brand experience studies to date have in common, is the other factors considered and established are predominantly brand related factors, such as brand love, brand trust and brand awareness among others (de Oliveira Santini et al. 2018). Word of mouth, hedonic and utilitarian value, and willingness to pay are among the limited variables considered outside brand related factors. An overall aim of de Oliveira Santini et al.’s (2018) study was to demonstrate the reduction in heterogeneity of brand experience and brand outcomes, presenting consistent results. de Oliveira Santini et al. (2018) reflect on their study and suggest
future research should consider the possibility of variables that are not yet investigated. Thus, it is important to consider the customer-brand relationship, including the impact individual drivers have when considered in relation to brand experience. This consideration would enable managers to understand how important improving the brand experience is, relative to inherent characteristics of individual customers that are harder to influence. The objective of this research is to extend brand experience beyond other related brand drivers, and consider the interplay with individual and product related drivers within a customisation context for a more holistic view.

4.1.2 A snapshot of customisation

Product sits at the core of marketing. While marketing has come a long way since the simple four P framework developed by McCarthy (1964), a firm's product is still of critical importance in delivering value to customers. Today, brand managers are confronted with a number in which to develop and deliver products to end-users. The traditional method involves professional designers at companies responsible for exclusively designing products for the consumer marketplace (Schreier, Fuchs and Dahl 2012). More recent advancements in technology and increasing demands from consumers for differentiation, has resulted in the rise of more innovative methods being used in new product development. Schreier, Fuchs and Dahl (2012) describe one such type, termed user innovation, which refers to design by a subset of users. This involves users taking on the role of designers to generate product ideas that are appealing to entire customer segments (Schreier, Fuchs and Dahl 2012). For example, Threadless allow users to submit designs that the company will then manufacture and produce for any customer to purchase. This is in stark contrast to a parallel form of innovative product development, mass customisation, where users
are customising and designing products to suit their own individual needs. Both user innovation and mass customisation have been shown to have positive effects in literature.

In terms of user innovation, research has found that customers perceive firms to be more innovative and able to generate innovative new products when the firms integrate common design by users into their offering (Nishikawa, Schreier and Ogawa 2013; Schreier, Fuchs and Dahl 2012). However, the majority of the research in the context of user innovation considers the impact of user innovation in driving outcomes such as perceived firm innovativeness and willingness to pay. This leaves a limited understanding of what is driving participation in the innovation activity. This is supported through the discussion of limitations by Schreier, Fuchs and Dahl (2012), acknowledging the plausibility that the outcomes could be perceived differently due to individual differences inherent to the customer.

While user innovation and customisation both result in products designed by the customer, user innovation is distinguished from customisation in two key ways. The first is the involvement of only select amount of users participating in user innovation, and the second is the focus on designing for different end users. User innovation designs for a mass market end user, where mass customisation is designing for self-use. This paper focuses on the context of customisation, specifically co-configuration, whereby customers are involved in the configuration of product elements to meet their individual needs.

Customisation involves the customers in the creation of new products from a predetermined set of options. That is, customers co-configure their ideal product within specific parameters set by the firm. Extant literature investigating why customers
participate in customisation has taken either an individual view (i.e. the factors impacting the customer) or technology view (i.e. the factors related to implementing toolkits in to the firms’ operations) with little research focused on the customer perspective (Franke and Von Hippel 2003; Gilmore and Pine 1997; Hunt, Radford and Evans 2013; Syam, Ruan and Hess 2005). Research that has considered the customer perspective has primarily considered individual behavioural models including the impact customisation has on satisfaction and customers’ attitude towards customisation (Lee et al. 2011), or investigated customers adoption of technology (Lee and Chang 2011).

Given there was a lack of a theoretical framework for customisation research (Piller et al. 2005), Lee and Chang (2011) adapted the technology acceptance model (TAM) to understand customer attitudes towards the customisation process. While the authors considered web skill and fashion involvement as individual factors outside TAM, they only considered the impact these factors had on attitude towards the process (Lee and Chang 2011). Alternatively, Tang, Luo and Xiao (2011) modified the theory of planned behaviour (TPB), using self-confidence as an antecedent instead of perceived behavioural control, and adding perceived usefulness from TAM as an additional construct. Their research found positive impacts of attitude and subjective norm in predicting behavioural intention in customising personal computers.

Few academic studies have focused on the customer perspectives of participating in customisation. Research that has considered customisation from the customers perceptive has examined customers perception of their own design abilities (Chang, Chen and Huang 2009), customers’ ability to express their own design preferences
(Franke, Keinz and Steger 2009) and the attitude towards co-design in an online environment (Lee and Chang 2011). However, these studies did not consider the actual drivers of intention to participate in the customisation process, or consider how the different brands that offer customisation impact purchase intention. Research on customer perspectives has either considered drivers of the process of customisation, or investigated purchase intention as an outcome of customisation. There has been a lack of research considering the relationship between the process of customising and purchase intention.

4.1.3 Conceptual framework

It is well established in literature that individual antecedents drive intention to perform a behaviour. For example, the theory of planned behaviour (Ajzen 1991) and the technology acceptance model (Davis 1989) have both risen from the theory of reasoned action (Fishbein 1979). All three theories focused on inherent characteristics of the individual impacting behaviour. However, if intention is considered only through this lens, the interplay between the individual customer and the brands they experience is neglected. This provides an intriguing proposition as to the relative importance of factors inherent to individual customers, the importance of product categories, and the value of the brand in intention to perform behaviours.

The area of interest for this study is to understand the relationship between brand experience and individual and product related drivers in driving customisation. This paper considers this relationship in terms of a two-step decision process for consumers in the customisation journey; the intention to use a customisation toolkit, and the intention to purchase a customised product. This provides a framework to empirically test the relationship between individual, product and brand drivers, and
the impact these drivers have on distinct behavioural intentions. Figure 4-1 below presents the conceptual framework to investigate these relationships.

![Figure 4-1: Conceptual Model](image)

### 4.1.3.1 Individual drivers

Existing studies conceptualise innovativeness as the extent of an individual’s willingness to experiment with new products or services (Konuş, Verhoef and Neslin 2008). The concept of innovativeness provides an indicator for researchers and practitioners to better understand the psychological changes related to the adoption of an innovation. As customisation involves the customer in customising a new product to suit their needs from the offering firm, this could be seen as an innovative process, and therefore, it is expected innovativeness to increase intention to customise using a toolkit. Customisation, while increasingly more common offering for firms, is still a relatively new concept for a lot of customers, therefore it is hypothesised that a customer with high innovativeness is likely to have a higher purchase intention of customised products. As it is recognised in experience literature that customers seek out unique and memorable experiences with brands, it is hypothesised that due to the nature of innovativeness, it will also have a positive impact on brand experience. Thus, it is hypothesized:
H1: Innovativeness will have a positive effect on brand experience (H1a), intention to use a customisation toolkit (H1b) and purchase intention of customised products (H1c).

Variety seeking investigates a customer’s ideal level of stimulation, where a customer will seek out stimulation in the form of novelty, complexity or change in order to maintain their ideal level (Heitz-Spahn 2013; Rohm and Swaminathan 2004). In the context of retailing, variety seeking consumers can be defined as those who enjoy exploring several different products and brands while shopping (Rubio, Villaseñor and Yagüe 2019). Certain consumers have a series of wishes and needs that cannot be satisfied by a single brand but only via multiple brands and/or products, as such, variety seeking behaviour has been found to encourage customers to convert to a multichannel shopping behaviour in order to gain access to increased product availability (Konuş, Verhoef and Neslin 2008). Early research in to variety seeking found customers who are variety seekers find value in being exposed to increased variety of product options (Eastlick and Feinberg 1999). Consumers’ search for variety may be extrinsically motivated (i.e. the value of the alternatives) or intrinsic (i.e. preventing feelings of monotony and boredom) (Lyonski and Durvasula 2013). Studies have shown that variety-seeking can have a positive effect on satisfaction and loyalty (Tuu and Olsen 2013). As customisation toolkits offer customers a set of predefined options that expose them to hundreds of potential product configurations, it is expected variety seeking will have a positive effect in the context of customisation. Thus, it is hypothesized:
H2: Variety seeking will have a positive effect on brand experience (H2a), intention to use a customisation toolkit (H2b) and purchase intention of customised products (H2c).

It is important to consider a customer’s past experience of purchasing customised products in the context of this research. In a given shopping context, an individual’s experience increases familiarity with the buying process (Hernández, Jiménez and Martín 2010) and level of participation (Forsythe and Shi 2003). Prior research has also well-established prior experience in performing a behaviour influences satisfaction and often translates into future loyalty and repeat of the behaviour (Bolton and Lemon 1999; Lemon and Verhoef 2016; Verhoef 2003). Hence, past shopping experience, which increases buyers’ active participation, perceived control over the transaction satisfaction and loyalty, may subsequently enhance their behavioural control of sharing brand-related information. The Reasoned Action Approach (RAA) asserts that an individual’s intentional behaviour is predicted by their past behaviour, and mediated by a person’s beliefs regarding this behaviour (Fishbein and Ajzen 2011). This view suggests that the effect of consumers’ past experience on their future intentions is an important consideration. Given this research is concerned with the investigation of future purchase intention and a customer’s brand experience, past experience of customised products is a highly relevant factor to consider. Thus, it is hypothesized:

H3: Past experience with customisation will have a positive effect on brand experience (H3a), intention to use a customisation toolkit (H3b) and purchase intention of customised products (H3c).

4.1.3.2 Product drivers
Product involvement is the level of interest a customer’s has towards a product, where the interest is based on the relevant importance of the need to the customer (Damm, de Pablos Heredero and Rodríguez-Monroy 2013; Koufaris 2002; Zaichkowsky 1985). Previous literature has found product involvement to have a significant positive impact on enjoyment, online purchase behaviour and intention to return (Koufaris 2002). A customer that is highly involved in a product may also have more favourable assessment of the brand offering the product as they attribute a high value and importance to the product or service (Damm, de Pablos Heredero and Rodríguez-Monroy 2013). Therefore it is anticipated product involvement will have a positive impact on brand experience, as well as the intention outcomes, due to their increased interest in the product. Thus, it is hypothesized:

\[ H4: \text{Product involvement will have a positive effect on brand experience (H4a), intention to use a customisation toolkit (H4b) and purchase intention of customised products (H4c).} \]

4.1.3.3 Brand experience

Brakus, Schmitt and Zarantonello (2009) significantly advanced our understanding of brand experience, uncovering and measuring four dimensions; sensory, affective, behavioural and intellectual. The sensory dimension of brand experience refers to the stimulus the brand provides to the five senses. Affective refers to the feelings and emotions induced in the consumer by the brand. Behavioural includes physical interactions and bodily experiences with the brand, and intellectual refers to the ability of the brand to engage consumers thinking (Brakus, Schmitt and Zarantonello 2009; Zarantonello and Schmitt 2010). Prior research in this area has found brand experience to impact outcomes such as brand loyalty (Brakus, Schmitt and
Zarantonello 2009; Iglesias, Singh and Batista-Foguet 2011; Ramaseshan and Stein 2014), brand preference and repurchase intention (Ebrahim et al. 2016) and willingness to pay price premiums (Dwivedi, Nayeem and Murshed 2018). This paper expects to find similar relationship in the context of customisation on two aspects of behavioural intention: Thus, it is hypothesized:

*H5: Brand experience will have a positive effect on intention to use a customisation toolkit (H5a) and purchase intention of customised products (H5b).*

### 4.1.3.4 Intention

It is well established in literature related to online shopping that it is common to research products online before following through with the purchase (Konuş, Verhoef and Neslin 2008; Sands et al. 2016). The same principle can be applied during customisation in that customers have two distinct behaviours they need to perform. The first is to utilise the customisation toolkit in order to configure a product that best meets their needs. The second is to perform the purchase behaviour. As these are two separate actions for the customer, it is hypothesised that intention to use customisation toolkits will have a significant positive effect on the purchase behaviour of customised products. Thus, it is hypothesized:

*H6: Intention to use customisation toolkits will have a positive effect on purchase intention of customised products.*

Purchase intention represents the customer’s perception that they will purchase a product or service from the company in the future, taking into account their current situation (Hellier et al. 2003). Purchase intention is the outcome of focus for this
study, to understand if purchase intention is driven by individual, product or brand drivers.

4.2 Method

A sample of 393 adult participants (33% female, 56% aged between 25 to 34 years old, US residents) were recruited from Amazon Mechanical Turk (MTurk) and participated in the study for minimal compensation. An online survey was employed as it provides a timely, cost-effective method, which yields quality data (Buhrmester, Kwang and Gosling 2011; Goodman, Cryder and Cheema 2013; Paolacci and Chandler 2014). Respondents were first asked about their recent purchase history in relation to four well known sneaker brands which offer a customisation toolkit and the ability to purchase custom products. Respondents answered questions relating to the brand they had made their most recent purchase from with respondents omitted who had not made a purchase from one of the focal brands in the preceding 12-months. Any respondent who failed the attention checks or flat-lined in their responding were removed (Menictas, Wang and Fine 2011). After data cleaning, a final qualified sample of 319 responses was obtained (81% of the total sample).

Respondents were asked a series of questions about their behaviour in general, and specifically in relation to the brand they had recently purchased from. The conceptual model antecedents and outcomes were operationalized on a seven-point Likert scale anchored at 1 (strongly disagree) and 7 (strongly agree). All scales were based on measures from existing literature and Exploratory Factor Analysis (EFA) was used to summarise each measurement scale into factors. Innovativeness was measured with a five-item scale adapted from Konuş, Verhoef and Neslin (2008), variety seeking on a five-item scale adapted from Rohm and Swaminathan (2004), past experience on
a three-item adapted from Zboja and Voorhees (2006), product involvement on a three-item scale adapted from Mittal (1995), intention to use the toolkit on a four-item scale adapted from Moon and Kim (2001), purchase intention on a four-item scale adapted from Chandran and Morwitz (2005) and brand experience on a 12-item scale adapted from Brakus, Schmitt and Zarantonello (2009).

For each measurement scale, the constructs were simultaneously analysed to provide support for their underlying structure. The principle components method of extraction was used (Hair et al. 2010) and item loadings of .70 or greater was used as a baseline for including constructs. One item for innovativeness, two items for variety seeking and one item for brand experience were removed due to poor loadings during the EFA. Reliability was also assessed for each measurement scale using Cronbach’s alpha, with alpha scores above .70 considered indicative of reliable measurement (Pallant 2013).

4.3 Results

4.3.1 Evaluating the measurement model

Confirmatory Factor Analysis (CFA) was conducted to ensure validity and reliability. The overall fit indexes for the measurement model were acceptable, with a $\chi^2$-to-$df = 2.30$, $CFI = 0.95$, $SRMR = 0.05$ and $RMSEA = 0.06$. Some items were removed due to a standardized regression weight below 0.7 (Byrne 2001). Table 4-1 shows the items included in the final model.
Table 4-1: Confirmatory Factor Analysis Results

<table>
<thead>
<tr>
<th>Scale Items</th>
<th>Estimate</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Innovativeness</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I2</td>
<td>.89</td>
<td>3.93</td>
<td>1.81</td>
</tr>
<tr>
<td>I5</td>
<td>.89</td>
<td>4.18</td>
<td>1.78</td>
</tr>
<tr>
<td><strong>Variety Seeking</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VS2</td>
<td>.77</td>
<td>5.17</td>
<td>1.43</td>
</tr>
<tr>
<td>VS4</td>
<td>.81</td>
<td>4.86</td>
<td>1.48</td>
</tr>
<tr>
<td><strong>Past Experience</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PE1</td>
<td>.84</td>
<td>2.58</td>
<td>1.66</td>
</tr>
<tr>
<td>PE2</td>
<td>.97</td>
<td>3.11</td>
<td>1.87</td>
</tr>
<tr>
<td>PE3</td>
<td>.75</td>
<td>3.81</td>
<td>2.18</td>
</tr>
<tr>
<td><strong>Product Involvement</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PrIn1</td>
<td>.79</td>
<td>5.28</td>
<td>1.29</td>
</tr>
<tr>
<td>PrIn3</td>
<td>.95</td>
<td>5.15</td>
<td>1.43</td>
</tr>
<tr>
<td><strong>Intention to Use Toolkit</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IU1</td>
<td>.94</td>
<td>4.43</td>
<td>1.57</td>
</tr>
<tr>
<td>IU2</td>
<td>.92</td>
<td>4.26</td>
<td>1.62</td>
</tr>
<tr>
<td>IU3</td>
<td>.79</td>
<td>4.84</td>
<td>1.57</td>
</tr>
<tr>
<td><strong>Purchase Intention</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PuIn1</td>
<td>.96</td>
<td>4.88</td>
<td>1.74</td>
</tr>
<tr>
<td>PuIn2</td>
<td>.95</td>
<td>4.73</td>
<td>1.80</td>
</tr>
<tr>
<td>PuIn3</td>
<td>.92</td>
<td>4.50</td>
<td>1.92</td>
</tr>
<tr>
<td>PuIn4</td>
<td>.92</td>
<td>4.95</td>
<td>1.73</td>
</tr>
<tr>
<td><strong>Brand Experience</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BES1</td>
<td>.88</td>
<td>5.49</td>
<td>1.31</td>
</tr>
<tr>
<td>BES2</td>
<td>.90</td>
<td>5.57</td>
<td>1.30</td>
</tr>
<tr>
<td>BEA1</td>
<td>.91</td>
<td>4.76</td>
<td>1.58</td>
</tr>
<tr>
<td>BEA2</td>
<td>.86</td>
<td>4.46</td>
<td>1.57</td>
</tr>
<tr>
<td>BEB1</td>
<td>.71</td>
<td>5.11</td>
<td>1.50</td>
</tr>
<tr>
<td>BEB2</td>
<td>.81</td>
<td>4.65</td>
<td>1.61</td>
</tr>
<tr>
<td>BEI1</td>
<td>.92</td>
<td>4.23</td>
<td>1.75</td>
</tr>
<tr>
<td>BEI2</td>
<td>.73</td>
<td>4.59</td>
<td>1.81</td>
</tr>
<tr>
<td>BEI3</td>
<td>.88</td>
<td>4.28</td>
<td>1.72</td>
</tr>
</tbody>
</table>

*reverse item

Table 4-2 shows convergent validity was achieved with average variance extracted (AVE) above 0.5 on all constructs. Discriminant validity was achieved as the square root of the AVE for each construct is greater than the interfactor correlations for that construct (Fornell and Larcker 1981; Hair et al. 2010). Cronbach’s alpha was above 0.7 for all scales. Influential cases were tested for, with no cook’s distance greater than 1, indicating no influential cases in the data. There was also no multicollinearity found between constructs.
A final test was conducted to check common method bias. All final items in the study were tested using the Harman’s single-factor technique, to check that variance cannot be accounted for by a single general factor (Podsakoff et al. 2003). Results indicated extremely poor fit when all survey items were considered part of one general factor ($\chi^2$-to-$df = 10.60$, CFI = 0.54, SRMR = 0.13 and RMSEA = 0.17), indicative that common method bias does not pose a serious issue to the data (Podsakoff et al. 2003).

### 4.3.2 Testing the structural model

Structural equation modelling (SEM) was used to test the hypothesised model using the total sample using AMOS version 25. The overall fit indexes for the proposed mediation model were acceptable (Hu and Bentler 1999), with a $\chi^2$-to-$df = 2.30$, CFI = 0.95, SRMR = 0.05, and RMSEA = 0.06. Following the process outlined by Preacher and Hayes (2004), in order to establish mediation, a direct effect of the individual and product drivers on the intention to use a customisation toolkit and purchase intention outcomes first has to be established. The Preacher and Hayes method accounts for the weaknesses in the Baron and Kenny (1986) method, ensuring that the mediation is not due to type I or type II errors. The SEM analysis was run in three stages and estimated the direct and the indirect effects simultaneously using a bootstrapping procedure. Model 1 investigates the impact of

---

**Table 4-2: Validity and reliability**

<table>
<thead>
<tr>
<th></th>
<th>CR</th>
<th>AVE</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Purchase Intention</td>
<td>0.967</td>
<td>0.879</td>
<td>0.938</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Innovativeness</td>
<td>0.883</td>
<td>0.791</td>
<td>0.514</td>
<td>0.890</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Variety Seeking</td>
<td>0.770</td>
<td>0.626</td>
<td>0.485</td>
<td>0.610</td>
<td>0.791</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Past Experience</td>
<td>0.892</td>
<td>0.735</td>
<td>0.438</td>
<td>0.458</td>
<td>0.264</td>
<td>0.857</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Product Involvement</td>
<td>0.865</td>
<td>0.764</td>
<td>0.599</td>
<td>0.453</td>
<td>0.470</td>
<td>0.291</td>
<td>0.874</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Intention to Use Toolkit</td>
<td>0.914</td>
<td>0.781</td>
<td>0.869</td>
<td>0.533</td>
<td>0.554</td>
<td>0.369</td>
<td>0.642</td>
<td>0.883</td>
<td></td>
</tr>
<tr>
<td>7. Brand Experience</td>
<td>0.877</td>
<td>0.642</td>
<td>0.623</td>
<td>0.526</td>
<td>0.613</td>
<td>0.335</td>
<td>0.689</td>
<td>0.676</td>
<td>0.801</td>
</tr>
</tbody>
</table>

Square root of the AVE values shown at end of rows.
individual drivers on intention to use the customisation toolkit and purchase intention.

The fit indexes for Model 1 were acceptable with a $\chi^2$-to-$df = 2.37$, CFI = 0.98, SRMR = 0.04, and RMSEA = 0.06. Model 2 investigates the individual and product drivers, the fit indexes for Model 2 were acceptable with a $\chi^2$-to-$df = 2.16$, CFI = 0.98, SRMR = 0.04, and RMSEA = 0.06. Model 3 investigates the complete mediation model.

The model is conducted in three stages to demonstrate the relative explanatory power of the various constructs in the model including Individual (Model 1), Product (Model 2), and Brand (Model 3). Building the model this way established the individual and product drivers did have an effect on the outcome variables and that the drivers are mediated by brand experience. Table 4-3 shows the standardised path loadings for each model.

<table>
<thead>
<tr>
<th>Hypothesised Path</th>
<th>Model 1 $\beta$</th>
<th>Model 2 $\beta$</th>
<th>Model 3 $\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovativeness --&gt; Intention to Use</td>
<td>0.23**</td>
<td>0.14*</td>
<td>0.12^p</td>
</tr>
<tr>
<td>Variety Seeking --&gt; Intention to Use</td>
<td>0.37**</td>
<td>0.25**</td>
<td>0.14^p</td>
</tr>
<tr>
<td>Past Experience --&gt; Intention to Use</td>
<td>0.17**</td>
<td>0.12*</td>
<td>0.09^p</td>
</tr>
<tr>
<td>Product Involvement --&gt; Intention to Use</td>
<td>-</td>
<td>0.42**</td>
<td>0.29**</td>
</tr>
<tr>
<td>Brand Experience --&gt; Intention to Use</td>
<td>-</td>
<td>-</td>
<td>0.30**</td>
</tr>
<tr>
<td>Innovativeness --&gt; Purchase Intention</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>Variety Seeking --&gt; Purchase Intention</td>
<td>-0.01</td>
<td>-0.02</td>
<td>-0.04</td>
</tr>
<tr>
<td>Past Experience --&gt; Purchase Intention</td>
<td>0.13**</td>
<td>0.13**</td>
<td>0.12**</td>
</tr>
<tr>
<td>Product Involvement --&gt; Purchase Intention</td>
<td>-</td>
<td>0.05</td>
<td>0.05</td>
</tr>
<tr>
<td>Brand Experience --&gt; Purchase Intention</td>
<td>-</td>
<td>-</td>
<td>0.03</td>
</tr>
<tr>
<td>Intention to Use --&gt; Purchase Intention</td>
<td>0.81**</td>
<td>0.79**</td>
<td>0.78**</td>
</tr>
<tr>
<td>Innovativeness --&gt; Brand Experience</td>
<td>-</td>
<td>-</td>
<td>0.08</td>
</tr>
<tr>
<td>Variety Seeking --&gt; Brand Experience</td>
<td>-</td>
<td>-</td>
<td>0.32**</td>
</tr>
<tr>
<td>Past Experience --&gt; Brand Experience</td>
<td>-</td>
<td>-</td>
<td>0.08</td>
</tr>
<tr>
<td>Product Involvement --&gt; Brand Experience</td>
<td>-</td>
<td>-</td>
<td>0.48**</td>
</tr>
</tbody>
</table>

^p<0.1, *p<0.05, **p<0.01, $\beta$ = Standardised path coefficient

Model 1 suggests that the individual drivers have a significant impact on customer intention to use a customisation toolkit. However, of the individual drivers only past experience has a significant direct effect on purchase intention of customised
products. Variety seeking is the strongest predictor of customer intention to use the customisation toolkit.

With the addition of the product related driver in Model 2, the individual drivers, while still significant, have decreased path loadings on intention to use a customisation toolkit. In this model, product involvement is the strongest predictor of intention to use a customisation toolkit. This indicates that the customer's involvement in the product category offering customisation, is a stronger predictor of intention to use the toolkit, than the individual drivers.

The complete mediation model (Model 3) highlights brand experience is the strongest predictor of intention to use a customisation toolkit followed by product involvement, finding support for H5a and H4c. In this model, the individual drivers were found to only have a significant direct effect at p<0.1, highlighting their reduced impact when brand experience is considered. Past experience is the only individual driver to have a significant direct effect on purchase intention, supporting H3c. Intention to use a customisation toolkit has a direct effect on purchase intention of customised products, supporting H6. With regards to the direct and indirect effects in the model, it finds that brand experience partially mediates the relationship between product involvement and intention to use a customisation toolkit, and fully mediates the relationship between variety seeking and intention to use a customisation toolkit. Table 4-4 below includes the standardized total and direct effects from Model 3.
### Table 4-4: Standardised effects

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>I</th>
<th>VS</th>
<th>PE</th>
<th>PrIn</th>
<th>BE</th>
<th>IU</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brand Experience</td>
<td>.08</td>
<td>.32**</td>
<td>.08</td>
<td>.48**</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Intention to Use Toolkit</td>
<td>.14^</td>
<td>.23^</td>
<td>.12^</td>
<td>.44**</td>
<td>.30**</td>
<td>-</td>
</tr>
<tr>
<td>Purchase Intention</td>
<td>.14</td>
<td>.16</td>
<td>.22**</td>
<td>.40</td>
<td>.26</td>
<td>.78**</td>
</tr>
<tr>
<td><strong>Direct Effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brand Experience</td>
<td>.08</td>
<td>.32**</td>
<td>.08</td>
<td>.48**</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Intention to Use Toolkit</td>
<td>.12^</td>
<td>.14^</td>
<td>.09^</td>
<td>.29**</td>
<td>.30**</td>
<td>-</td>
</tr>
<tr>
<td>Purchase Intention</td>
<td>.03</td>
<td>-.04</td>
<td>.12**</td>
<td>.05</td>
<td>.03</td>
<td>.78**</td>
</tr>
</tbody>
</table>

^p<0.1, *p<0.05, **p<0.01, I = innovativeness, VS = variety seeking, PE = past experience, PrIn = product involvement, BE = brand experience, IU = intention to use toolkit

### 4.4 General Discussion

Both customisation and brand experience are growing research areas, offering potential for expanding the depth of theoretical and practical knowledge. With the coining of the term ‘experience economy’ back in 1998, the importance of experience has only strengthened with the acknowledgement that experience cannot be one-size-fits-all (Pine and Gilmore 2011). Existing and well accepted behavioural theories highlight the importance of the individual customer in encouraging specific behaviours (Ajzen 1991; Davis 1989). However the current study highlights the importance of delivering meaningful brand experiences to better connect and engage customers through customisation. This paper set out to investigate the interplay between individual, product, and brand drivers on behavioural intention, and to understand the relative importance of each in the context of customisation. This contributes an advanced understanding of knowledge in the area, going someway to addressing the call for research by Townsend, Kaiser and Schreier (2015), identifying how branding relates to customisation.

#### 4.4.1 Implications for theory

In a customisation setting, brand experience is a key predictor of intention to use a customisation toolkit. Individual drivers, when considered in isolation, have a
significant positive effect on intention to use a customisation toolkit, however when brand experience is considered, individual factors become less important. This research finds that brand experience is critical to consider in understanding behavioural intention in customisation, particularly when it comes to the intention to use a customisation toolkit, the precursor to purchase intention. Existing customisation literature has focused on how firms can implement customisation toolkits into their offering, however the findings of this research suggest that the overall brand experience is critical to get right, not just implementing a cost effective toolkit.

Interestingly, this paper finds that one of the individual drivers does drive brand experience. Variety seeking behaviour has a positive impact on brand experience, which poses some opportunities and also challenges in the context of both brand experience and customisation. Variety seekers are looking for new products and brands to try, which can attract them to customisation as they have the opportunity to create something completely different from pre-existing products. However, variety seeking behaviour may also mean firms need to constantly evolve and innovate their offering in order to engage variety seekers, who are likely to move on to other alternatives. Another individual driver important in the final mediation model is past experience. Past experience of purchasing customised products drives purchase intention, which is a common finding in previous literature, that past behaviour predicts future intention (Ajzen 1991).

Product involvement has a significant positive impact on brand experience and intention to use a customisation toolkit. That is, customers who are invested in the product category of the customisation offering are more likely to engage with the
brand and utilise the customisation toolkit, however, this may not be to purchase a customised product. This may be due to customers who are highly involved in the product category utilising the customisation toolkit for hedonic rather than utilitarian reasons. The relationship between brand experience and hedonic benefits has been well established in previous brand experience literature (de Oliveira Santini et al. 2018). Offering customisation could be seen as a way to foster brand experience for highly involved customers in the product category. On an individual level, customisation appeals to customers who are highly involved in the product category. An important consideration then, is if customisation can create value for customers who are not highly engaged in the product category.

Intention to use a customisation toolkit is the strongest predictor of purchase intention of customised products, and mediates the relationship between brand experience and purchase intention, as well as product involvement and purchase intention. This highlights that intention to use a customisation toolkit is an important first step in the customisation process, and that the intention to customise a product is a distinct action from that of purchasing a customised product. This is an important contribution to customisation literature, as a clear distinction in these behaviours has not yet been established. Further, the results highlight that while brand experience is important in order to encourage customers to use the toolkit, brand experience doesn't directly impact purchase intention. Due to the separation of these two actions, this paper highlights that while creating and fostering unique brand experiences for customers increased intention to begin the customisation process, these experiences alone do not increase purchase intention in customisation settings.
This study contributes to the growing body of brand experience literature, highlighting the importance of brand experience in the context of customisation. Specifically, brand experience has more impact than the product category or individual characteristics of the customer. In order to encourage intention to use customisation toolkits, brands need to establish compelling experiences for customers that meet their desire for unique and meaningful connections (Dwivedi, Nayeem and Murshed 2018; Verhoef 2003). It also contributes to the growing body of literature in customisation, considering the interplay between intention to use a customisation toolkit and purchase intention of customised products. This paper establishes there is an important distinction between these two actions and customers may be encouraged to customise using a toolkit and not follow through with the purchase.

4.4.2 Implications for brand managers
Understanding the role of brand experience in customisation can be a key driver of competitive success for brands. Managers should have confidence in placing strategic priority on improving the brand experience for customers, particularly if brands are looking to introduce, or grow, a customisation offering and want to encourage customers to use the toolkit in the first place. The findings emphasise it is less about targeting customers based on individual characteristics to encourage them to utilise customisation toolkits, but rather creating unique and compelling brand experiences that fit with the customisation offering. As customisation is an activity that heavily relies on input from the customer during the process, managers should seek input from customers in the designing of stimuli to further innovate and enhance the experience to drive participation in the customisation process, which is something that has been overlooked in prior literature. Existing customisation
research primarily focuses on the implementation of toolkits that are cost-effective and technologically feasible for the firm, and doesn't necessarily prioritise the user experience.

This paper also finds that past experience is the only individual driver to have a direct effect on purchase intention of customised products, and all other effects are mediated through intention to use a customisation toolkit. This is an important consideration for brands offering customisation in their product and service offering, suggesting a two tiered approach. 1) Encouraging new customers to participate in the process of customisation, and then 2) encouraging repeat customers through purchase intention.

4.4.3 Limitations and future research directions
Like all research, this study is subject to certain limitations. This paper considers specific individual, product and brand related drivers that have found to have significant effects in different contexts. There may be other factors that warrant consideration in a customisation context that have not previously been considered. Intention to use a customisation toolkit and purchase intention rather than using behavioural data is also considered. While existing research has established considerable correlation between intention and actual behaviour, it would be an interesting extension to this research to conduct this study with access to actual behavioural data. Future research could also consider investigating the connection between intention to use the toolkit and purchase intention in more depth, to further understand barriers that stop customers from following through with the customised purchase.
This paper uncovers a potential challenge for firms in keeping variety seeking customers engaged over an extended period of time. This may mean brands need to constantly update their experience offering to keep the interest of these types of customers. Future research should consider investigating the sustainability of constantly revitalising the brand experience and if this constant change encourages non-loyal behaviour long term.

Additionally, this study is cross-sectional in nature and not longitudinal. Therefore, customer’s experience with the brand is only accounting for a snapshot in time, and does not take into account the dynamic nature of customer relationships. Finally, while the data was collected across different brands offering customisation, the analysis was conducted with only one product category. Comparing results across different contexts, including those that offer standard and customised products and in different categories, would be an interesting avenue for future research.
Chapter 5: Conclusion

5.0 Introduction

The objective of this thesis is to delineate mass customisation strategies and to understand why customers participate in product customisation and how this changes perceptions of product outcomes. In relation to this, three papers, consisting of four separate studies, were designed to meet the research objectives of the thesis. The current chapter concludes the thesis by presenting a summary of findings; amalgamating the key findings from all studies, as well as discussing overarching implications, limitations, and future research with regard to product customisation.

5.1 Main Findings

The first paper in this thesis took a broad based perspective of mass customisation to develop a conceptual foundation for customisation strategies. This was in line with addressing research question one in the introduction of this thesis, which is “How can we conceptually make sense of, and delineate the areas of mass customisation?”. An integrative and systematic framework is presented that informs marketing theory through a co-creation lens. In doing so, four distinct strategies of mass customisation have been crystallised. This paper identifies that existing literature has investigated three specific mass customisation strategies, namely co-production, co-construction and co-design. Importantly, the paper outlines the concept of co-configuration among these other customisation strategies. To distinguish co-configuration from other mass customisation strategies, an analysis of the current research climate, and an agenda for further research to advance the theoretical basis of mass customisation is proposed, not only for academic
application but also for practitioners. The mass customisation strategies are
differentiated through both the stage and nature of the customer involvement in
mass customisation. The matrix highlights customers can involve themselves in the
customisation process during development (an early stage) through to
implementation (late stage). It also specifies the nature of the customer involvement,
and whether they are in control of the final product design. Customers can be
involved in customisation ranging from firm-driven design, through to customer-
driven design. Within these parameters the 2x2 matrix of customer roles in mass
customisation has been developed. Paper one laid foundation to identify a future
research agenda in mass customisation, more specifically in co-configuration.
Importantly, this research agenda led to the further development of paper two and
paper three in this thesis, which address some of the research agenda in paper one
in line with achieving outcomes to answer the research questions within this thesis.

Paper two set out to expand current understanding in mass customisation. Extant
theorising revolves predominantly around the firm’s perspective and customer-driven
insights have been limited by inconclusive findings, partially because of in-built
assumptions of customer homogeneity. Accordingly, potential market configurations
and respective strategic implications have been largely ignored to date. Paper two
was guided by addressing the second research question in this thesis which is: “what
type of customer segments exist in customisation when taking a configuration theory
approach, and how does segment membership change the perception of customised
products?” This question is addressed through a multi-study approach, collecting
data within and across product category contexts. Latent Cluster Analysis is utilised
to segment based on customisation experience, investigating the effects of
covariates on segment membership and the outcomes of these segments. Relevant
market segments are identified including Casual customisers, Non-customisers, Playful customisers and Product enthusiasts. The impact of relevant covariates is then investigated. Then, how segment membership impacts customisation outcomes (in particular NPD success) is investigated. Segment membership was found to impact purchase intent and increases the perceived aesthetics of the customised product, with customers who customise more likely to purchase, or re-purchase a customised product within 12 months, and perceive higher aesthetics and symbolism as an outcome. This is an important finding and extends research conducted by Homburg, et al. (2015). Homburg, et al. (2015) developed the NPD factors and the impact these factors have on purchase intention, willingness to pay, and the inclusion of brand attitude as a partial mediator. This paper extended the existing research by investigating the behaviour that actually leads to a perceived difference in NPD factors in customisation. An important finding in paper two is the emphasis of the stable segment types across product categories, suggesting these segments are likely to be found across many different customisation contexts. That is, organisations that do not currently offer customisation in their offering, can use these segments as a basis to understand potential customers.

Finally, paper three investigates what drives intention to use a customisation toolkit and purchase intention of customised products, specifically in co-configuration contexts. This addresses the third research question in this thesis “What role do individual, product and brand elements play in customers’ participation in mass customisation?”. This is done through applying a brand experience lens, which is important because the connection between branding and customisation is still relatively unclear (Townsend, Kaiser and Schreier 2015). Traditional behavioural theories posit intention to perform a behaviour is driven by key characteristics
inherent to the individual customer (Ajzen 1991; Davis 1989; Fishbein 1979), but this does not take into account the impact that the brand has on customer intention. It is critical to understand the interplay of individual and brand factors, to understand how these drivers impact behavioural intention in a customisation context. Paper three finds brand experience is the strongest predictor of intention to customise using a toolkit, mediating the relationship between variety seeking and product involvement on intention to use a customisation toolkit. Importantly, when considered in isolation, the individual drivers had a significant impact, however, in the final mediation model, these become less important.

5.2 Implications

Taken together, this thesis presents several important implications for brand managers. First, with paper one, co-configuration is conceptualised as an important area of mass customisation. A matrix compares and contrasts co-configuration with three existing well-known and studied areas of mass customisation; namely co-production, co-construction and co-design. This conceptual paper delineates four clear strategies of mass customisation. Furthermore, paper one proposes a framework and future research agenda for further investigation of co-configuration, such as to understand what drives customer intention to participate, how co-configuring products impacts the perception of outcomes, and the optimal level of co-configuration that firms should offer. It also poses questions around the investigation into the inclusion of technology such as VR, AI and IoT, and how this would change factors effecting customer participation.

Paper two contributes an advanced understanding of co-configuration behaviour, which assists in the development of future marketing strategies for firms. An
important issue to address when segmenting customers is to ensure the stability of segments. This has a managerial implication in understanding the active and profitable segments and focusing resources on prioritising targeting these customers over other segments that may not purchase as frequently. Paper two addressed this stability and segment attractiveness through a multi-study approach, comparing segments across studies within and between product contexts. The paper finds evidence of four customer segments, three of which are involved in actively purchasing customised products. The segments function as stable and internally consistent market configurations across different contexts despite the size of the segments varying, indicating a deeper underlying reason for these customers forming homogenous groups. Depending on context, 60% to 80% of customers participate in co-configuration activities. Managers should be encouraged to ‘get to know’ these groups of consumers and understand the motivations and desires with regard to customising products. For instance, casual customizers are relatively new to the customization process and typically have not engaged in customization on many occasions. The opportunity for those in this segment is to convert them to product enthusiasts, by encouraging them to continue customising and offering them opportunities to maximize their utility from new product design features. Managers are encouraged to consider the role and importance of the identified covariates for each segment. Doing so will allow for an optimal configuration of resources for optimal strategic alignment with the market.

Paper three contributes to the growing body of literature in both customisation and brand experience. This paper finds support for brand experience in promoting positive outcomes. However, in building on previous brand experience research, the study considers the interplay of individual and product related drivers with brand
experience. An important implication from this paper is the distinction of intention to customise and purchase intention as a two-step process for customers. Customers that have a positive brand experience are more likely to use the customisation toolkit offered by the brand, but this does not impact purchase intention directly. Managers should focus on enhancing brand experience for customers through sensory, affective, behavioural and intellectual dimensions. By doing so, they can encourage more customers to customise using the customisation toolkit, this in turn may increase the intention of customers to follow through with a purchase of the customise product. Past experience is the only individual driver to have a significant positive effect on purchase intention of customised products, so for brands who already have a customisation offering, they should invest in retargeting customers who have previously purchased. This builds on the finding from paper two, in encouraging the segment of product enthusiasts to make repeat purchases.

5.3 Limitations

While this research has made contributions to both academic literature and practical applications, as with any research there are limitations that need to be discussed. This thesis considers three overarching areas in order to understand customisation behaviour, namely individual, product and brand related drivers. While certain other constructs have also been considered in the studies that have been conducted, there may be other individual or social behavioural frameworks that should also be considered in future research. Additionally, purchase intention is only measured of customised products and not repeat measured for a standard product offering from the same company. Therefore, the impact of these factors on purchase intention of
customised products cannot be compared to that of a standard product from the same company.

This thesis used cross-sectional data, and while three rounds of data collection were undertaken, there is still a lack of longitudinal data. Therefore, given both segmentation and structural equation modelling analysis techniques are conducted using survey data, the findings cannot be cross-validated. Additionally, due to this study also being cross-sectional in nature and not longitudinal, customer’s experience with the brand is only accounting for a snapshot in time, and does not take into account the dynamic nature of customer relationships. Two rounds of data were collected through Amazon Mechanical Turk (MTurk), which while commonly used among social science researchers, there are limitations based on it being an online self-reporting tool, including online misrepresentation of the actual population, lack of experimenter control, and an inability for experimenters to answer questions and resolve potential confusions (Rand 2012; Thomas and Clifford 2017). To mitigate the potential downside of using MTurk, a best-practice recommendation was adhered to (Thomas and Clifford 2017), involving the inclusion of attention checks and ‘catch trial’ questions, where respondents had to select a less obvious response (Paolacci and Chandler 2014). The final limitation relating to data collection is the skewed sample from the industry partner. While the sample is skewed in relation to the general population, this is representative of the customer base of the retailer, and therefore a valid sample base for the study.

While the data was collected across different brands offering customisation, the structural equation modelling for paper three was conducted at the overall level in order to meet analysis assumptions. Thus, comparing results across different
contexts, including those that offer standard and customised products, would be an interesting avenue for future research.

5.4 Future Research Directions

This thesis has investigated customisation and demonstrated the importance of this topic across three studies. The first paper provides a clear conceptual framework in which to understand how customers are involved in customisation and poses interesting opportunities for future research endeavours. The second and third papers in this thesis have further demonstrated the importance of understanding this topic area through the application of latent class analysis to identify customer segments in customisation, and then to understand the interplay of individual, product and brand related drivers on intention. While this thesis has made some attempt at providing answers to these questions, understanding customisation from the customer perspective is still in its infancy and therefore, there are still key opportunities to discuss.

5.4.1 Opportunity 1: Customisation segments in difference contexts

Study one in this thesis identified four distinct strategies of mass customisation that exist. Three of these types have been well studied, thus the focus of this thesis was the newly conceptualised strategy of co-configuration. The thesis went on to identify four segments that exist in co-configuration (study two), and how individual, product and brand related factors interplay in this context (study three). Given the segments in study two were found to be internally consistent and stable across product context, there is opportunity to investigate whether the same segments exist across customisation contexts as well.
5.4.2 Opportunity 2: Dynamic customisation behaviour
Customer behaviour and the interactions they have with brands are dynamic. This research has sought to understand segments, accounting for a snapshot of a single point in time. There is an opportunity to understand if customers transition between segments overtime, and the likelihood of this transition. This would better understand if these segments are static, or if customers can evolve overtime which would impact how organisations configure for enduring success. Future studies could also consider and test strategies that encourage customers to transition segments and utilise customisation in more meaningful ways. Alternatively, further studies could also test how based on customisation segment, firms can pre-personalise products to enhance the benefit of customisation-via-starting-solution toolkits.

5.4.3 Opportunity 3: Virtual reality and artificial intelligence
The first study in this thesis highlighted the relevance of considering innovative methods of offering customisation to customers, and in particular, how technology can be utilised to deliver value. This leads to an opportunity for future research to investigate the impact of using virtual reality to enhance the customer’s experience of customising products, allowing them to view and engage with a simulation of the product before purchasing. This may be particularly relevant in the near future as the use of technologies such as virtual reality become more widespread and accessible for firms as a means of interacting with customers. In fact, virtual and augmented reality have been listed as a core component driving the future of engagement in the retail industry (Grewal, Roggeveen and Nordfält 2017). This leads to a number of questions for future research in the space of mass customisation. For example, does virtual reality truly enhance the customer experience when applied to mass customisation toolkits? Alternatively, is it simply perceived as a gimmick that piques
interest initially but doesn't assist in promoting positive outcomes? Furthermore, the introduction of AI in to the customisation process could simplify choice complexity and streamline decision making for customers, reducing perceived costs for customers during the process. When considering the barriers customers face in customising products, investigating modern technology on reducing these barriers is important to extend our understanding in the area. Technology is constantly evolving so what does the future of customisation look like with the embedding of VR and AI into the core capabilities?

5.4.4 Opportunity 4: Integrating blockchain technology
A key focus when implementing mass customisation into a company’s offering is maintaining the cost efficiencies of mass production while delivering the benefits of customisation to customers. The current predominant models have limitations in the degree to which firms are able to involve customers in the customisation process, and the timeframes in which customers can make product changes. One opportunity lies in integrating blockchain technology to increase information accessibility along the supply chain, and increase automation of the customisation process, while ensuring a higher level of data security. While there are obvious benefits to firms through further reducing production costs, for customers, this could mean they are able to request last minute changes to their customised product without facing additional fees or processing times. Furthermore, blockchain enhances integrity and security of data, which may have implications on customer willingness to share personal information to optimise their customised product specifically for them. Blockchain technology opens up an important stream for future research to investigate the implications for customers in a mass customisation setting.
physical product customisation, the opportunity also exists for service organisations to leverage blockchain to better tailor services for individual customer needs.

5.4.5 Opportunity 5: The optimal customisation level

As highlighted in paper one the optimal level of customisation for a firm to offer is still unknown. That is, how firms balance customer demands with customers’ ability to customise products to develop and optimal offering. When considering the findings of paper two, that four types of customer segments exist in customisation, there is an opportunity to further investigate the optimal level of customisation to offer to engage each segment. Additionally, research could examine whether the customisation platform or toolkit should be dynamic in order to identify customer type and adapt accordingly. The segment of customers who are actively engaging in customisation on a regular basis, termed product enthusiasts, is substantially smaller than the other three segments, at 2.5 per cent in the general consumer study. Considering this in relation to a key finding from paper three, product involvement is a key driver of intention to use a customisation toolkit, this begs the question whether mass customisation should truly be offered on mass.

While mass-market brands such as Nike and Adidas have been successful in offering customisation as additional service to their core product, for smaller retailers, offering customisation to the masses does not seem to be a guarantee for success. Take Australian retailer Shoes of Prey as an example. Shoes of Prey went from winning awards for “Best Shoe Ever” and “Store Design of The Year” to announcing they were not able to fully crack mass market adoption in less than 10 years. While there has been much academic research in to mass customisation in the implementation of toolkits, future research should investigate if there is really a space in the market for smaller brands who solely offer customisation on mass or if,
contradictory to the name, the concept is only viable for these retailers in niche markets, and mass customisation should be left to mass-market brands who can absorb the costs more effectively.
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Franke, Nikolaus, Peter Keinz, and Christoph J. Steger (2009), "Testing the Value of Customization: When Do Customers Really Prefer Products Tailored to Their Preferences?" *Journal of Marketing* 73.5, 103-21.


Helson, Harry (1948), "Adaptation-Level as a Basis for a Quantitative Theory of Frames of Reference." Psychological review 55.6, 297.


INVITATION TO PARTICIPATE IN A RESEARCH PROJECT

Project Title: Customer Participation in Co-configuration: Antecedents and Outcomes

Investigators: Jessica Pallant, BBus (Marketing)
Associate Professor Ingo Karpen
Dr Emily Chung
Associate Professor Sean Sands

Dear Participant,

You are invited to participate in a research project being conducted by RMIT University. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please ask one of the investigators.

Who is involved in this research project? Why is it being conducted?
This study is being conducted as part of a PhD thesis. Associate Professor Ingo Karpen is the Senior Supervisor overseeing this project.

Why have you been approached?
We have contacted you to ask if you will fill out a survey about the intention to customise products, and the outcomes of participating in customisation. You have been selected randomly from a panel database.

What is the project about? What are the questions being addressed?
We are interested to understand why customers would choose to customise a product, and which factors play a role in this context. We will be asking a series of questions about customising products based on rigorously tested academic scales adapted for this study.

If I agree to participate, what will I be required to do?
If you agree to participate, you will be asked to fill in an online survey about customisation of Sneakers, and your thoughts on the outcome of customising

Appendix

A1. Research Instrument for Paper Two
Sneakers. We will also ask you a series of questions to ensure we interview a broad range of people.

**What will happen to the information I provide?**

The results of this survey will be published as an Appropriate Durable Record (ADR) in academic publications, and thesis in the RMIT Repository. This is publicly accessible online library of research papers. All data collected will be anonymous and no identifying information will be collected from you as a participant. Because of the nature of data collection, we are not obtaining written informed consent from you. Instead, we assume that you have given consent by your completion of the survey.

**What are my rights as a participant? What are the possible risks or disadvantages?**

The online survey should take no more than 15 minutes, and there are no perceived risks outside of providing time to complete the survey. Participation in the survey is completely voluntary and you may withdraw at any time.

If you are unduly concerned about your responses to any of the questionnaire items or if you find participation in the project distressing, you should contact Jessica Pallant as soon as convenient. Jessica will discuss your concerns with you confidentially and suggest appropriate follow-up, if necessary.

**What are the benefits associated with participation?**

Completing the survey will assist the researchers with their student thesis and ADR. Whom should I contact if I have any questions?

*Yours sincerely*

Jessica Pallant  
BBus(Marketing)

**Security of the website**

Users should be aware that the World Wide Web is an insecure public network that gives rise to the potential risk that a user’s transactions are being viewed, intercepted or modified by third parties or that data which the user downloads may contain computer viruses or other defects.

**Security of the data**

This project will use an external site to create, collect and analyse data collected in a survey format. The site we are using is Qualtrics. If you agree to participate in this survey, the responses you provide to the survey will be stored on a host server that is used by the researchers involved in this project. No personal information will be
collected in the survey so none will be stored as data. Once we have completed our data collection and analysis, we will import the data we collect to the RMIT server where it will be stored securely for five (5) years. The data on the Qualtrics host server will then be deleted and expunged.

If you have any concerns about your participation in this project, which you do not wish to discuss with the researchers, then you can contact the Ethics Officer, Research Integrity, Governance and Systems, RMIT University, GPO Box 2476V VIC 3001. Tel: (03) 9925 2251 or email human.ethics@rmit.edu.au
To begin, we just have a few questions about you in general.

Are you....?

☐ Male (1)
☐ Female (2)

We would like to understand your general shopping preferences. To what extent do you agree or disagree with the following statements? Where $1 = $ strongly disagree and $7 = $ strongly agree

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<td>I am generally more likely to buy a product if it is rare</td>
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<td>In general, I enjoy having things that others do not have</td>
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<td>I regularly purchase different variants of a product just for a</td>
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<td>I am one of those people who try a new product first, just</td>
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<td>I find it boring to use the same product (or brand) repetitively</td>
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<td>I like to try new and different products</td>
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<td>I always have the newest gadgets</td>
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<td>I like shopping</td>
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<td>I take my time when I do shopping</td>
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In this research we are considering the customisation of products through a list of pre-defined components. Specifically, by the customisation of products we mean a customer is able to select how they want the product to look from a predetermined list of options. For example, you may be able to change the colour, or add features, such as your initials.

AWARE_Are you aware of any brands that offer customisation of products as described above?

☐ Yes
☐ No

Display This Question: If Are you aware of any brands that offer customisation of products as described above? Yes Is Selected

Please list some of the main brands that you are aware of that offer customisation of products as described above?

OPEN TEXT

Now we would like to understand your experiences (if any) of customising. Have you ever customised a product even if you did not follow through with the purchase?

☐ Yes
☐ No

How recent was your last customised purchase?

☐ In the last week
☐ In the last month
☐ In the last 2 to 3 months
☐ In the last year
☐ More than one year ago
☐ I have never purchased a customised product

Display This Question: If How recent was your last customised purchase? I have never purchased a customised product Is Selected
You noted that you have customised a product but have not purchased one, why is that?

- Didn't have the elements I wanted (1)
- It was too hard to choose (2)
- It was too much hassle (eg. too much effort) (3)
- It was too difficult (eg. too hard) (4)
- It was too expensive (5)
- I was happy with the standard product (6)
- Other (please specify) (7) ____________________

Display This Question: If How recent was your last customised purchase? I have never purchased a customised product Is Not Selected

How many customised products have you purchased in the last 12 months for your personal use?

Display This Question: If How recent was your last customised purchase? I have never purchased a customised product Is Not Selected

Have you shared your customised purchase on the internet or via social media in the past 12 months?

- Yes
- No

Display This Question: If random Is Equal to 1 Or random Is Equal to 2
We are now interested in the factors that might make people more or less likely to customise sneakers.

Display This Question: If random Is Equal to 3 Or random Is Equal to 4
We are now interested in the factors that might make people more or less likely to customise leather accessories such as wallets, handbags and key chains.

Firstly we would like to know how interested you are in [category] in general. To what extent do you agree or disagree with the following statements? Where 1 = strongly disagree and 7 = strongly agree
This type of product is very important to me

For me, this type of product does not matter

I have a strong interest in this type of product

| How often do you shop for [category]?
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<td>Never</td>
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<td>-------</td>
</tr>
<tr>
<td>Online</td>
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<tr>
<td>In-store</td>
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And to what extent do you agree or disagree with the following statements about the opinions of others? Where 1 = strongly disagree and 7 = strongly agree

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<tr>
<th>And to what extent do you agree or disagree with the following statements about the usefulness of customising [category] specifically? Where 1 = strongly disagree and 7 = strongly agree</th>
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</thead>
<tbody>
<tr>
<td>People whose opinions I value prefer me to purchase customised [category]</td>
</tr>
<tr>
<td>People who are important to me think that I should purchase customised [category]</td>
</tr>
<tr>
<td>Customising [category] can improve my shopping performance</td>
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</table>
Customising [category] can increase my shopping productivity

Customising [category] can increase my shopping effectiveness

Customising [category] enables me to buy what I want

I find customising [category] useful

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<th>Confused</th>
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<td>Frustrated</td>
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<td>In control</td>
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<td>Calm</td>
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And thinking now about customising [category], to what extent do you agree or disagree that customising [category] online makes you feel...? Where 1 = strongly disagree and 7 = strongly agree

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<thead>
<tr>
<th>Wise</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensible</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Rewarding</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Based on what you have answered so far, to what extent do you agree with the following statements. Purchasing customised [category] is...? Where 1 = strongly disagree and 7 = strongly agree
And to what extent do you agree with the following statements. Where 1 = strongly disagree and 7 = strongly agree

<table>
<thead>
<tr>
<th>I expect that I will purchase customised [category] in the next 12 months</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>

Think about if you were to use the following toolkit to customise [category] from [brand]. Please use the series of descriptive words listed below to indicate how you think you would find the customisation process. The customisation process would be:

| Simple | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Complex |
| Confusing | | | | | | | | Clear |

And to what extent do you agree with the following statements. When customising [category] from [brand]:

<table>
<thead>
<tr>
<th>I have a high level of participation in the design process</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am very much involved in deciding how the product is designed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Think about if you were to purchase customised [category] from [brand]. To what extent do you agree or disagree the customised [category] you purchased:

| is visually striking | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| is good looking | | | | | | | |
| looks appealing | | | | | | | |
| is likely to perform well | | | | | | | |
seems to be capable of doing its job
seems to be functional
helps me in establishing a distinctive image
is helpful to distinguish myself from the mass
accurately symbolises or expresses my achievements

Still thinking about if you were to purchase customised [category] from [brand], to what extent do you agree with the following statements?

<table>
<thead>
<tr>
<th>I perceive this product as highly unique</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customised [category] are one of a kind</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My [category] design is really special</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We would now like to get your thoughts on the [brand] Brand. To what extent do you agree with the following statements?

<table>
<thead>
<tr>
<th>[brand] is a wonderful brand.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>[brand] makes me feel good.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[brand] is totally awesome.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have neutral feelings about [brand].</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[brand] makes me very happy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I love [brand]!</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have no particular feelings about [brand].</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[brand] is a pure delight.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
I am passionate about [brand].

I’m very attached to [brand].

On a scale of 1 to 10, where 1 is ‘do not agree’ and 10 is ‘agree’, What is your general view of [brand]?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is unique</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is different from competitors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is special</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

On a scale of 1 to 7, where 1 is ‘strongly disagree’ and 7 is ‘strongly agree’, to what extent do you agree with the following statements.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using [category] stimulates my interest to learn more about the [brand] brand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I think about the [brand] brand a lot when I’m using [category]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using [category] makes me think about the [brand] brand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel very positive when I use [category]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using [category] makes me happy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel good when I use [category] from [brand]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I’m proud to use [category] from [brand]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I spend a lot of time using [category] from [brand], compared to other brands</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Whenever I'm using PRODUCT, I usually use [brand].

[brand] is one of the brands I usually use when I use [category].

In which of the age brackets do you fall?

- Under 18 (1)
- 18 – 24 years (2)
- 25 – 34 years (3)
- 35 – 44 years (4)
- 45 – 54 years (5)
- 55 – 64 years (6)
- 65 + years (7)
- I would prefer not to answer (8)

What is your annual household income before tax?

- less than $20,000 (1)
- $20,000 - $40,000 (2)
- $40,001 - $60,000 (3)
- $60,001 - $90,000 (4)
- $90,001 - $120,000 (5)
- more than $120,000 (6)
- I would prefer not to answer (7)
- I do not know (8)

What is your highest level of education?

- Did not complete high school (1)
- High school graduate (2)
- Vocational Qualification (eg. Certificate, Diploma, Advanced Diploma) (3)
- Associate Degree (4)
- Bachelor Degree (5)
- Postgraduate Degree (6)
- Doctorate (7)

This is now the end of the survey, your responses have been extremely valuable. Please feel free to leave feedback on the project.
A2. Research Instrument for Paper Three

INVITATION TO PARTICIPATE IN A RESEARCH PROJECT

Project Title: Customer Participation in Co-configuration: Antecedents and Outcomes

Investigators: Jessica Pallant, BBus (Marketing)
Associate Professor Ingo Karpen
Dr Emily Chung
Associate Professor Sean Sands

Dear Participant,

You are invited to participate in a research project being conducted by RMIT University. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please ask one of the investigators.

Who is involved in this research project? Why is it being conducted?
This study is being conducted as part of a PhD thesis. Associate Professor Ingo Karpen is the Senior Supervisor overseeing this project.

Why have you been approached?
We have contacted you to ask if you will fill out a survey about the intention to customise products, and the outcomes of participating in customisation. You have been selected randomly from a panel database.

What is the project about? What are the questions being addressed?
We are interested to understand why customers would choose to customise a product, and which factors play a role in this context. We will be asking a series of questions about customising products based on rigorously tested academic scales adapted for this study.

If I agree to participate, what will I be required to do?
If you agree to participate, you will be asked to fill in an online survey about customisation of Sneakers, and your thoughts on the outcome of customising Sneakers. We will also ask you a series of questions to ensure we interview a broad range of people.
What will happen to the information I provide?

The results of this survey will be published as an Appropriate Durable Record (ADR) in academic publications, and thesis in the RMIT Repository. This is publicly accessible online library of research papers. All data collected will be anonymous and no identifying information will be collected from you as a participant. Because of the nature of data collection, we are not obtaining written informed consent from you. Instead, we assume that you have given consent by your completion of the survey.

What are my rights as a participant? What are the possible risks or disadvantages?

The online survey should take no more than 15 minutes, and there are no perceived risks outside of providing time to complete the survey. Participation in the survey is completely voluntary and you may withdraw at any time.

If you are unduly concerned about your responses to any of the questionnaire items or if you find participation in the project distressing, you should contact Jessica Pallant as soon as convenient. Jessica will discuss your concerns with you confidentially and suggest appropriate follow-up, if necessary.

What are the benefits associated with participation?

Completing the survey will assist the researchers with their student thesis and ADR.

Whom should I contact if I have any questions?

Yours sincerely

Jessica Pallant
BBus(Marketing)

Security of the website

Users should be aware that the World Wide Web is an insecure public network that gives rise to the potential risk that a user’s transactions are being viewed, intercepted or modified by third parties or that data which the user downloads may contain computer viruses or other defects.

Security of the data

This project will use an external site to create, collect and analyse data collected in a survey format. The site we are using is Qualtrics. If you agree to participate in this survey, the responses you provide to the survey will be stored on a host server that is used by the researchers involved in this project. No personal information will be collected in the survey so none will be stored as data. Once we have completed our data collection and analysis, we will import the data we collect to the RMIT server where it will be stored securely for five (5) years. The data on the Qualtrics host server will then be deleted and expunged.
If you have any concerns about your participation in this project, which you do not wish to discuss with the researchers, then you can contact the Ethics Officer, Research Integrity, Governance and Systems, RMIT University, GPO Box 2476V VIC 3001. Tel: (03) 9925 2251 or email human.ethics@rmit.edu.au
Block 1: Introduction

To begin, we just have a few questions about you in general.

Are you....?

☐ Male (1)
☐ Female (2)

Block 2: General Behaviour

We would like to understand your general shopping preferences. To what extent do you agree or disagree with the following statements? Where 1 = strongly disagree and 7 = strongly agree

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovativeness_I regularly purchase different variants of a product just for a change.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovativeness_I am one of those people who try a new product first, just after the launch</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovativeness_I find it boring to use the same product (or brand) repetitively</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovativeness_I like to try new and different products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovativeness_I always have the newest gadgets</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>VarSeek_I am cautious in trying new products*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VarSeek_I enjoy exploring alternative stores</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VarSeek_Investigating new stores is generally a waste of time*</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
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<td>4</td>
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<td>7</td>
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<td>---</td>
</tr>
<tr>
<td>VarSeek_I like to try new products and brands for fun</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VarSeek_I like to buy the same brand*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ShoppingEnjoyment_Shopping is not a pleasant activity to me *</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ShoppingEnjoyment_Going shopping is one of the enjoyable activities of my life</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ShoppingEnjoyment_Shopping wastes my time. *</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ShoppingEnjoyment_I enjoy shopping just for the fun of it</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ShoppingEnjoyment_I make my shopping trips fast *</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BrandLoyal_I have favourite brands I buy over and over</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BrandLoyal_Once I find a product or brand I like, I stick with it</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BrandLoyal_I go to the same stores each time I shop</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BrandLoyal_I change brands I buy regularly *</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BrandCon_The well-known national brands are best for me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BrandCon_The more expensive brands are usually my choices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
**Block 3: General Customisation**

In this research we are considering the customisation of products through a list of pre-defined components. Specifically, by the customisation of products we mean a customer is able to select how they want the product to look from a predetermined list of options. For example, you may be able to change the colour, or add features, such as your initials.

**AWARE** Are you aware of any brands that offer customisation of products as described above?

- ☐ Yes
- ☐ No

**Display This Question:** If Are you aware of any brands that offer customisation of products as described above? Yes Is Selected

Please list some of the main brands that you are aware of that offer customisation of products as described above.

**OPEN TEXT**

To what extent do you agree or disagree with the following statements about your experience purchasing customised products? Where 1 = strongly disagree and 7 = strongly agree
PastExp_I purchase customised products all the time

PastExp_I have a good deal of experience purchasing customised products

PastExp_I have purchased customised products in the past

UtilHed_During the customisation process, customers often customise products through the use of online toolkits that help them select the product options that suit them. Please use the series of descriptive words listed below to indicate your feelings about customising products using a customisation toolkit. The customisation process is:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not effective</td>
</tr>
<tr>
<td>Helpful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not helpful</td>
</tr>
<tr>
<td>Functional</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not functional</td>
</tr>
<tr>
<td>Necessary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not necessary</td>
</tr>
<tr>
<td>Practical</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not practical</td>
</tr>
<tr>
<td>Not fun</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fun</td>
<td></td>
</tr>
<tr>
<td>Dull</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Exciting</td>
</tr>
<tr>
<td>Not delightful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Delightful</td>
</tr>
<tr>
<td>Not thrilling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Thrilling</td>
</tr>
<tr>
<td>Unenjoyable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>enjoyable</td>
<td></td>
</tr>
</tbody>
</table>

**Block 4: Footwear Customisation**

We are now interested in the factors that might make people more or less likely to customise footwear. Specifically, by the customisation of products we mean a customer is able to select how they want the product to look from a predetermined list of options. For example, you may be able to change the colour, or add features, such as your initials.
Are you aware of any brands that offer customisation of footwear?

☐ Yes
☐ No

Display This Question: If Are you aware of any brands that offer customisation of products as described above? Yes Is Selected

Please list some of the main brands that you are aware of that offer customisation of footwear.

OPEN TEXT

How often do you shop for footwear…?

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Less than Once a month</th>
<th>Once a month</th>
<th>2-3 times a month</th>
<th>Once a week</th>
<th>2-3 times a week</th>
<th>Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-store</td>
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</tr>
</tbody>
</table>

We would like to know how interested you are in footwear in general. To what extent do you agree or disagree with the following statements? Where 1 = strongly disagree and 7 = strongly agree

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProdInv_This type of product is very important</td>
<td></td>
<td></td>
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<tr>
<td>ProdInv_For me, this type of product does not</td>
<td></td>
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<tr>
<td>ProdInv_I have a strong interest in this type</td>
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</tbody>
</table>

Block 5: Brand Customisation

[Brand] offers customisation of footwear through an online customisation toolkit. We would now like to get your thoughts on the [BRAND] brand. To what extent do you
agree or disagree with the following statements? Where 1 = strongly disagree and 7 = strongly agree

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensory_This brand makes a strong impression on my visual sense or other senses.</td>
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<tr>
<td>Sensory_I find this brand interesting in a sensory way.</td>
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</tr>
<tr>
<td>Sensory_This brand does not appeal to my senses.*</td>
<td></td>
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<tr>
<td>Affective_This brand induces feelings and sentiments.</td>
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</tr>
<tr>
<td>Affective_I do not have strong emotions for this brand.*</td>
<td></td>
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<tr>
<td>Affective_This brand is an emotional brand.</td>
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<tr>
<td>Behavioural_I engage in physical actions and behaviours when I use this brand.</td>
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<tr>
<td>Behavioural_This brand results in bodily experiences.</td>
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</tr>
<tr>
<td>Behavioural_This brand is not action oriented.*</td>
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</tr>
<tr>
<td>Intellectual_I engage in a lot of thinking when I encounter this brand.</td>
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</tr>
<tr>
<td>Intellectual_This brand does not make me think.*</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Intellectual_This brand stimulates my curiosity and problem solving.</td>
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</tbody>
</table>
On a scale of 1 – 7, where 1 = strongly disagree and 7 = strongly agree, how much do you agree with the following statements about using the [BRAND] toolkit to customise footwear, even if you do not follow through with purchasing the product?

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>I will use the customisation toolkit on a regular basis in the future</td>
<td></td>
<td></td>
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<tr>
<td>I will frequently use the customisation toolkit in the future</td>
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</tr>
<tr>
<td>I will strongly recommend others to use the customisation toolkit</td>
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</tbody>
</table>

Please use the series of descriptive words listed below to indicate your intention to purchase customised footwear from [BRAND] in the next 12 months.

**PurchaseInt How likely are you to buy customised shoes from [BRAND]?**

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly unlikely</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highly likely</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**PurchaseInt How probable is it that you will purchase customised shoes from [BRAND]?**

<table>
<thead>
<tr>
<th>Probability</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly improbable</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Highly probable</td>
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<td></td>
</tr>
</tbody>
</table>

**PurchaseInt How certain it is you will purchase customised shoes from [BRAND]?**

<table>
<thead>
<tr>
<th>Certainty</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly uncertain</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Highly certain</td>
<td></td>
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</tr>
</tbody>
</table>

**PurchaseInt What chance is there that you will buy customised shoes from [BRAND]?**

<table>
<thead>
<tr>
<th>Chance</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>No chance at all</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Very good chance</td>
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</tbody>
</table>
Block 6: Demographics

In which of the age brackets do you fall?

- Under 18 (1)
- 18 – 24 years (2)
- 25 – 34 years (3)
- 35 – 44 years (4)
- 45 – 54 years (5)
- 55 – 64 years (6)
- 65 + years (7)
- I would prefer not to answer (8)

What is your annual household income before tax?

- less than $20,000 (1)
- $20,000 - $40,000 (2)
- $40,001 - $60,000 (3)
- $60,001 - $90,000 (4)
- $90,001 - $120,000 (5)
- more than $120,000 (6)
- I would prefer not to answer (7)
- I do not know (8)

What is your highest level of education?

- Did not complete high school (1)
- High school graduate (2)
- Vocational Qualification (eg. Certificate, Diploma, Advanced Diploma) (3)
- Associate Degree (4)
- Bachelor Degree (5)
- Postgraduate Degree (6)
- Doctorate (7)

This is now the end of the survey, your responses have been extremely valuable. Please feel free to leave feedback on the project.
A3. Co-authored Research Outputs


- Manuscript largely the same as chapter 2 of this thesis
- Jessica Pallant conducted the literature review and worked on the first manuscript for this paper. All authors were involved in subsequent versions of the paper in line with standard supervision expectations. All authors have agreed to the publication of this manuscript.


- Manuscript largely the same as chapter 3 of this thesis
- Jessica Pallant and Ingo Karpen were involved in the research design, with Sean Sands involved in the design of the second study in the manuscript. Jessica Pallant conducted the literature review, data preparation and analysis, and worked on the first manuscript for this paper. All authors were involved in subsequent versions of the paper in line with standard supervision expectations. All authors have agreed to the publication of this manuscript.

Pallant, J. L., Karpen, I. O., Sands, S., Who or what is more important in customisation? The mediating role of brand experience. In preparation for publication in *Journal of Brand Management*

- Manuscript largely the same as chapter 4 of this thesis
- Jessica Pallant, Ingo Karpen and Sean Sands were involved in the research design. Jessica Pallant conducted the literature review, data preparation and analysis, and worked on the first manuscript for this paper. All authors were involved in subsequent versions of the paper in line with standard supervision expectations. All authors have agreed to the publication of this manuscript.
A4. Conference Presentations


- Parts of this conference paper were used in chapter 3 of this thesis


- Parts of this conference paper were used in chapter 2 of this thesis


- Parts of this conference paper were used in chapter 2 of this thesis