
Role of Perceived Value and Brand Trust in Influencing the Customers' Purchase Intention towards Mass Customized Products: A Serial Mediation Model

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ABSTRACT

Customers co-create value when they participate in a mass customization process. Past studies have focused on the changing attitude of customers during the co-creation process because of their participation in the process. The unique contribution of this study is that it seeks to examine the relationships between perceived risk in opting to mass customize a product, the perceived value of mass customization, trust on the brand that mass customizes and the customers' intention to purchase mass customized product as a serial mediation model. The results indicate that when customers perceive high value in a mass customized product, irrespective of the risk they perceive and the brand from which it is offered, their purchase intention increases towards the customized product. However, when customers want to buy a product from a trusted brand, they would buy off-the-shelf products designed and offered in an 'as-is' condition rather than opting to mass customize it.

Key words: Mass Customization; Brand Trust; Perceived Value; Perceived Risk; Purchase Intention; Serial Mediation

1. Introduction

Mass customization has evolved in response to demand for high variety (Matzler, Stieger, & Füller, 2011). Mass customization (MC) is a strategy where customization of products is carried out in a mass production environment using flexible production technology (Barman & Canizares, 2015). From the consumer perspective, it means that consumers will be able to specify their individual requirement or preference with respect to a product and they will be able to get it at a relatively low increase in price and within a short duration from order.

Even though mass customization was predicted to bring in a paradigm shift in the way businesses compete (Pine, 1993), it has not really taken off as expected. There have been mixed results with many start-up's implementing mass customization being successful (Gandhi, Magar, & Roberts, 2014), while many big companies that implemented mass customization such as Levi Strauss, Mattel etc. reported failure (N. Franke & Piller, 2004). Even Dell, a company that is said to have brought a new phase in supply chain evolution through its mass customization (Shah, 2009), is moving away from it due to high cost. There could be a multitude of reasons for these failures. Järvi, Kähkönen, & Torvinen (2018) suggests that co-creation effort could result in co-destruction of value when there is no adequate information sharing, lack of trust and resistance of customers to change to a new way of buying.

We found that there were only a very few studies that have focused on mass customization strategy from the customer perspective. Among the very few studies, there were no studies that have looked at the impact of brand trust on consumer behavior in mass customization context. This study sought to bridge the existing research gap and investigated the influence of brand trust on the purchase intention of consumers towards customized products. The perceived risk of consumers in buying a mass customized product may have a negative influence on the perceived value of customization and hence reduce their purchase intention. But when the mass customized product is offered through a brand that the consumers trust, then the customer may feel that there is enhancement in the perceived value and reduction in perceived risk and hence, may increase his/her purchase intention towards mass customized products.

To address this research gap, a conceptual model has been developed to test the relationship between perceived risk, perceived value, brand trust and purchase intention. It was anticipated that the model would offer theoretical and practical implications in the marketing perspective of mass customization. The specific objectives of this research were to: (1) find the level of influence of perceived risk on perceived value of customized products; (2) examine the effect of perceived value on brand trust; and (3) assess the serial mediation effect of perceived value and brand trust on the relationship between perceived risk and purchase intention in mass customization context.

2. Conceptual Development

2.1. Mass Customization

Mass customization can be defined as offering goods and services that are almost exactly as per each individual customer's requirement at affordable price (Pine, 1993) in a large scale. The success of mass customization depends on whether customization can be achieved and the customer considers it to be of value (M. Tseng & Piller, 2003). In mass customization approach, the customers participate in the value creation processes of the firm (Piller, Moeslein, & Stotko, 2004) by choosing features of the product according to their individual requirements.

Many studies suggest that mass customization adds value to customers (Addis & Holbrook, 2001; Fogliatto, Da Silveira, & Borenstein, 2012;

Nikolaus Franke, Keinz, & Schreier, 2008; Merle, Chandon, & Roux, 2008). The question of whether such value increment apply for every product that customers use is yet to be resolved. Svensson & Jenson (2001) suggest that only for product with artistic attributes, there may be much value in customizing consumer goods (cited in Guilabert & Donthu, 2006). For those products for which customers see value in customization, the value increment could be as a result of better fit in terms of functionality, perceived uniqueness of the customized product, the hedonic value of enjoying the process of customizing the product and pride of owning product designed by oneself (Schreier, 2006).

But some researchers have cautioned about universal applicability of mass customization strategy (Anderson, 2011; Svensson & Barford, 2002). For a firm to utilize mass customization strategy effectively and achieve profitability, before implementing the strategy, it needs to satisfy criteria of market feasibility, production feasibility, and customer interface that seamlessly integrates customer in codesign process, (Salvador, Holan, Salvador, Holan, & Piller, 2009). Even while a firm satisfies all the three criteria, when they introduce the concept to a market dominated by standard products, the customers' readiness to accept such offer is questionable.

In their updated review paper on mass customization, Fogliatto et al. (2012) have found that most of the research in mass customization has been around economics of MC, MC enablers, MC success factors and interfaces between manufacturer and customer. They have suggested that MC value research as one promising area and have indicated that determining the level of variety required by customers has to be explored further. The customer may be the confining element in the closing leg of mass customization (M. Tseng & Piller, 2003). Not much research has been done to understand behavioral aspects of consumers with respect to mass customized products (Guilabert & Donthu, 2006). The limited amount of research on mass customization from marketing perspective exhibits the importance of studies that concentrate on customers' requirements and preferences towards mass customized products (Ferguson, Olewnik, Malegaonkar, Cormier, & Kansara, 2010).

It is found that there is very little research on the role of brand trust in mass customization (Piller, 2005). Even though there are a few papers that have studied the post-purchase behavior of customers in mass customization (Matzler et al., 2011; Yoo & Park, 2016), not much is known about how consumers' intent to purchase a mass customized product is formed when they are offered an opportunity to mass customize a product.

The conceptual framework developed in this study is based on the nature of mass customization and the relationships between perceived risk, perceived value, brand trust and purchase intention in different context as found in the extant literature. The unique contribution of this study is that we have established the serial mediation of the relationship between the constructs that specifically applies to consumer behavior in the pre-purchase scenario of mass customization. This is captured in the conceptual framework developed in Figure 1.

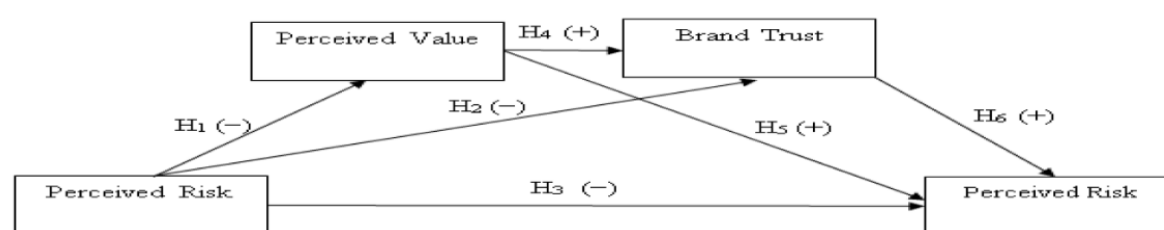


Figure 1. Conceptual framework of the study

2.2. Perceived Risk of buying a mass customized product and Perceived Value of mass customization

Consumers' perceived risk can be defined as their expectation of unforeseen negative outcome that may be associated with purchase of a product (Marakanon & Panjakajornsak, 2017). It is the consumers' subjective evaluation about the ramifications of making a wrong choice. When customers opt for mass customizing a product, they choose product features from a set of available options after assessing how the chosen features will affect functionality of the product. Whether the product that they get at the end of customization process will be what they expected and whether it will get social approval makes a customer more vulnerable to uncertainty as compared to choosing an off-the-shelf standard product (Broniarczyk and Griffin 2014; Dellaert & Stremersch 2005; Hildebrand et al. 2014 cited in de Bellis, Hildebrand, Ito, & Herrmann, 2015). This vulnerability may increase the perceived risk of buying a customized product.

The perceived value is the consumers' evaluation about the utility of the product on the whole based on the perception of what they get and what they give up (Zeithaml, 1988 cited in Sweeney & Soutar, 2001). It can be viewed as the difference between the perceived benefits that consumers get in buying the product and the perceived costs including both monetary payments and nonmonetary sacrifices that they incur in procuring the product (Yang & Peterson, 2004). The customer perceives value as a result of his or her interaction with a product and it is based on comparison with other alternatives available, the customer's personal preferences and the situational factors (Sánchez-Fernández & Iniesta-Bonillo, 2007) and the sacrifice they make in acquiring the product. From looking at perceived value as a trade-off between quality and price, the recent research has diverged its outlook and emphasizes the benefits that account for the cognitive and affective nature of value (Gallarza, Gil-Saura, & Holbrook, 2011).

Broekhuizen & Alsem (2002) have identified perceived customer value as an important factor that determines the success of mass customization. Customers perceive increased benefits when mass customization program operates with clear understanding of customers' choice. When customers buy a mass customized product, the value of the product is not just what the firm provides; it also includes what the customer co-creates by participating in the mass customization process (N. Franke & Piller, 2004; Laroche, Habibi, Richard, & Sankaranarayanan, 2012). As customers co-create value when they participate in the mass customization process, it increases their perceived value (Oh & Teo, 2010 cited in

Wang, Lee, & Wu, 2015). Schreier (2006) suggested that mass customization offers benefits of utility, uniqueness, fun of engaging in the process and pride in the resulting outcome.

Agarwal & Teas (2001) found risk to negatively influence value. In mass customization scenario, the information asymmetry between the customers and the seller (Mishra, Heide, & Cort, 1998) who place their orders before looking at the final product, toughens the assessment of the actual mass customization value. Hence in the context of assessing the value of mass customization offer, we hypothesize that the risk that the consumers perceive with respect to the offer would negatively influence their perceived value of the offer.

H1: Perceived risk of buying a mass customized product has a negative influence on perceived value of mass customized product.

2.3. Perceived Risk of buying a mass customized product and Trust towards the brand offering mass customization

Brand Trust can be defined as the sense of safety that consumers feel and confidence that they have in brand to fulfil their expectations (Delgado-Ballester & Luis Munuera-Alemán, 2001). Brand Trust develops as a result of scrupulous consideration about reliability, safety and honesty of the brand (A Chaudhuri, Holbrook, & Holbrook, 2001).

Under conditions of information asymmetry, seller is induced to act unfairly (Mishra et al., 1998), which in turn make the buyers unwilling to buy when they distrust the seller (Gregg & Walczak, 2008). In high risk situations, the customers would be more reluctant to trust the seller (Mitchell, 1999). When consumers perceive risk of negative outcome in a situation, then trust becomes a prime mover of their actions. When customers face uncertainty, information asymmetry and possibility of exploitation, brand trust provides comfort by bringing down the uncertainty and fear (Chiu, Huang, & Yen, 2010; Pavlou, Liang, & Xue, 2007, Gefen, Karahanna, & Straub, 2003; Doney & Cannon, 1997; Gefen, Karahanna, & Straub, 2003; Moorman, Zaltman, & Deshpande, 1992; cited in Laroche et al., 2012). Under conditions of low awareness or uncertainty about how others are going to act, trust becomes especially important (Gambetta, 1990 cited in D. J. Kim, Ferrin, & Rao, 2008). Prior studies have established a negative relationship between perceived risk and trust (Eid, 2011; Koehn, 2003). Since in the mass customization context, the customer has to depend on the actions of mass customizer to convert the design customizations that customer specifies into a product, we hypothesize that perceived risk would negatively influence brand trust.

H2: Perceived risk of buying a mass customized product has a negative influence on brand trust on the brand offering mass customized products

2.4 Perceived Risk of buying and Purchase Intention towards a mass customized product

Consumers' purchase intention developed as a result of their feelings, assessment and external factors is a crucial characteristic that predicts consumer behavior (Fishbein & Ajzen, 1975 cited in Yasin & Shamim, 2013). According to Theory of Planned Behavior (Ajzen, 1991), intention is an important predictor of actual behavior, provided that the individual has complete control over choice of behavior. Hence understanding customer's purchase intention towards mass customized product becomes important in understanding the market feasibility of mass customization strategy.

Consumers' evaluation of perceived risk would affect customers purchase decision and behavior (Arjun Chaudhuri, 1997), since it is a blend of negative outcome and uncertainty (Stone & Grønhaug, 1993). De Matos et al., 2007 have found that perceived risk negatively influences purchase intention of consumers, as they try to reduce uncertainty and possible adverse repercussion of buying a product (cited in Ting, Goh, & Mohd, 2016). The complexity, risk and uncertainty of the mass customization may discourage customers from opting for it. Hence, it is contended that perceived risk of buying a mass customized product negatively influences the purchase intention towards it.

H3: Perceived risk has a negative influence on purchase intention towards mass customized product

2.5 Perceived Value of mass customization and Trust towards the brand offering mass customization

In various exchange scenarios, trust is the key feature right from beginning a relationship to developing and nurturing it (Verhoef, Hans Franses, & Hoekstra, 2002). A consumer is said to have brand trust when they are willing to depend on brand to provide promised level of performance (A Chaudhuri et al., 2001). Services are intangible in nature which creates uncertainty and perceived risk when a customer buys and consumes it. Hence, in service exchanges, trust becomes important in deciding to purchase and consume a service (Berry, 1995). As mass customization is a service offered to customers, that converts the product according to the individual requirements of a customer, trust plays a crucial role.

For a consumer, a strong brand provides value by helping them cope with the perceived risk of buying and consuming a product (Delgado-Ballester, 2004). Value creation practices affect brand trust by bringing down uncertainty and information asymmetry and comforting the customers (Laroche et al., 2012). Even though trust is said to influence value (Sirdeshmukh, Singh, & Sabol, 2002), a more dominant view is that perceived value is an antecedent to brand trust (Harris & Goode, 2004). In this study, it is hence hypothesized that the perceived value of mass customization positively affects brand trust.

H4: Perceived value of mass customized product has a positive influence on brand trust on the brand offering mass customized products

2.6. Perceived Value of mass customization and Purchase Intention towards a mass customized product

Many studies on the perceived value view it as an antecedent to the purchase intention (Bolton & Drew, 1991; Grewal, Monroe, & Krishnan, 1998; Zeithaml, 1988). As consumers' assessment of a product is frequently based on incomplete information, perceived value may act as their cue

and hence would positively influence their purchase intention (Gounaris, Tzempelikos, & Chatipanagiotou, 2007). Perceived value is one of the most important factors that positively affects purchase intentions (Chang & Chen, 2008). When the perceived value is low, it may reduce the consumer's purchase intention (Sweeney & Soutar, 2001). Thus, the extant literature has established the positive impact of perceived value on consumers purchase intention. In the mass customization context, the customers perceived value is determined by both the product resulting at the end of the mass customization process as well as the value created due to their participation in the mass customization process. Hence, it is hypothesized that, in the pre-purchase context, the value of the mass customization offer that the customers perceive will positively influence their purchase intention.

H5: Perceived value has a positive influence on purchase intention towards mass customized product

2.7. Trust towards the brand offering mass customization and Purchase Intention towards a mass customized product

Trust is an expectation held by a person on the basis of his/ her belief about the honesty, benevolence and capability of another person in keeping their word or promise (P. Hart & Saunders, 1997). Consumer Trust is a crucial element that determines how consumers will behave in the long term (Lee, Park, & Han, 2011). Past research suggests that consumer trust influences their purchase intention (Harris & Goode, 2010). Based on their previous trust experience, a consumer would have an increased level of purchase intention (Heijden, Verhagen, & Creemers, 2003). It is hence hypothesized that, consumer trust on the brand that offers to mass customize the product has a positive influence on their purchase intention towards mass customized product.

H6: Trust on the mass customizing brand has a positive influence on purchase intention towards mass customized product

2.8. Mediating role of Perceived Value and Brand Trust in the relationship between Perceived Risk and Purchase Intention in Mass Customization

Pandey & Srivastava (2016) identified perceived value and trust as important antecedents of customer purchase intention. A strong brand which a consumer trusts facilitates the customer in envisaging and understanding the firm's offer and thereby provides value to customers (Berry, 2000) and face up to the perceived risk associated with buying and consuming a product.

The relationships between perceived risk, perceived value, brand trust and purchase intention are complex with different authors suggesting different relationship among them. In the context of online purchases, the Perceived Value has a positive relationship with purchase intention of customers and this relationship is mediated by trust (Kwok, Wong, & Lau, 2015). In the context of post-purchase intention to repeat purchase, the relationship between perceived value and intention was found to be mediated by satisfaction and trust in sequence (Miceli, Raimondo, & Farace, 2013). But in the pre-purchase context where satisfaction is not relevant, we can expect trust to mediate the relationship between value and intention. There are many such studies that suggest trust mediates the relation between value and intention (Harris & Goode, 2004; C. Kim, Zhao, & Yang, 2008). In the empirical research by Kim et al. (2008), they have found that the consumers' trust has a direct positive influence on purchase intention and an indirect influence on purchase intention where the perceived risk mediates the relationship and brings it down in the online purchase context. We have hence hypothesized the following:

H7: The relationship between Perceived risk of buying a mass customized product and the purchase intention towards mass customized product is mediated by perceived value and brand trust in serial.

3. Method

3.1. Participants and Procedure

This study was conducted to test the hypotheses in our conceptual framework by employing survey methodology using structured questionnaire. Convenience sampling was used for collecting data for the research. The respondents were qualified based on their willingness to buy at least one customized product. The study aimed to understand whether customers' preference towards customization varied based type of product, the study did not specify any product or brand to consumers. Instead, the respondents chose the product that they wanted to customize and the brand they believe would customize the product according to their requirements.

3.2 Instrument Development

We developed the questionnaire items based on the literature. The instruments used to operationalize the constructs in the research model were from extant literature adapted to make it suitable for context of our study

The perceived risk scale was adapted from the scale developed by Chen (2015) for measuring perceived risk of Internet shopping. Out of the 8 dimensions of financial risk, product performance risk, physical risk, psychological risk, social risk, time/ convenience risk, privacy risk and security risk, we have selected relevant dimensions of financial risk, performance risk, time risk, privacy risk and security risk, to suit the mass customization context. The Consumer -perceived value tool (CPVT) developed by Merle et al. (2010) for measuring perceived value of the mass customized product and mass customization experience has been adapted to suit the pre-purchase context of our study. The perceived value is a second order construct with the value of the resulting product and the value of participating in customization as higher order constructs with the dimensions utilitarian, uniqueness and self-expressive values and hedonic and creative achievement values respectively.

The brand trust scale with two dimensions of reliability and intentionality has been adapted from Delgado-Ballester et al. (2003). The four-item purchase intention scale has been adapted from the Chen (2015).

For measuring the four constructs in our research model, we used totally 25 items in the instrument. All the items were measured using a 7-

point Likert-type scale where the different opinions of respondents were indicated by the following: 1= Strongly Disagree, 2= Disagree, 3=Somewhat Disagree, 4= Neutral, 5=Somewhat Agree, 6=Agree and 7 = Strongly Agree.

4. Results

4.1. Participant Characteristics

The questionnaire was administered to a sample of 1052 consumers. The questionnaire was administered to a sample of 1052 consumers. After screening for willingness to customize at least one product and completeness, there were 584 usable responses with a response rate of 55.5%. The sample characteristics of age, gender and work experience are given in Table 1.

Table 1. Participant Characteristics

Characteristics	Frequency	(%)
Gender		
Male	380	65.1
Female	204	34.9
Age		
18	17	2.9
19	101	17.3
20	129	22.1
21	50	8.6
22	61	10.4
23	62	10.6
24	44	7.5
25	38	6.5
26	16	2.7
27 and above	66	11.3
Occupation Type		
Working	161	27.6
Student	423	72.4
Work Experience		
0 years	387	66.3
Less than 1 year	38	6.5
1- 2 years	50	8.6
2 – 3 years	32	5.5
3 – 4 years	16	2.7
4 – 5 years	10	1.7
5- 6 years	11	1.9
7 years and above	40	6.8

4.2. Measurement Model

We verified the factor structure of the constructs that we have used in this study using Exploratory Factor Analysis (EFA). Based on EFA, items with communalities less than 0.25, items with cross loadings and factor loading less than 0.3 have been deleted.

We performed Confirmatory Factor Analysis to establish validity of the measurement model and the individual constructs. All constructs except purchase intention have their individual Composite Reliability (CR) values greater than 0.7. The purchase intention construct has only two items and the CR value was 0.686. We consider this value as acceptable and ascertain the reliability of all constructs (see Table A.1.).

Convergent validity was checked using CR and Average Variance Explained (AVE). For the model used in this study, the CR for all the four constructs were greater than their respective AVE values and CR values greater than 0.7. Only for the perceived risk construct, the AVE Value was below 0.5 at 0.319. Since AVE was a more conservative measure of convergent validity, taking the suggestion of Dash & Malhotra (2016, p. 714), we concluded that the convergent validity was adequate based on the CR alone.

Discriminant validity was checked by comparing the squared correlations between all the four constructs and the average variance extracted

for each construct. Since the squared correlations between the constructs was lower than the average variance extracted, the discriminant validity of the measurement model was established. We have used Microsoft Excel based Validity Concerns Toolkit developed by Gaskin (2016) to estimate the discriminant validity statistics for the individual constructs.

We have used AMOS software to evaluate the fitness of the overall measurement model (see Figure A.1.). We used indices such as Comparative Fit Index (CFI), CMIN/df, SRMR, Root Mean Square Error of Approximation (RMSEA) and P close to assess the model fit as per the recommendation of Hu and Bentley (1999 cited in Gaskin, 2016). The CMIN/df at 2.54 was between the threshold values of 1 and 3, RMSEA at 0.051 was below the threshold value of 0.06, SRMR at 0.054 was below the threshold value of 0.08 and P-close at 0.29 was greater than 0.05. Even though CFI at 0.915 was not greater than 0.95, it can be considered acceptable. Based on these indices we deem the measurement model with the four constructs to be fit (see Table A.2.). All 27 measured items loaded significantly on their respective constructs (see Table A.3.)

Since we have used the same questionnaire for collecting data on both the dependent and independent variables, we suspected that there may be common method bias. We examined whether Common Method Bias (CMB) has crept in to our present study using CFA with common latent factor and the results indicated that there was common method bias. Hence, we had to retain the CFA with latent factor structure. To improve the ease of use, the data has been imputed with factor score estimates and used in further analysis.

4.3. Hypothesis testing

We found empirical support for the inter-construct relationships as hypothesized within the proposed conceptual model. This study looked into the four constructs of consumer's perceived risk, perceived value, brand trust and purchase intention in the context of buying a mass customized product. The consumer's perceived risk towards buying a mass customized product were envisaged to indirectly influence the purchase intention of customers through the serial mediators of perceived value and brand trust.

The model was evaluated based on the path coefficients (Beta weights). All the paths in the proposed model were found to be statistically significant with $p < 0.05$ for all the paths. The path coefficient of the relationship between perceived risk and perceived value was 0.1849 indicating a positive relationship between them. This was different from the hypothesized negative relationship and hence hypothesis H1 was not supported. For the relationship between perceived risk and brand trust, the path coefficient value was -0.1032 indicating a weak negative effect. The path coefficient was 0.5362 for the relationship between perceived value and brand trust indicating a strong positive effect. Between perceived value and purchase intention, the path coefficient was 0.9302 indicating strong positive relationship. The path coefficient of 0.2041 suggests a weak positive relationship between brand trust and purchase intention. Hence hypotheses H2, H4, H5, and H6 were supported by the empirical results. The hypothesis H3 was not supported as the results show positive relationship as opposed to the hypothesized negative relationship.

4.4 Mediation Analysis

The serial mediation analysis was carried out using the SPSS macro Process model 6 (Hayes, 2012), with the perceived value and brand trust as mediators. This procedure estimates the coefficients in the model using Ordinary Least Square Regression method. Bootstrapping was used to estimate the indirect effects based on 10000 resamples at 95% confidence interval. The output with the path coefficients is shown in Figure 2.

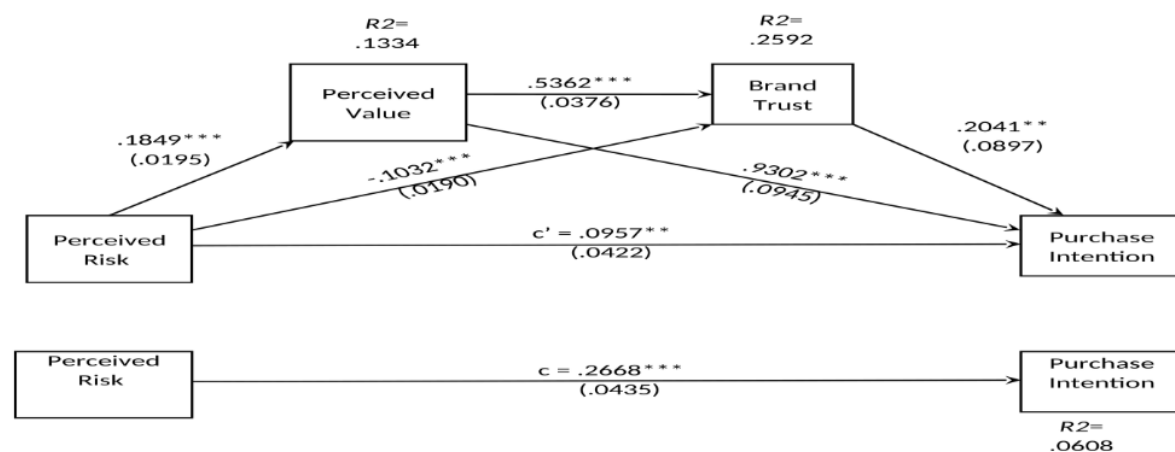


Figure 2. Serial Mediation Analysis about here

The Total effect c is 0.2668 with $p < .05$ as shown in Table 2., was statistically significant.

The direct effect of $c' = 0.0957$, $p < 0.05$ was statistically significant indicating a partial mediation effect. The direct effect results are shown in Table 3.

[Insert Table 3. Direct Effects about here]

For the three specific indirect effects, bootstrap confidence intervals do not contain zero indicating that all the three paths are significant as shown in Table 4.

[Insert Table 4. Indirect Effects about here]

Table 2. Total Effect

Independent Variables	Dependent Variables	
	β	SE
	Purchase Intention	

Intercept	2.0454***	.1498
Perceived Risk	.2668***	.0435
<i>R</i>	.2466	
<i>R</i> ²	.0608	
MSE	.6684	
<i>F</i>	37.6907***	
<i>df</i> ₁	1	
<i>df</i> ₂	582	

Note: * p<.05; **p<.01; ***p<.001

The indirect effect of perceived risk on purchase intention through perceived value only was 0.1711 with a 95% bootstrap confidence interval of 0.1091 to 0.2382. This value was greater than the direct effect value of 0.0957 which may be an indication that when customers perceive high value in customization it improves their purchase intention. The indirect effect of perceived risk on purchase intention through brand trust only was -0.0211 with a 95% bootstrap confidence interval of -0.0423 to -0.0029. The effect value was very low and the effect direction was negative. This could be because when customers think of buying a product from a trusted brand, their purchase intention towards buying a customized product was weighed as opposed to a standard branded product and hence rather than the thrill element of risk producing positive effect, the negative effects of risk could be playing a role.

Table 3. Direct Effects

Independent Variables	Dependent Variables					
	Perceived Value		Brand Trust		Purchase Intension	
	β	SE	β	SE	β	SE
Intercept	1.5681***	.0673	.7588***	.0849	.2602	.1958
Perceived Risk	.1849***	.0195	-.1032***	.0190	.0957**	.0422
Perceived Value			.5362***	.0376	.9302***	.0945
Brand Trust					.2041**	.0897
<i>R</i>	.3652		.5091		.5219	
<i>R</i> ²	.1334		.2592		.2724	
MSE	.1350		.1112		.5196	
<i>F</i>	89.5924***		101.6445***		72.3696***	
<i>df</i> ₁	1		2		3	
<i>df</i> ₂	582		581		580	

Note: * p<.05; **p<.01; ***p<.001

The indirect effect of perceived risk on purchase intention through both perceived value and brand trust as serial mediators was 0.0202 with a 95% bootstrap confidence interval of 0.0028 to 0.0028 was significant. But the effect value of 0.0202 was very low as opposed to direct effect of perceived risk or the mediation effect of perceived risk through perceived value only. This indicates that the purchase intention towards customized product was lower when mediated through perceived value and brand trust.

Table 4. Indirect Effects

Indirect effect of Perceived Risk on Purchase Intention	Effect	Bootstrap			Is the path Significant?
		SE	LLCI	ULCI	
Total	.1711	.0324	.1091	.2382	Yes
through Perceived Value only	.1720	.0293	.1174	.2334	Yes
through Brand Trust only	-.0211	.0099	-.0423	-.0029	Yes
through Perceived Value & Brand Trust in serial	.0202	.0093	.0028	.0399	Yes

Note: Number of bootstrap samples for bias corrected bootstrap confidence intervals: 10,000; Level of confidence for all confidence intervals in output: 95%

5. Discussion and Conclusion

5.1. Theoretical Implications

The relationship between perceived risk, perceived value and trust was one of the highly debatable relationships with different authors conceptualizing the relationship to be different and have shown empirical evidence for the relationship that they have considered. As opposed to the

hypothesized negative relationship between risk and value our results indicated a positive relationship. We found support for our results in an empirical study by Kwok & Wong (2015) who got similar positive relationship as opposed to their conceptualized negative relationship between perceived risk and purchase intention. Based on the suggestion of Muuss&Porton (1998), Kwok & Wong (2015) have explained the positive relationship of risk with purchase intention that risk may be important for individuals who believe that society will admire people who take risk.

From the results obtained, the perspective of risk, especially among students, seems to be different. The financial risk may be considered as positive, as in gambling when the stakes go high, the thrill of the game goes up. In service context, there are evidences for price being a surrogate for quality and hence increase in price resulting in increased value of service. Since mass customization was also a service, the cost increase may be viewed as indication of quality of outcome. We considered delay in getting the customized product and mass customizer refusing to offer the product customers after customer spent time in the co-design process to cause time risk for the customer. But if the customer expects to enjoy the process of participation in the co-design, they may not feel that time was lost even if they don't get the product and hence may not consider it as time risk. Hence, the dimensions of perceived risk those apply in the context of mass customization have to be further explored.

5.2. Practical Implications

The results of the study have many practical implications. If the customers are expecting to enjoy the participation in the process mass customization or the co-design process because of the thrill or adventure of creativity, then aside the product value, the firms should look at how to design the co-design process to add to the thrill and the features of this process have to be communicated to the customers. When customers opt to buy products from strong brands that they trust, they may prefer standard products over customized products offered by the brand. Also, one of the elements of risk that was considered in the study was the privacy risk related to product design of customer being shared with others which might threaten the uniqueness value that a customer gets out of buying a customized product. But it was possible that the customers viewed this aspect as positive and adding social value and pride of someone wanting their design.

5.3 Limitation and scope for future research

In this research, the respondents have been selected based on whether they were willing to customize and buy at least one product and hence the responses from those who don't want to customize have not been obtained. If data from those who don't want to customize had been collected, we could have understood which type of customer would opt or not opt for customizing and hence would have helped in deciding whether the segment that opts for customization was large enough to show promises for this strategy and whom to target with this strategy. Further research should explore to find out whether those who don't want to customize, stay away from it because of high perceived risk of customization. Among those who want to customize there may be different segments that choose customization for different reasons. Further research has to explore whether such segments exist and whether for these segments the importance of the different perceived value dimensions change. Research may be carried out to understand whether customers would opt to customize branded products through empirical studies with specific products and real brands.

5.4. Conclusions

Thus, we have studied the relationship between perceived risk, perceived value, brand trust and purchase intention. This research explored to find whether perceived value and brand trust will help to alleviate the perceived risk effect and motivate the customers towards purchasing the customized product. We found that the purchase intention is greatly influenced by the perceived value of customization. But when customers look for branded products they may prefer standard off the shelf product than a customized product. To understand product specific and situation specific variables that could affect the intention to purchase, further research was required.

Appendix A

Table A.1.

Reliability and validity for individual constructs

	CR	AVE	PR	PV	BT	PI
PR	0.788	0.319	0.565			
PV	0.852	0.658	0.545	0.811		
BT	0.750	0.601	0.299	0.680	0.775	
PI	0.686	0.522	0.306	0.451	0.340	0.723

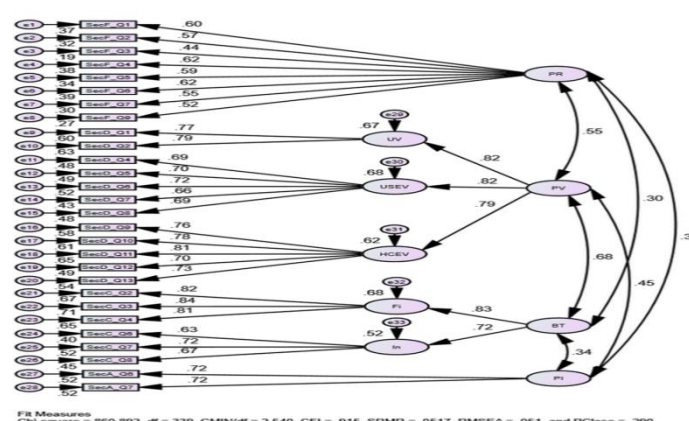


Figure A.1. Measurement Model

Table A.3.
Regression estimates of constructs items

Items	Constructs	Unstandardized Estimate	Standardized Estimates	S.E.	P
Utilitarian Value	PV	1	0.82		
Co-design outcome value	PV	0.956	0.825	0.082	***
Co-design process value	PV	1.028	0.788	0.085	***
Reliability	BT	1	0.825		
Intentionality	BT	0.653	0.722	0.08	***
When buying a customized product, it may cost higher due to hidden cost	PR	1	0.604		
When buying a customized product, it may cost higher due to hidden cost	PR	0.997	0.565	0.093	***
The customized product may not perform as expected	PR	0.787	0.44	0.09	***
Before placing the order, it is difficult to accurately judge product quality of a customized product	PR	1.014	0.618	0.089	***
Before placing the order, I do not have opportunities to touch/ handle a customized product	PR	1.05	0.586	0.096	***
I may have to wait for a long time for the delivery of the customized product	PR	1.072	0.621	0.094	***
There may be too many options to choose from making it a time-consuming process	PR	0.867	0.545	0.083	***
If I participate in customization process, my preference and purchase behavior may be analyzed	PR	0.749	0.516	0.075	***
After I customize, the product will be exactly what I want	UV	1	0.774		
The product I design will be closest to what I am looking for	UV	0.885	0.792	0.057	***
With the customized product, I will look different from everybody else	UniqV	1	0.695		
With such a customization program, I could design the product that no one else will have	UniqV	1.106	0.699	0.075	***
With the customized product, I will have my slight bit of differentiation compared to others	UniqV	0.958	0.722	0.063	***
I could create a product that is just like me	SEV	1.001	0.658	0.071	***
The customized product will reflect my image	SEV	0.998	0.69	0.068	***
It would be real fun to customize the product	HV	1	0.764		
I will really enjoy participating in the customization task	HV	0.967	0.78	0.051	***
Customizing the product would be a delightful activity	HV	0.954	0.809	0.049	***
When I design the customized product, I will enjoy a lot of autonomy in the creation of the design	CAV	0.835	0.7	0.05	***
Customizing the product will be an opportunity to show my creativity	CAV	0.866	0.733	0.049	***
It is a brand that lives up to my expectations	Reliability	1	0.816		
I have confidence in the brand	Reliability	0.931	0.843	0.044	***
The brand assures satisfaction	Reliability	0.818	0.808	0.04	***
The brand would be truthful and open in dealing with me.	Intentionality	1	0.632		
I could rely on the brand to solve the problem, if any problem is found with the product	Intentionality	1.261	0.721	0.107	***
The brand would go to any extent to satisfy me	Intentionality	1.238	0.67	0.108	***
It is very likely that I would consider purchasing a customized product in the next three months	PI	1	0.722		
It is very likely that I would consider purchasing a customized product in the next year	PI	1.015	0.723	0.134	***

*** $p < 0.001$

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