

# The Role of Mass Customization Product in Enhancing Consumer's Intention towards Loyalty through Perceived Product Design Efforts

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Mass customization (MC) majorly emphasizes on effective customized product from the manufacturers. Researchers examined the relation between operational performance and customization such as quality, cost and delivery times. Though, efficient customization to evaluate the value of mass customization is not sufficient. This study focuses on the balancing mechanisms to create value as well as the benefits supposed by the consumers. There are identified two global mechanisms of perceived value (PV) about the MC: Mass customization product (MCP) has three dimensions as well as Mass-customization Experience (MCE) has two dimensions. This study examines the dimensions of customers' perceived value obtained and to measure the associations between Consumer value (CV) and loyalty intention. Through online 129 questionnaire distributed to the customers in Iraq. PLS was used to analyze the data. The findings exposed the hedonic, creative achievement, utilitarian, and social value influenced on the effort of perceived product design with the customization, by increasing loyalty intention. The relationships between consumer customized value and the effort of perceived product design enhance the consumer's intention towards loyalty. These outcomes have empirical suggestions to develop efficient customization programs for brand in the industry.

**Key words:** *Mass Customized Product Value, Product Design, Loyalty Intention, Customer.*

## Introduction

Pine, Pine, and Pine (1993) defined that mass customization (MC) is the process of development, the process of production, the process of marketing and the delivery of a tailored service or product to offer numerous customizing decisions, allowing an individual to recognize precisely what they required at a suitable price. Further, MC is a valuable marketing way to retain and acquire consumers and forming long lasting relationships with these consumers. By means of consumers as well as retailers both make new products; customers obtain an opportunity to procure more satisfactory products, and their inclination to pay extra costs. Furthermore, when consumers involve in the program of MC, vendors attain information about diverse levels of the purchasers' preferences.

Anderson, Knight, Pookulangara, and Josiam (2014) discussed that retailers through internet technology to assemble and exchange significant information more efficiently and rapidly than ever before, therefore to reduce lead time and also to facilitate more design differences and flexibility during production. Customization could be a strategic means that delivers additional benefits to customers, customization is accepted in numerous manufacturing, such as apparel shoes (Nike), (Brooks Brothers), computers (Dell), handbags (Longchamp), cars (Toyota), home furnishing and (Pottery Barn). Luxury brands were slow to launch e-commerce, however, Park and Yoo (2018) argued that providing customization programs with the help of online to offer tailored design and attach with their consumers. However, Franke and Piller (2004) stated that, some programs with these advantages were run successfully, though others have to handled serious problems (Levi Strauss). Simonson (2005) discussed that the reasons for such discrepancy recommended by the researchers comprise consumers' widespread contribution, their preference to make defaulting choice and their incapability to identify the presence of the program of MC. The influence of customization on customer responses has unreliable results. For instance, in the study of Franke and Schreier (2008) examined that consumers' willingness to pay at a higher level for a customized product despite a standard product. Though, for a customized version, consumers' willingness to pay was not higher comparing a regular newspaper (Schoder, Sick, Putzke, & Kaplan, 2006). Franke, Keinz, and Steger (2009) argued that to have the long-lasting achievement of MC, needed to provide augmented benefits for consumers could become a competitive edge, and there is an essential to make analysis on consumers' benefit.

Franke et al. (2009) stated that researchers and practitioners have made consideration to form MC for online retailing to enhance customer value. Further, Franke et al. (2009) argued that effects of characteristics like toolkits, design selections on consumer responses and fast value feedback of supply chain strategy. Though, few studies have made on consumer benefits in MC in Clothing (Ko, Phau, & Aiello, 2016).

So, this study examines the advantages of mass customization product (MCP) have positive effect on customers' intention towards loyalty through the effort of perceived product design.

### ***Mass Customization***

In marketing, the Customer-Perceived Value (CPV) is one of the main factors to enhance loyalty. Woodruff (1997) discussed that how to make and offer higher consumer value, a major concern for the marketing executives. Zeithaml (1988) argued that the customer's general value of the product utility should match between what is given and received. Woodruff (1997) claimed that the previous studies of marketing relate this thought from satisfaction. Satisfaction is analyzed between expectations as well as the performance of a product. Tu, Vonderembse, and Ragu-Nathan (2001) measured consumer's value attained by customer's satisfaction with the products. In spite of its valued contribution, this assessment does not directly measure through gain value from the individual's perception. Further, consumers' values could directly be measured by the customers rather than by the manufacturers.

However, the value derives from perceived costs as well as benefits to the customer. Therefore, simply dropping the costs of customization product to deliver customer value is not sufficient. The proposed CPV is a measurement made directly to analyze value from the customers. Its emphases on the value between the customers perceived benefits by customizing a product. Schreier (2006) recognized two global foundations of value in MC, co design process and the experience of MC.

During the procedure of elicitation for the system of MC, consumers have the value from the usage of the product (Kahn 1998). The three perceived benefits of MCP are recognized uniqueness values, utilitarian values and the self-expressiveness values. Dellaert and Stremersch (2005) stated that MC emphasized on the utilitarian value related to at what level of a MCP matches consumers' preference. Schreier (2006) explained that utilitarian value fits in both functional and aesthetic based on the category of the product. There is a positive association between customer's perceived benefit and customer's willingness to pay for the MC (Franke & Schreier, 2008). Though, the consumer value is not distributed entirely from "product fit." Schreier (2006) examined that the next value is the uniqueness value. (Snyder 1992) further explained that the MCP from the consumers' perspective can enhance "uniqueness attributes". The need to gain an exclusive product is the motivations behind involvement in the program of MC (Fiore, Lee, & Kunz, 2004). A positive effect of the perception of the uniqueness of the usefulness of consumers comes from MCP. Sirgy (1982) mentioned that Value of self-expressiveness derives from the self-concept theory and links to the benefit of consumers' own product reflecting one's own image, irrespective of the consumer's needs to state his identity. MC has an opportunity to customers' products that

show their personalities because they may select from numerous options. The value of self-expressiveness varies from uniqueness value with the axes: self-oriented vs. oriented character (Sánchez-Fernández, Iniesta-Bonillo, & Holbrook, 2009). The customer is not displaying variances but pursues to possess a product matching his self-image.

Salvador, De Holan, and Piller (2009) argued that to achieve in MC, firms should support customers to identify their own answers. Main approach to support customers fix their answers is to deliver them a tailored toolkit (Salvador et al., 2009). MC value is about the communication between the product design and individual using this precise technique of the preference revelation. Further, Piller, Moeslein, and Stotko (2004) discussed that this process is measured a source of extra cost related with MC. Requesting the customer to recognize the characteristics of a product, changing might make strong negative effect (Dellaert & Stremersch, 2005). However, Franke and Piller (2004) argued that the co-design process might have intrinsic value for the customer. The two benefits of this development are recognized: hedonic as well as the value of creative achievement. Hedonic value means the entertainment would come from the experience. Fiore et al. (2004) reinforced the association between need to have a stimulating experience as well as the willingness to use the program of MC. Hedonic value effects the willingness to pay a best for the value of MC (Franke & Schreier, 2006). Schreier (2006) stated that the value of creative achievement means the “pride of authorship”. When customers are provided with autonomy to tailor their products, they perceive a sense of creating something, although the co design toolkit could keep limited potential. Franke and Piller (2003) explained that the manager of Dell Computers clarified that customers’ satisfaction partially derives from their pride to tailor their computers.

The previous studies propose that MC could not be making sufficient value for the consumer; however, the trade-off between MC and operational performance has been determined. The focus should be to the perceived augmented benefits of the MC offer. Further, for the utilitarian value, customer may engage in making product design by applying the specific technique given by the customization program. Franke and Piller (2003) found that the better forming co-design procedure may make enjoyment or pleasure that satisfies hedonic as well as experiential needs. The procedure of making design their product value addition like fulfilment of curiosity as well as novelty (Schreier, 2006), Additional, Williams (2004) found that study of do-it-yourself products makes the consumers engaged in do-it-yourself products perceived it as to be rewarding, fun and enjoyable. Customers who have experienced making design their own brand perceived augmented benefits (Lamberton & Rose, 2012).

### ***Process of Product Design Efforts***

A learning association between customers and products Peppers and Rogers (1997) described it as follows: First, process of communication with feedback allows the organization about

the customers' preference based on the individualized. Second, companies make the design of the product as the recognized specification by the consumers to match their preferences. Third, by making a appropriate system of customers' feedback are engaged more with the management to product design matching their own preferences by the distribution of their opinions, consuming their time energy and time. Fourth making other competitors of the companies these consumers have to again teach about specification and features of the product of the organization what they learnt to this organization.

Dellaert and Stremersch (2005) stated that the Perception of procedure effort as the organization subjective perception and psychological power invested to design the product. Customers' efforts are needed to design their own products needing their active energy and time giving could make the customers dissatisfied (Huffman & Kahn, 1998). Bettman, Johnson, and Payne (1990) argued that the reason is the numerous cognitive steps to make the decision while deciding among the alternatives choices enhances the difficulty of making decision. As a result need extra efforts from the consumer' energy and time and could give dissatisfaction (Johnson & Payne, 1985).

### ***Mass Customization and Loyalty Intention***

Kivetz (2003), Loyal consumers would suppose many benefits from a retailer than regular customers. Loyal customers would give respond differently to a company's promotions, to be more probable to ponder the more benefits rather than a first time customers (Reczek, Haws, & Summers, 2014). The association between perceived value and attachment show that first-time customer vs. repeat customer's experience moderates the effect of perceived value on satisfaction in the context of tourism (Yoo & Park, 2016). For repeat customers, affective value is more significant rather than functional value; while functional value is more significant rather than affective value for the first-time customers.

### ***Hypothesis***

**H1:** There is a positive relationship between perceived product design efforts (PPED) and consumer's loyalty intention

**H2:** There is a positive relationship between Mass customization Value (MCV) and consumer's loyalty intention

**H3:** There is a mediating effect of perceived product design efforts (PPED) between Mass customization Value (MCV) and consumer's loyalty intention

## **Methodology**

The population of the current study was taken from Baghdad, Iraq. The focus of this study was how manufacturers can efficiently deliver the value of customization and customer perceived benefits of customized product. Simple Random sampling technique was used. According to Cooper, Schindler, and Sun (2006), “a sample frame is the listing of all the population elements from which the sample would be drawn upon.” Through online 129 questionnaire were distributed among the customer. Though, 113 questionnaires were returned and seemed to be suitable to make further data analysis.

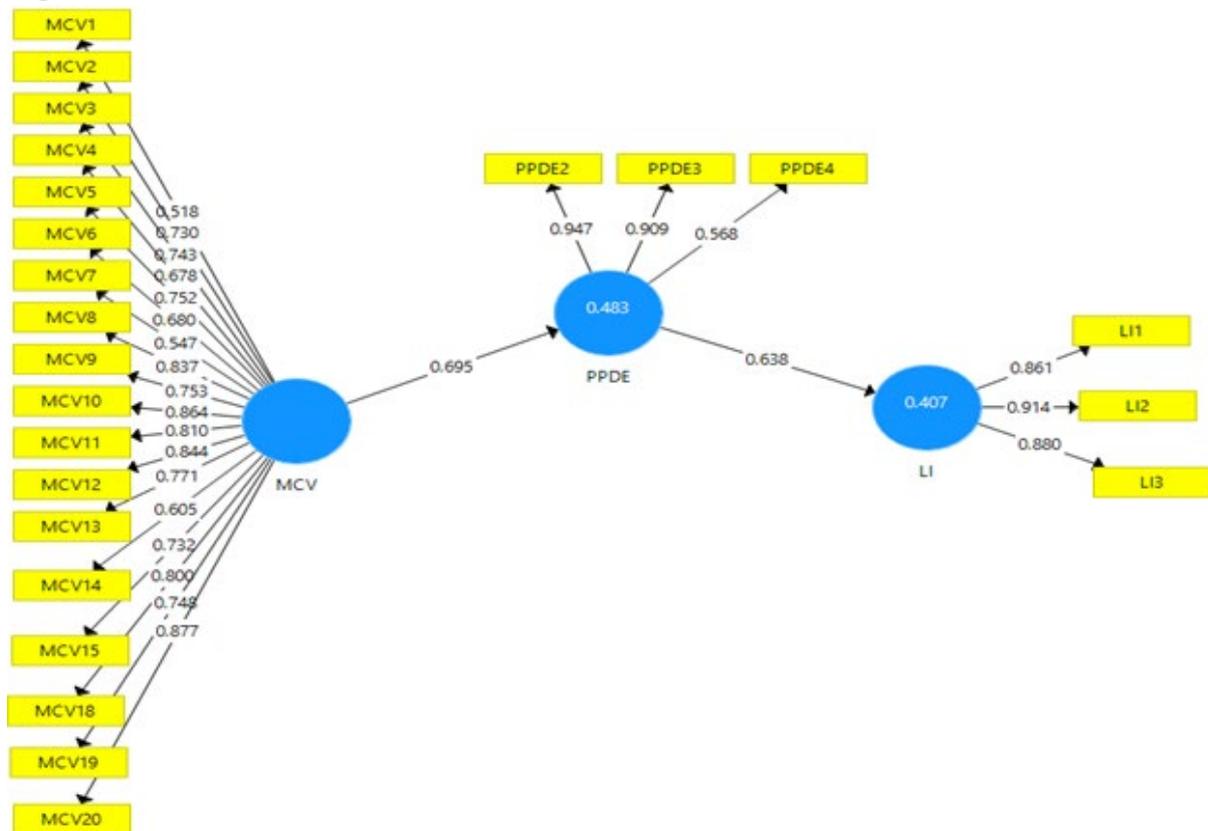
### ***Measurement of Scale***

The scale of perceived value of the mass customized product and co-design process value was developed by (Merle, Chandon, Roux, & Alizon, 2010). The mass customized product value, Utilitarian value measured by five items, uniqueness value has five (5) items, self-expression value has four (4) items. Further, Co-design process value, hedonic value has six (6) items and creative achieve value has four (4) items. Perceived product design efforts (PPED) has four (4) Items were made by three experts, Loyalty intentions has three (3) items developed by (Kwon & Lennon, 2009).

### ***Partial Least Square (PLS)***

The SEM, PLS version 3.0 was applied to analyze the data. PLS is suitable for confirmatory research. “The PLS algorithm allows each indicator to vary in how much it contributes to the composite score of the latent variable.”

**Figure 1.** Measurement Model Assessment



Discriminant Validity shown in table 4.2 achieved through square root of AVE and cross loadings. Further, Cross loadings have been measured.

**Table 4.1:** Cronbach's Alpha

Constructs	Cronbach's Alpha	Composite Reliability	AVE
PPDE	0.773	0.86	0.682
LI	0.863	0.916	0.783
MCV	0.952	0.957	0.555

**Table 4.2:** Discriminat Validity

Constructs	PPDE	LI	MCV
PPDE	0.826		
LI	0.638	0.885	
MCV	0.695	0.844	0.745

### Direct Effect

The direct effect among exogenous constructs and endogenous constructs, path coefficient and t-value has been drawn with the help of PLS bootstrapping approach. The path coefficients have been parallel to the regression analysis (Henseler, Ringle, & Sarstedt, 2015). Values of t are measured to approve the level of significance of the constructs. Furthermore, 1.96 threshold value of t was regarded better. Though, bootstrapping procedure could be attained by using 129 responses to measure the t-values and  $\beta$ -values acceptance or rejection of hypotheses. In table 4.3, t-values and  $\beta$ -values of EPA  $\rightarrow$  LI is 0.638 and MCV  $\rightarrow$  EPA is 0.695. Furthermore, table 4.3 shown that all hypotheses were supported through t-value  $>$  1.96 and p value  $<$  0.05, all were accepted.

**Table 4.3:** Direct Relationship

Relationship	Original Sample (O)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
EPA $\rightarrow$ LI	0.638	0.109	5.846	0
MCV $\rightarrow$ PPDE	0.695	0.095	7.289	0

Bootstrapping with the help of PLS in the present study was to measure the indirect effects of each constructs. Similarly, previous studies shown that —bootstrapping have been a non-parametric re-sampling process by getting more responsiveness. Since, this approach is measured as most prospective process to analyze of mediation (Zhao et al., 2010). Additionally, PLS SEM with bootstrapping for mediation was best for small sample. Though, the procedure is regarded better to follow to measure the effect of mediation and the current study also followed this process. So, the mediating effect of the effort of perceived product design between mass customized value and customers' loyalty intention were to be examined. It shows that value of t is greater than 1.96 which is 4.282, beta value is 0.443 with level of significant is 0.00.

**Table 4.4:** Indirect Relationship

Relationship	Original Sample (O)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
MCV $\rightarrow$ PPDE $\rightarrow$ LI	0.443	0.104	4.282	0

### Variance Explained (R<sup>2</sup>)

The R-square (R<sup>2</sup>) value has shown the result with the help of PLS technique in table 4.5 which shown that by measuring all the constructs have the inclination of explaining variance in endogenous construct the effort of perceived product design has 47% and Loyalty intention has 39%.

**Table 4.5: R Square**

Construct	R Square	R Square Adjusted
PPDE	0.483	0.469
LI	0.407	0.391

In table 4.6, the quality of model was measured through construct cross-validated redundancy called predictive relevance. To achieve a certain quality of model, the value of Q2 should be > zero Chin (1998). Table 4.6 has the values 0.264 and 0.256 >0.

**Table 4.6: Construct Cross-Validated Redundancy**

Constructs	SSO	SSE	Q <sup>2</sup> (=1-SSE/SSO)
PPDE	117	86.099	0.264
LI	117	87.046	0.256
MCV	702	702	

## Findings and Discussion

The objective of the study focused on the mediating effect of the effort of perceived product design between mass customized product value and customers' loyalty intention.

Statistical analysis has given the result and shown the effort of perceived product design and customer's loyalty intention with the value of t is 5.846 ( $t > 1.96$ ),  $\beta$ -value is 0.638. The values and its result accepted H1. Further, it shown that the effort of perceived product design and customer's loyalty intention have positive and significant relationship. Thus, the Increase in the effort of perceived product design would also enhance the level of customer's loyalty intention. 1<sup>st</sup> objective of the study was achieved. Similarly, mass customized product value and customers' loyalty intention with value of t is 7.289 ( $t > 1.96$ ) and  $\beta$ -value is 0.695 and its result accepted H2. So, it displayed that mass customized product value and customers' loyalty intention has significant and positive association. So, the increase in mass customized product value would enhance the customers' loyalty intention. 2<sup>nd</sup> objective of the study was also achieved.

Statistical result support the mediating effect of the effort of perceived product design between mass customized product value and customers' loyalty intention as the value of t is 4.282 ( $t > 1.96$ ) with value of  $\beta$  is 0.443. So, the mediating effect of the effort of perceived product design between mass customized product value and customers' loyalty intention with value of t is 4.282 with  $\beta$ -value 0.443 which supported H3. Thus, the mediating effect of the effort of perceived product design between mass customized product value and customers' loyalty intention is significant. The findings revealed that "hedonic, utilitarian, creative



achievement, and social value influenced the effort of perceived product design with the customization,” which in turn created the loyalty intention.

### **Limitations and Recommendations**

In the present study, sample size is small. However, in future study, sample size could be increased. Another essential research will be to measure which kinds of consumers are probable to be affected by which bases of value. Fiore et al. (2004) explained that It appears to be very reasonable that the study findings are weakened by personality variables such as the level of optimum stimulation or essential for uniqueness. Furthermore, situational constructs such as product involvement and also expertise experience of self-design could play a significant role (Dellaert & Stremersch, 2005). Clearly, it would be essential to make a future research on the significant phenomenon of customers vigorously by making their products, its characteristic designs of value creation, and its values for businesses.. The mix methodology could be used to analyze the data to obtain more ideas, views of customers in the future study, Further, this research measured the mediating effect of the effort of perceived product design between MCP value and customers’ loyalty intention. Though, factors affect MC, such as cost, complexity and time of delivery. Future study needs to examine how these factors effect customers’ perspective on MC.

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