textiles

MDPI

Article

Design Elements That Increase the Willingness to Pay for Denim Fabric Products

Ryoga Miyauchi [1], Xiaoxiao Zhou [1] and Yuki Inoue [2,*]

[1] Graduate School of Humanities and Social Sciences, Hiroshima University, Hiroshima 730-0053, Japan
[2] Faculty of Economics, Hosei University, Tokyo 194-0298, Japan
* Correspondence: yuki.inoue@hosei.ac.jp; Tel.: +81-42-783-2552

Abstract: This study analyzed what design elements are attractive to consumers of denim fabric products. A questionnaire survey was used to investigate the brands and design elements that consumers prefer. Subsequently, the degree to which participating consumers liked the five design elements (traditional, transformative, pattern, multi-material, and decorative designs), fast fashion brands, and luxury brands were used as explanatory variables to determine the consumers' willingness to pay. A multiple regression analysis was performed on these variables. The results indicated that consumers who preferred traditional and transformative designs showed a positive effect on their willingness to pay for denim fabric products. Therefore, these elements could be attractive design elements that may command a high price point in new product planning proposals. Moreover, depending on the type of brand preferred by consumers, the impact of design elements on their purchase intention of denim fabric products has different consequences. This study analyzes the design elements preferred by consumers and contributes to the creation of design proposals by designers and apparel firms.

Keywords: denim fabric products; product design; luxury brand; fast fashion brand; fashion design

Citation: Miyauchi, R.; Zhou, X.; Inoue, Y. Design Elements That Increase the Willingness to Pay for Denim Fabric Products. *Textiles* **2023**, *3*, 11–25. https://doi.org/10.3390/textiles3010002

Academic Editor: Laurent Dufossé

Received: 22 November 2022
Revised: 28 December 2022
Accepted: 2 January 2023
Published: 5 January 2023

1. Introduction

Textiles are constantly evolving, with new types of textiles being developed recently [1–3]. The materials used in such textiles have also evolved [4], but traditional fabrics, such as denim, still endure. In the denim fabric product market, design is constantly evolving. Denim fabric products that were originally worn as work clothes have now been transformed into fashion products worn by a variety of consumers [5]. The determinants of consumers' intention to purchase denim fabric products are diversifying [6]. In addition to the quality aspects that consumers value [7], the aspects of design and aesthetic appeal are also complex [6]. The innovative and stylish features of denim fabric products underscore the importance of creative excellence in their development [8], and the competitiveness in this market has steadily increased over the last 50 years [5].

The denim fabric product market has established itself as a fashion product market, emphasizing the importance of creativity, although appropriate design elements for consumers are unclear [8]. Design is defined by three dimensions: product aesthetics, functionality, and symbolism [9,10]. Consumers are increasingly making brand choices based on products' aesthetic and symbolic value [11]. Functionality is also important in design [12]. Based on these three dimensions, we selected five elements: (1) traditional design (functionality), (2) transformative design (aesthetic), (3) pattern design (aesthetic), (4) multi-material design (aesthetic), and (5) decorative design (symbolism).

In addition to these five design elements (traditional, transformative, pattern, multi-material, and decorative designs), we focused on two brand types: fast fashion and luxury brands which have contrasting price ranges. We aimed to verify the influence of these five design elements and two brand types on consumers' willingness to pay (WTP) for denim products. WTP is effective in measuring the direct product value of the consumer

market [13]. We attempted to answer the following research question: "What kind of product design is attractive to what kind of consumers in the denim fabric product market, or can be attractive?" Thus, the purpose of this study is to clarify to consumers the design elements suitable for denim fabric products.

The novelty of this study lies in its examination of the impact of design elements on consumers' WTP. Regarding consumers' WTP, Rahman's [14] study examined the impact of garment fit, body image, and appropriateness on consumers' purchase desire for jeans. In addition, Card et al. [15] examined the impact of laundering on the physical properties of denim to facilitate the design of denim garments to meet consumer needs. However, the impact of design elements on purchase desire has not been studied. Thus, this study fills a gap in research on the impact of design elements on consumers' purchase desires.

1.1. Hypothesis

We hypothesized the impact of consumers' preference for the five elements on their WTP for denim fabric products. In addition, consumers' favorite brands may affect their purchasing intention. Thus, we hypothesized the impact of consumers' preference for fast fashion or luxury brands and the five design elements mentioned above on their WTP for denim fabric products.

1.1.1. Traditional Design

Traditional design refers to maintaining the original design. Since the latter half of the 20th century, we have witnessed a vintage boom of denim fabric products [16]. Other factors in these vintage trends are changing values and the inclusion of vintage inspiration used by fashion designers in current designs [17]. These factors allow consumers to purchase the original reproductions of denim fabric products [5]. Thus, denim fabric products may influence consumers' purchasing intentions by adopting traditional design elements. Therefore, we proposed the following hypothesis:

H1a: *Consumers who prefer traditional design elements show high WTP for denim fabric products.*

1.1.2. Transformative Design

Transformative design refers to an unconventional design structure. "Transformative" refers to changing the shape or structure to something else without losing the substance [18]. Traditionally, denim's toughness and comfort were incompatible, but breakthrough innovations, such as washing and developing technology for commercialization, have managed to change the equation [15,19]. In addition, designers of luxury fashion brands have made developments to bring out the aesthetic appeal of unique fabrics [5]. Therefore, denim fabric products may influence consumers' purchasing intentions by adopting transformative design elements. Therefore, we proposed the following hypothesis:

H1b: *Consumers who prefer transformative design elements show high WTP for denim fabric products.*

1.1.3. Pattern Design

Pattern design refers to the application of a pattern. The use of certain patterns improves the appearance of a product for its aesthetic appeal [20,21]. With the improvement in aesthetic appeal and the icon of a brand, pattern design has come to be evaluated as a major factor influencing the purchasing motivation of current consumers [21]. Therefore, the adoption of pattern design in denim fabric products may influence consumers' purchasing intentions. Therefore, we proposed the following hypothesis:

H1c: *Consumers who prefer pattern design elements show high WTP for denim fabric products.*

1.1.4. Multi-Material Design

Multi-material design refers to the combination of various materials. The multi-material design of denim fabric products incorporates fabrics other than denim. In the fashion context, multi-material is positioned as a means to develop new designs [22]. Denim fabric products maintain their original uniqueness and expand the range of fashion designs by embodying combinations with new fabrics [23]. The adoption of a multi-material design in denim fabric products may influence consumers' purchasing intentions. Therefore, we proposed the following hypothesis:

H1d: *Consumers who prefer multi-material design elements show high WTP for denim fabric products.*

1.1.5. Decorative Design

Decorative design refers to adding decorations, such as embroidery and prints. Consumers' self-expression and personal fashion appeal became more important as designers began creating denim fabric products as fashion products [14]. Therefore, consumers add decorative design elements to their denim fabric products that are also worn as a form of self-expression. As a result, decorative design has come to be positioned by various designers as a means to expand and disrupt the market. Denim fabric products have been developed by consumers and designers through the addition of decorative designs. Therefore, the adoption of decorative designs in denim fabric products may enhance the product value to consumers. Therefore, we proposed the following hypothesis:

H1e: *Consumers who prefer decorative design elements show high WTP for denim fabric products.*

1.1.6. Fast Fashion Brands

Fast fashion brands capture the latest consumer trends by combining rapid response production capabilities with enhanced product design capabilities [24]. Trendy design, consistent quality, quick delivery, and fast arrival to the market have been made possible by the following features: low cost due to mass production, an increased number of fashion seasons, and structural changes [25]. The design, abundant choices, and affordability offered by fast fashion brands are factors that drive consumers to buy their products [26]. Hence, fast fashion brands propose attractive products to consumers. Moreover, their products are reasonably priced. When purchasing denim fabric products, consumers' preferences for fast fashion brands may affect their WTP. Therefore, the following hypotheses were proposed:

H2a: *Consumers who prefer traditional design elements and fast fashion brands decrease their WTP for denim fabric products.*

H2b: *Consumers who prefer transformative design elements and fast fashion brands decrease their WTP for denim fabric products.*

H2c: *Consumers who prefer pattern design elements and fast fashion brands decrease their WTP for denim fabric products.*

H2d: *Consumers who prefer multi-material design elements and fast fashion brands decrease their WTP for denim fabric products.*

H2e: *Consumers who prefer decorative design elements and fast fashion brands decrease their WTP for denim fabric products.*

1.1.7. Luxury Brands

Luxury brands are the opposite of fast fashion brands in terms of their price, creative design, and product value. Luxury brands propose designer-driven designs, unlike the

consumer-driven designs of fast fashion brands [27]. Luxury brands propose to consumers the styles of modernity, eccentricity, luxury, elitism, and strength through their unique design, variety of materials, and advanced technology [28]. Such styles proposed by luxury brands motivate consumers to purchase their products [29,30]. In addition, luxury brands have a significant impact on consumers' WTP in terms of practical fashion lifestyle and perceived practical value [31]. Hence, by proposing original and creative designs from designers to consumers at a high price point, luxury fashion brands will increase consumers' WTP. When purchasing denim fabric products, consumers' preferences for luxury brands may affect their WTP. Therefore, the following hypotheses were proposed:

H3a: *Consumers who prefer traditional design elements and luxury brands increase their WTP for denim fabric products.*

H3b: *Consumers who prefer transformative design elements and luxury brands increase their WTP for denim fabric products.*

H3c: *Consumers who prefer pattern design elements and luxury brands increase their WTP for denim fabric products.*

H3d: *Consumers who prefer multi-material design elements and luxury brands increase their WTP for denim fabric products*.

H3e: *Consumers who prefer decorative design elements and luxury brands increase their WTP for denim fabric products.*

2. Materials and Methods

In this study, we conducted a multiple regression analysis using the dataset of an original questionnaire survey. The dependent variable is the extent of WTP for denim fabric products. The explanatory variables are the design elements and brands preferred by consumers and their interaction terms. The analytical model is shown in Figure 1.

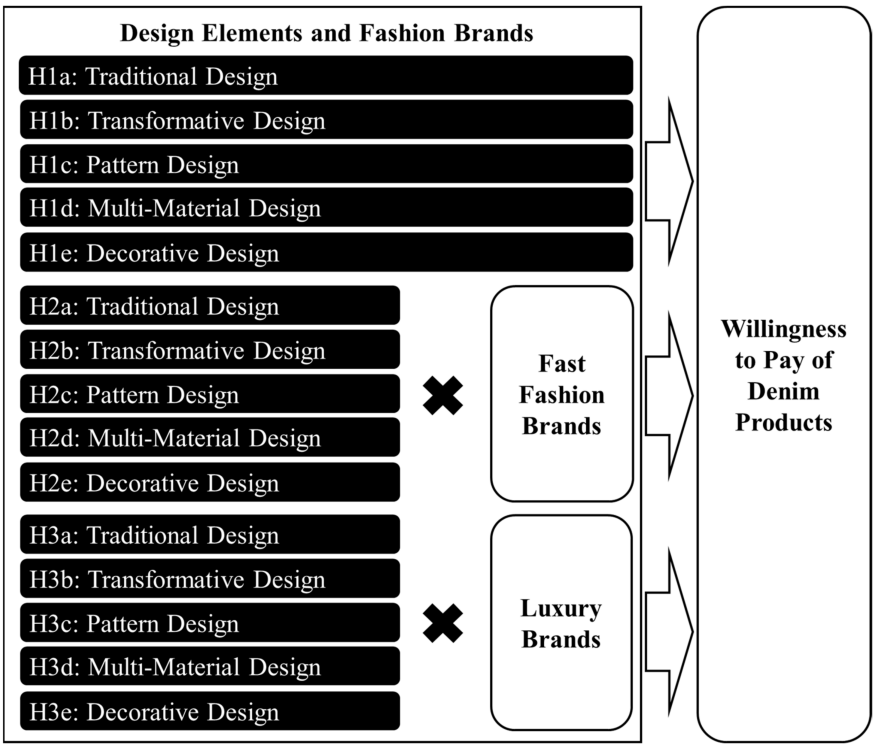

Figure 1. Analytical Model.

2.1. Questionnaire Summary

In this study, we conducted an online questionnaire survey. After creating the questionnaire, we asked Macromill, one of Japan's largest survey companies, to collect responses to the questionnaire. The sampling was random, with one condition that participants had to be 20 years or older. A screening process was developed, as described in Section 2.2. This survey was conducted over a period of four days, starting from 16 November 2021. While there are studies in the fashion industry that are specific to one country, or even one city [32], we selected the Japanese market for this study. In addition to consumer product value, technological innovations related to denim fabric products have become highly valued in Japan. Furthermore, various products have become increasingly widespread. Thus, we believe that the Japanese market is an appropriate research context.

Cochran's sample size formula was used to calculate the minimum sample data to ensure the reliability of the results [33]. The calculations were performed as follows: Based on Japan's Bureau of Statistics, the estimated number of people over 20 years of age in Japan in November 2021 was approximately 104.75 million [34]. Thereafter, reliability was set at 95%, the allowable error was set to be 5%, and the response rate was set to be 50%. Calculating all these factors suggested that a sample size of 384 people was required. To ensure sufficient sample size, the desired sample size was set to be 800, which was approximately twice as large as 384. Finally, 1107 participant responses were collected. Therefore, the sample size of this study was sufficient.

2.2. Questionnaire Design

2.2.1. Sampling

As this study is an analysis of the denim fabric product market, the desired respondents should be consumers who prefer buying denim fabric products. Therefore, the following screening questions were developed. For the first screening question, we asked about the total amount of money spent annually on clothing to confirm the degree of fashion consciousness in everyday life. To target fashion-loving consumers, we recruited consumers who chose "50,000 JPY" or more, which is higher than the average annual consumption value of clothing in Japan at 46,709 JPY (2019) [35]. The second screening question concerned how much consumers liked denim fabric products. Using a 7-point Likert scale, ranging from "extremely dislike" to "extremely like," we selected consumers who chose "moderately like," "like," and "extremely like." In the third screening question, we asked how strongly consumers' fashion consciousness was. Using a 7-point Likert scale, ranging from "extremely weak" to " extremely strong," we selected consumers who chose "moderately strong," "strong," and "extremely strong." Only respondents who passed the three screening questions were allowed to proceed with the questionnaire.

From the 1107 respondents, 407 (36.8%) were males and 700 (63.2%) were females. The respondents were divided into three categories according to their annual household income. A total of 427 respondents (38.6% of all participating consumers) had an annual income of less than 6 million JPY. A total of 393 respondents (35.5%) had an annual income of 6 million JPY or more but less than 12 million JPY, 126 (11.3%) respondents had an annual income of 12 million JPY or more, and 161 respondents (14.5%) did not answer the income question. The missing data were not a problem as annual income data were not used in the analysis. In addition, 508 participants were single (45.9%) and 599 were married (54.1%). This information was collected from the registration information in Macromill's questionnaire monitor.

After removing ineligible responses, the number of eligible respondents was reduced from 1107 to 1077. Therefore, the number of respondents whose responses were used in this study was 1077. The excluded conditions were as follows:

- (As shown in the Section on Survey Contents) The data on the purchase price per denim fabric product, as the dependent variable, were collected as a multiple -choice question. Respondents who selected "more," which could not be quantified, were excluded. Additionally, after confirming the distribution of responses after the loga-

rithmic conversion, we confirmed that the distribution was biased. Since this bias in the distribution would cause a bias in the statistical results, respondents who chose higher than 100,000 JPY were excluded as outliers.

- A Likert scale and binary variables were used in the questionnaire. Respondents who answered with the same number to all questionnaire items were excluded.
- No age limit was set for the respondents in the questionnaire; however, on one questionnaire, the participant's age was stated as 99 years old. We assumed that leaving such response in the dataset would impact the reliability of the answers. Therefore, we set the limit as 65 years for the respondents because it is the general retirement age in Japan. Respondents above this age were excluded.

2.2.2. Major Survey Contents

The respondents who passed the screening were asked the following questions: First, regarding the WTP for denim fabric products, the respondents were asked the average amount of money spent per piece of denim fabric product. The WTP for denim fabric products was obtained as the average purchase price per denim fabric product. The choices were as follows:

1. 1000; 2. 2000; 3. 3000; 4. 5000; 5. 7000; 6. 10,000; 7. 20,000; 8. 30,000; 9. 50,000; 10. 100,000; 11. 200,000; 12. 500,000; 13. 1,000,000; 14. More.

Subsequently, a multiple-choice question on what brand or maker the respondents would like to purchase products that use denim fabric from was asked. Specific brand names were presented along with the brand type to determine whether consumers preferred each brand type. We asked about each brand type with two choices, "agree (like)" or "disagree (dislike) ". In addition to fast fashion brands and luxury brands, we asked questions on other brand types which were treated as the control variables in the analysis. Table 1 shows the questions regarding preference on the two types of fashion brands (fast fashion and luxury brands).

Table 1. Questions Regarding Preference on Fashion Brands.

Fast Fashion Brands	You like fast fashion brands (H&M, ZARA, UNIQLO, etc.) and often buy their products.
Luxury Brands	You like luxury brands (Gucci, Louis Vuitton, etc.) and often buy their products.

Finally, six questions were asked regarding clothing design preferences (the five design elements, and not limited to denim fabric products). Questions pertaining to all five design elements were answered using a five-point Likert scale (not applicable at all, not very applicable, neither, a little applicable, or very applicable). The specific contents of the questions are listed in Table 2.

Table 2. Questions Regarding the Five Design Elements.

Questionnaire Items	**Questionnaire Contents**
Traditional 1	You often buy products that maintain the old design.
Traditional 2	You like to buy replicas and reprinted brands.
Traditional 3	You share reprinted or old designs with others.
Traditional 4	You feel an attraction to products that the old design is maintained.
Traditional 5	You are someone who has knowledge of the old design.
Traditional 6	You like to search old designs in magazines and books.
Transformative 1	You prefer products that are not the same shape as others.
Transformative 2	You often buy unusual products or products that have never been seen before.
Transformative 3	You like eccentric products rather than simple ones.
Transformative 4	You find seemingly unusual products attractive.
Transformative 5	You prefer to wear something that does not match with that worn by others.
Transformative 6	When you see a seemingly unusual design in a collection or a magazine, you find it attractive.

Table 2. *Cont.*

Questionnaire Items	Questionnaire Contents
Pattern 1	You usually use patterned clothes.
Pattern 2	You like to buy products that have ethnic patterns.
Pattern 3	You prefer patterned products over simple products.
Pattern 4	You find products with original patterns and unique patterns attractive.
Pattern 5	You feel that the products that have patterns in every detail are highly valued.
Pattern 6	You like to put patterns in daily coordination.
Multi-Material 1	You like products that use multiple fabrics in one product.
Multi-Material 2	You often buy products with multiple different colors depending on the fabric.
Multi-Material 3	You like products that look different depending on the angle.
Multi-Material 4	You find a design created via a combination of fabrics attractive.
Multi-Material 5	You pay attention to the products that combine different fabrics.
Multi-Material 6	Many products that you chose for everyday wear use multiple fabrics.
Decorative 1	You like clothes with print designs and often buy them.
Decorative 2	You often wear products with an emblem.
Decorative 3	You prefer products with decorations (prints, patches, etc.) over simple designs.
Decorative 4	You often buy products that show the brand logo.
Decorative 5	You like to observe the decoration of clothing.
Decorative 6	The clothes you wear are often decorated.

2.3. Statistical Analysis

2.3.1. Dependent Variable

The dependent variable used was the average purchase price of denim fabric products, which was collected as a multiple-choice question, as described in the Section above. However, because the distribution did not have a bell shape, a natural logarithm conversion was used in the analysis following the correction of the distribution.

2.3.2. Explanatory Variables

Based on the factor analysis, we extracted the factors related to the degree to which the consumers liked the five design elements. The results are shown in Table 3. The average variance extracted via factor analysis confirmed the values of 0.5 or higher for the five design elements [36]. Regarding composite reliability, values of 0.6 or higher were confirmed for the five design elements [37]. The Cronbach's α was also confirmed to be 0.7 or higher for the five design elements [38]. Therefore, all the factors were reliable.

Table 3. Factor Analysis Results.

Questionnaire Items	Traditional Design	Transformative Design	Pattern Design	Multi-Material Design	Decorative Design
Traditional 1	0.76				
Traditional 2	0.86				
Traditional 3	0.83				
Traditional 4	0.80				
Traditional 5	0.82				
Traditional 6	0.85				
Transformative 1		0.73			
Transformative 2		0.84			
Transformative 3		0.78			
Transformative 4		0.86			
Transformative 5		0.78			
Transformative 6		0.79			

Table 3. *Cont.*

Questionnaire Items	Traditional Design	Transformative Design	Pattern Design	Multi-Material Design	Decorative Design
Pattern 1			0.66		
Pattern 2			0.65		
Pattern 3			0.82		
Pattern 4			0.85		
Pattern 5			0.79		
Pattern 6			0.83		
Multi-Material 1				0.84	
Multi-Material 2				0.81	
Multi-Material 3				0.81	
Multi-Material 4				0.82	
Multi-Material 5				0.87	
Multi-Material 6				0.83	
Decorative 1					0.78
Decorative 2					0.79
Decorative 3					0.87
Decorative 4					0.65
Decorative 5					0.61
Decorative 6					0.82
Average Variance Extracted	0.67	0.64	0.59	0.69	0.58
Composite Reliability	0.93	0.91	0.90	0.93	0.89
Cronbach's α	0.93	0.91	0.89	0.93	0.89

For H2a to H3e, the degree of preference for the five design elements and the interaction term for the consumers who preferred fast fashion and luxury brands were used as the explanatory variables.

2.3.3. Control Variables

In addition to the explanatory variables, control variables that might contribute to the dependent variable were selected.

Selected Shop Brands: The analytical results could be distorted if consumers were more likely to prefer selected shop brands. Therefore, we created a dummy variable related to selected shop brands with a binary response: 1 if respondents liked selected shop brands and 0 if they did not.

Casual Brands: The analytical results could be distorted if consumers were more likely to prefer casual brands. Therefore, we created a dummy variable related to casual brands with a binary response: 1 if respondents liked casual brands and 0 if they did not.

Gender: Gender carries different values for denim fabric products, which could affect the results of the analysis. We created a binary gender variable with 1 for men and 0 for women.

Age: Age has different values for denim fabric products, which could affect the results of the analysis. Age was calculated and answered numerically. After conversion to a natural logarithm, it was used as a control variable.

Annual Purchase of Clothes: The annual purchase of clothes by consumers might distort the results of the analysis. Therefore, we created a variable related to annual purchase of clothes, and the respondents answered the question numerically. After conversion to a natural logarithm, this was used as a control variable.

2.3.4. Empirical Specifications

In this study, multiple regression analysis was conducted. The analytical model is shown in Figure 1. In the interaction related to fast fashion and luxury brands, the problem of multicollinearity appeared when the analysis was conducted in parallel. Therefore, the

analysis was conducted separately. In separate models, the mean variance inflation factor (VIF) in H1a to H1e was 1.36, with the maximum VIF being 1.85; the mean VIF in H2a to H2e was 2.40, with the maximum VIF being 4.51; and the mean VIF in H3a to H3e was 1.73, with the maximum VIF being 2.99 (the VIF empirical rule indicate that VIF values above 5 or 10 are multicollinear) [39]. Therefore, we confirmed that there was no multicollinearity problem. In addition, the Breusch–Pagan test was conducted to confirm the presence or absence of heterogeneity. All models had *p*-values of less than 0.05. Therefore, the Newey–West test was performed and modified.

3. Results

Table 4 shows the results of the analysis of Hypotheses H1a to H1e. Table 5 shows the analytical results, including the interaction terms between the variables related to the five design elements and that of fast fashion brands, in accordance with H2a to H2e. Table 6 shows the analytical results, including the interaction terms between the variables related to the five design elements and that of luxury brands, in accordance with H3a to H3e.

Table 4. Results of the Basic Analysis without Interaction Terms.

	Full Model		Stepwise	
	Coefficient	**Standard Error**	**Coefficient**	**Standard Error**
Traditional Design	0.07 **	0.02	0.07 **	0.02
Transformative Design	0.05 *	0.03	0.06 *	0.02
Pattern Design	−0.04 †	0.03	−0.05 *	0.02
Multi-Material Design	0.02	0.03		
Decorative Design	−0.03	0.03		
Gender	0.20 **	0.04	0.20 **	0.04
Age	0.00	0.06		
Annual Purchase of Clothes	0.30 **	0.03	0.30 **	0.03
Fast Fashion Brands	−0.42 **	0.04	−0.40 **	0.04
Selected Shop Brands	0.22 **	0.04	0.23 **	0.04
Casual Brands	0.02	0.04		
Luxury Brands	0.29 **	0.07	0.29 **	0.09
Constant	5.68 **	0.40	5.67 **	0.33
Adjusted R-squared	0.32		0.33	

** $p < 0.01$, * $p < 0.05$, † $p < 0.1$.

Table 5. Results of the Analysis with the Interaction Terms of Fast Fashion.

	Full Model		Stepwise	
	Coefficient	**Standard Error**	**Coefficient**	**Standard Error**
Traditional Design	0.11 **	0.03	0.12 **	0.04
Traditional Design × Fast Fashion Brands	−0.07 †	0.04	−0.08 *	0.04
Transformative Design	0.07 †	0.04	0.06 *	0.02
Transformative Design × Fast Fashion Brands	−0.03	0.05		
Pattern Design	−0.07	0.05	−0.04	0.03
Pattern Design × Fast Fashion Brands	0.04	0.05		
Multi-Material Design	0.05	0.05		
Multi-Material Design × Fast Fashion Brands	−0.05	0.06		
Decorative Design	−0.09 *	0.04	−0.08 *	0.04
Decorative Design × Fast Fashion Brands	0.11 *	0.05	0.10 *	0.04
Gender	0.20 **	0.04	0.20 **	0.04
Age	0.00	0.06		
Annual Purchase of Clothes	0.29 **	0.03	0.30 **	0.03
Fast Fashion Brands	−0.41 **	0.04	−0.41 **	0.04
Selected Shop Brands	0.23 **	0.04	0.23 **	0.04
Casual Brands	0.01	0.04		
Luxury Brands	0.29 **	0.07	0.30 **	0.07
Constant	5.66 **	0.40	5.65 **	0.33
Adjusted R-squared	0.33		0.33	

** $p < 0.01$, * $p < 0.05$, † $p < 0.10$.

Table 6. Results of the Analysis with the Interaction Terms of Luxury Brands.

	Full Model		Stepwise	
	Coefficient	**Standard Error**	**Coefficient**	**Standard Error**
Traditional Design	0.09 **	0.02	0.09 **	0.02
Traditional Design × Luxury Brands	−0.37 **	0.09	−0.34 **	0.08
Transformative Design	0.05 †	0.03	0.05 †	0.02
Transformative Design × Luxury Brands	0.22 †	0.12	0.27 **	0.10
Pattern Design	−0.05 †	0.03	−0.05 *	0.02
Pattern Design × Luxury Brands	0.10	0.12		
Multi-Material Design	0.02	0.03		
Multi-Material Design × Luxury Brands	0.00	0.11		
Decorative Design	−0.03	0.03		
Decorative Design × Luxury Brands	−0.02	0.10		
Gender	0.20 **	0.04	0.19 **	0.04
Age	0.00	0.06		
Annual Purchase of Clothes	0.29 **	0.03	0.29 **	0.03
Fast Fashion Brands	−0.41 **	0.04	−0.40 **	0.04
Selected Shop Brands	0.23 **	0.04	0.23 **	0.04
Casual Brands	0.03	0.04		
Luxury Brands	0.41 **	0.09	0.40 **	0.08
Constant	5.73 **	0.39	5.70 **	0.32
Adjusted R-squared	0.33		0.34	

** $p < 0.01$, * $p < 0.05$, † $p < 0.10$.

3.1. Results of the Basic Analysis without Interaction

Table 4 shows the analytical results for H1a to H1e. The stepwise determination coefficient was 0.33. Consequently, significant positive effects were confirmed for the two variables of traditional design ($p < 0.01$) and transformative design ($p < 0.05$). Therefore, H1a and H1b were supported. H1c was not supported because pattern design ($p < 0.05$) was confirmed to have a significant negative effect. Multi-material and decorative designs were removed as non-significant variables. Thus, H1d and H1e were not supported.

3.2. Results of the Analysis with the Interaction Term of Fast Fashion

Table 5 presents the analytical results for H2a to H2e. The coefficient of determination for the stepwise method was 0.33. H2a was supported because the interaction term between traditional design and fast fashion brands ($p < 0.05$) was confirmed to have a significant negative effect. Other hypotheses (H2b, H2c, H2d, and H2e) were not supported.

3.3. Results of the Analysis with the Interaction Term of Luxury Brands

Table 6 presents the analysis results for H3a to H3e. The determination coefficient for the stepwise method was 0.34. The interaction term between transformative design and luxury brands ($p < 0.01$) confirmed a significant positive effect. Consequently, H3b was supported. Other hypotheses (H3a, H3c, H3d, and H3e) were not supported.

4. Discussion

In this study, we suggested that the individuality and characteristics of each brand might affect the design elements. We analyzed two brand categories and set the interaction terms. Based on the basic analysis shown in Table 4, we compared the analytical results of the interaction terms for each brand. In addition, we considered the impact of preferred design elements on consumers. Finally, we interpreted the results of the hypotheses.

4.1. Discussion of the Basic Analysis

In the basic analysis (Table 4), traditional and transformative designs were confirmed to have significant positive effects. However, pattern design showed a significant negative

effect. Denim fabric products are transformed into something of value in the market by designers who understand and interpret products related to tradition [5]. When it comes to denim fabric products, paying attention to history and tradition is necessary, even when devising a new design. Consumers who prefer traditional design have a high WTP for denim fabric products. Traditional design may contribute to the development of effective design elements for new product planning proposals.

The innovative features of transformative design depend on a well-formed silhouette. Hence, this does not become an obstacle for denim fabric, which is regarded as attractive. Design elements are valued because they provide consumers with attractive product value [8,40,41]. However, denim fabric, which is attractive for its originality, may be hindered by "color," "processing," and "decoration." Accordingly, consumers who prefer transformative design have a high WTP for denim fabric products. Thus, designers can propose attractive products by including innovative designs in new product planning.

Denim fabric products have a wide range of designs in the fabric itself [8]. Therefore, the direction in which the original fabric design improves the appearance of the product without applying any additional design has been considered. Pattern design aims to improve the attractiveness of a product by adding decoration to the fabric [21]. However, as mentioned, denim fabric products depend on the attractiveness of the fabric because of its aesthetic appeal. Fabric processing can bring out denim's decadence and "atmosphere", improving the design. Hence, a preference for pattern design has a negative impact on consumers' WTP for denim fabric products.

4.2. Discussion of the Analysis with Fast Fashion Brands

The two variables that provided significant results in the analysis of the interaction term of fast fashion brands were traditional and decorative designs.

Consumers who prefer traditional design demonstrate a negative effect on their WTP for denim fabric products when they prefer fast fashion brands. The price range of a traditional design element is high because the design fully utilizes the advanced technology required by consumers [16]. Traditional design is a source of new insights on fashion today [42,43], and fashion-loving consumers also influence the visual perception of these designs [21,44]. Thus, consumers who prefer fast fashion brands may be aware of superficial functional design; however, they do not have an attractive perception of the high quality required for traditional design elements.

Consumers who prefer fast fashion brands and decorative design show a positive effect on their WTP for denim fabric products. Consumers can quickly recognize the value of new design elements proposed by fast fashion brands [45]. In addition, they can purchase products at an affordable price [45]. This may be due to the fact that young consumers, who have a relatively low WTP, tend to prefer decorative design, which follows the trend. Therefore, decorative denim fabric products proposed by fast fashion brands, which can be purchased at an affordable price, may be effective as a means to increase their WTP. Fast fashion brands also recognize trends and continuously respond to consumer demand [46]. Therefore, a decorative design for denim fabric products could increase consumers' WTP by reflecting current fashion design preferred by consumers.

4.3. Discussion of the Analysis with Luxury Brands

The two variables that provided significant results in the analysis of the interaction term of luxury brands were traditional and transformative designs.

Consumers who prefer traditional design and luxury brands show a negative effect on their WTP for denim fabric products. The role of creativity in the luxury brand industry is to explore the product designs that disrupt existing value over time [47,48]. Consumers who prefer luxury brands are attracted to the creativity of designers, influencing their willingness to buy denim fabric products [32]. Traditional design tends to demand high-quality and faithful reproductions that consumers demand in contrast to the creative design of luxury brands [5,16]. Consumers who prefer luxury brands may discover the attractive

value of creative and new products and choose to purchase them. Therefore, traditional design may differ from the needs of consumers who prefer luxury brands, which deal with attractive products driven by designers.

Consumers who prefer transformative design and luxury brands have more WTP for denim fabric products than those who do not. The transformative design element is evaluated as an element that increases the WTP for denim fabric products. However, it could increase the WTP for denim fabric products when targeting consumers who prefer luxury brands. Transformative design is a means of creative design invention, adding "new" value to products [18]. Consumers are influenced by the visual appeal to the shape of a new form of fashion devised by luxury brands [41,49]. Therefore, transformative design, as devised by designers of denim fabric products, could provide attractive value to consumers. Regarding luxury brands, a transformative design element is important to increase the WTP for denim fabric products.

5. Conclusions

Several studies have examined how to increase customers' purchasing intentions of denim products [14,15]. The novelty of this study lies in its examination of the impact of design elements on consumers' WTP for denim fashion products. This study fills a gap in research on the impact of the design elements of fashion products on consumers' WTP. This study targets the denim fabric market and confirms that consumers who prefer traditional and transformative designs positively show a high WTP for denim fabric products. Therefore, these elements may be attractive design elements that can be highly priced in new product planning proposals.

We also analyzed how the WTP for denim fabric products is affected by the preference for fast fashion brands and luxury brands. Consumers who prefer fast fashion brands demonstrate a negative effect on their WTP for denim fabric products if they prefer traditional designs. However, if they prefer a decorative design, it has a positive effect on their WTP. Consumers who prefer luxury brands show a negative effect on their WTP for denim fabric products if they prefer traditional designs. However, if they prefer a transformative design, it has a more positive effect on their WTP. Thus, it is possible to increase consumers' WTP for denim fabric products by appropriately judging the characteristics preferred by consumers.

5.1. Theorical Implications

Consumers' own self-expression and personal fashion appeal are emphasized in denim fabric products [8,50–52]. In addition, as the determinants of consumers' intention to purchase denim jeans diversify, design items have also become complex [6]. In this study, we examined the design elements that consumers like, analyzed what kind of denim fabric products would be attractive, and contributed to research on product designs for denim fabric products. In addition, consumer interests could be related to the choice of brand category, and the contribution to purchase motivation depends on the characteristics of fashion brands that consumers like.

5.2. Practical Implications

Consumers who are targeted by the denim fabric product market and prefer traditional and transformative designs could show a high WTP for denim fabric products. Therefore, these elements may be attractive design elements that can be highly priced in new product planning proposals. Consumers who prefer pattern design may have a lower WTP for denim fabric products. The results of this study suggest that designers can propose attractive denim fabric products that are highly priced by incorporating traditional and transformative designs. However, with regard to low-priced brands, such as fast fashion brands—which appeal to consumer needs—and high-priced brands, such as luxury brands—where designers devise new designs—traditional design could not influence consumers' WTP. Transformative design can lead to a high WTP among consumers who are

visually attracted to the creation of new designs, such as luxury brand designs. Decorative design could contribute to the WTP for denim fabric products by devising designs that appeal to the needs of consumers.

5.3. Limitations and Future Research

This study has some limitations. First, not all apparel products might have similar results, as we only analyzed the denim fabric product market. Therefore, different suggestions may be confirmed through a market analysis of different products.

Second, the questionnaire data for this study were obtained from the Japanese market. Although there are previous studies in the fashion industry that are specific to one country, or even one city [16,32], we must note the limitation in the acquired results from the data sample. Similar to the cultural differences among countries, consumers' preferences for design elements in fashion products could be different. Therefore, different findings and implications could be obtained if future studies conduct further investigations in other countries.

Third, other design elements in the denim fabric market could be suggested. Since the theory of design is extremely broad, it is possible to investigate new design innovations by exploring possible design elements other than those addressed in this study.

Finally, this study focused on two styles of brands: fast fashion and luxury brands. Since there are brands other than fast fashion and luxury brands that handle denim fabric products, conducting a survey that includes other brand categories could be made available.

Author Contributions: Conceptualization, R.M., X.Z. and Y.I.; methodology, R.M. and Y.I.; software, R.M.; validation, R.M.; formal analysis, R.M. and Y.I.; investigation, R.M. and Y.I.; resources, R.M. and Y.I.; data curation, R.M.; writing—original draft preparation, R.M., X.Z. and Y.I.; writing—review and editing, R.M., X.Z. and Y.I.; visualization, R.M., X.Z. and Y.I.; supervision, Y.I.; project administration, Y.I.; funding acquisition, Y.I. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study are available from the corresponding author upon request.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Júnior, H.L.O.; Neves, R.M.; Monticeli, F.M.; Dall Agnol, L. Smart Fabric Textiles: Recent Advances and Challenges. *Textiles* **2022**, *2*, 582–605. [CrossRef]
2. Tabassum, M.; Zia, Q.; Zhou, Y.; Wang, Y.; Reece, M.J.; Su, L. A Review of Recent Developments in Smart Textiles Based on Perovskite Materials. *Textiles* **2022**, *2*, 447–463. [CrossRef]
3. Krifa, M. Electrically conductive textile materials—Application in flexible sensors and antennas. *Textiles* **2021**, *1*, 239–257. [CrossRef]
4. Su, Y.; Li, W.; Cheng, X.; Zhou, Y.; Yang, S.; Zhang, X.; Chen, C.; Yang, T.; Pan, H.; Xie, G.; et al. High-performance piezoelectric composites via β phase programming. *Nat. Commun.* **2022**, *13*, 1–12. [CrossRef]
5. Fujioka, R.; Wuds, B. *Competitiveness of the Japanese Denim and Jeans Industry: The Cases of Kaihara and Japan Blue, 1970–2015*; European Fashion: Manchester, UK, 2020.
6. Rahman, O. Understanding Consumer's Perceptions and Buying Behaviors: Implications for Denim Jeans Design. *Wilson Coll. Text.* **2011**, *7*, 1–16.
7. Seninde, D.R.; Chambers IV, E.; Chambers, D.H.; Chambers, V.E. Development of a Consumer-Based Quality Scale for Artisan Textiles: A Study with Scarves/Shawls. *Textiles* **2021**, *1*, 483–503. [CrossRef]
8. Su, J.; Tong, X. Brand Personality, Consumer Satisfaction, and Loyalty: A Perspective from Denim Jeans Brands. *Fam. Consum. Sci.* **2016**, *44*, 427–446. [CrossRef]
9. Candi, M.; Haeran, J.; Suzanne, M. and Mayoor, M. Consumer responses to functional, aesthetic and symbolic product design in online reviews. *J. Bus. Res.* **2017**, *81*, 31–39. [CrossRef]

10. Homburg, C.; Martin, S. and Christina, K. New product design: Concept, measurement, and consequences. *J. Mark.* **2015**, *79*, 41–56. [CrossRef]
11. Simonson, A.; Schmitt, B.H. *Marketing Aesthetics: The Strategic Management of Brands, Identity, and Image*; Simon & Schuster: New York, NY, USA, 1997.
12. Papanek, V.J. *The Green Imperative: Natural Design for the Real World*; Thames and Hudson: New York, NY, USA, 1995.
13. Shogren, J.F.; Shin, S.Y.; Hayes, D.J.; Kliebenstein, J.B. Resolving Differences in Willingness to Pay and Willingness to Accept. *Am. Econ. Rev.* **1994**, *84*, 255–270.
14. Rahman, O. Denim Jeans: A Qualitative Study of Product Cues, Body Type, and Appropriateness of Use. *Fash. Pract. J. Des. Creat. Process Fash. Ind.* **2015**, *7*, 53–74.
15. Card, A.; Moore, M.A.; Ankeny, M. Garment Washed Jeans: Impact of Launderings on Physical Properties. *Int. J. Cloth. Sci. Technol.* **2006**, *18*, 43–52. [CrossRef]
16. Abrego, S. Cone Mills Denim: An Investigation into Fabrication, Tradition, and Quality. *Fash. Theory* **2019**, *23*, 515–530. [CrossRef]
17. Cassidy, T.D.; Bennett, H.R. The Rise of Vintage Fashion and the Vintage Consumer. *Fash. Pract. J. Des. Creat. Process Fash. Ind.* **2012**, *4*, 239–261. [CrossRef]
18. Moon, H.; Miller, D.R.; Kim, S.H. Product Design Innovation and Customer Value: Cross-Cultural Research in the United States and Korea. *J. Prod. Innov. Manag.* **2013**, *30*, 31–43. [CrossRef]
19. Miller, D.; Woodward, S. Manifesto for a Study of Denim, Social Anthropology. *Eur. Assoc. Soc. Anthropol.* **2008**, *15*, 335–351. [CrossRef]
20. Feijis, L.M.G.; Toeters, M.G. Cellular Automata-Based Generative Design of Pied-De-Poule Patterns Using Emergent Behavior: Case Study of How Fashion Pieces Can Help to Understand Modern Complexity. *Int. J. Des.* **2018**, *12*, 127–144.
21. Micheli, P.; Gemser, G. Signaling Strategies for Innovative Design: A Study on Design Tradition and Expert Attention. *J. Prod. Innov. Manag.* **2016**, *33*, 613–627. [CrossRef]
22. Loschek, I. *When Clothes Become Fashion: Design and Innovation Systems*; Berg Publishers: Oxford, UK, 2009.
23. Townsend, K. The Denim Garment as Canvas: Exploring the Notion of Wear as a Fashion and Textile Narrative. *Text. Cloth Cult.* **2015**, *9*, 90–107. [CrossRef]
24. Cachon, G.P.; Swinney, R. The Value of Fast Fashion: Quick Response, Enhanced Design, and Strategic Consumer Behavior. *Manag. Sci.* **2011**, *57*, 778–795. [CrossRef]
25. Bhardwaj, V.; Fairhurst, A. Fast Fashion: Response to Changes in the Fashion Industry. *Int. Rev. Retail. Distrib. Consum. Res.* **2010**, *20*, 165–173. [CrossRef]
26. Rahman, O.; Gong, M. Sustainable Practices and Transformable Fashion Design—Chinese Professional and Consumer Perspectives. *Int. J. Fash. Des. Technol. Educ.* **2016**, *9*, 233–247. [CrossRef]
27. Fuchs, C.; Prandelli, E.; Schreier, M.; Dahl, D.W. All that is users might not be gold: How labeling products as user designed backfires in the context of luxury fashion brands. *J. Mark.* **2013**, *77*, 75–91. [CrossRef]
28. Heine, K. The Personality of Luxury Fashion Brands. *J. Glob. Fash. Mark.* **2010**, *1*, 154–163. [CrossRef]
29. Jain, S.; Khan, M.N.; Mishra, S. Understanding Consumer Behavior regarding Luxury Fashion Goods in India Based on the Theory of Planned Behavior. *J. Asia Bus. Stud.* **2017**, *11*, 4–21. [CrossRef]
30. Wu, M.-S.S.; Chaney, I.; Chen, C.-H.S.; Nguyen, B.; Melewar, T.C. Luxury fashion brands: Factors influencing young female consumers' luxury fashion purchasing in Taiwan. *Qual. Mark. Res.* **2015**, *18*, 298–319. [CrossRef]
31. Li, G.; Li, G.; Kambele, Z. Luxury Fashion Brand Consumers in China: Perceived Value, Fashion Lifestyle, and Willingness to Pay. *J. Bus. Res.* **2012**, *65*, 1516–1522. [CrossRef]
32. Bye, E.; Sohn, M. Technology, Tradition, and Creativity in Apparel Designers: A Study of Designers in Tree US Companies. *Fash. Pract.: J. Des. Creat. Process Fash. Ind.* **2010**, *2*, 199–222. [CrossRef]
33. Cochran, W.G. *Sampling Techniques*, 3rd ed.; John Wiley & Sons: Hoboken, NJ, USA, 1977.
34. Statistics Bureau of Japan. Result of the Population Estimates. Available online: https://www.stat.go.jp/english/data/jinsui/tsuki/index.html (accessed on 9 October 2021).
35. Household Survey (Ministry of Internal Affairs and Communications). Available online: https://www.stat.go.jp/data/kakei/longtime/soutan.html (accessed on 10 January 2022).
36. Hair, J.F.; Black, B.; Babin, B.; Anderson, R.E.; Tatham, R.L. *Multivariate Data Analysis*; Pearson Prentice Hall, Pearson Education: Upper Saddle River, NJ, USA, 2006; pp. 1–816.
37. Bacon, D.R.; Sauer, P.L.; Young, M. Composite Reliability in Structural Equations Modeling. *Educ. Psychol. Meas.* **1995**, *55*, 394–406. [CrossRef]
38. Tavakol, M.; Dennick, R. Making Sense of Cronbach's Alpha. *Int. J. Med. Educ.* **2011**, *2*, 53–55. [CrossRef]
39. James, G.; Witten, D.; Hastie, T.; Tibshirani, R. *An Introduction to Statistical Learning: With Applications in R*, 1st ed.; Springer: Berlin/Heidelberg, Germany, 2014; p. 112.
40. Dunne, L.; Stivoric, J. Fashioning Bodily Knowledge: BodyMedia's Pervasive Body-Monitoring Portal. *Fash. Pract. J. Des. Creat. Process Fash. Ind.* **2013**, *5*, 107–116. [CrossRef]
41. Quinn, G.P.; Queen, J.P. *Experimental Design and Data Analysis for Biologists*; The Press Syndicate of the University of Cambridge: Cambridge, UK, 2002.

42. Cirella, S. Organizational Variables for Developing Collective Creativity in Business: A Case from an Italian Fashion Design Company. *Creat. Innov. Manag.* **2016**, *25*, 331–343. [CrossRef]
43. Gronow, J. Taste and Fashion: The Social Function of Fashion and Style. *Acta Sociol.* **1993**, *36*, 89–100. [CrossRef]
44. Mete, F. The Creative Role of Sources of Inspiration in Clothing Design. *Int. J. Cloth. Sci. Technol.* **2006**, *18*, 278–293. [CrossRef]
45. Bruce, M.; Daly, L. Buyer Behaviour for Fast Fashion. *J. Fash. Mark. Manag.* **2006**, *10*, 329–344.
46. Crofton, S.O.; Dopico, L.G. ZARA-Inditex and the Growth of Fast Fashion. *Essays Econ. Bus. Hist.* **2007**, *25*, 41–54.
47. Giacomin, J. What Is Human Centred Design? *Des. J.* **2014**, *17*, 606–623. [CrossRef]
48. Jones, G.G.; Pouillard, V. *Christian Dior: A New Look for Haute Couture*; Harvard Business School Entrepreneurial Management: Boston, MA, USA, 2009.
49. Chiva, R.; Alegre, J. Investment in Design and Firm Performance: The Mediating Role of Design Management. *J. Prod. Innov. Manag.* **2009**, *26*, 424–440. [CrossRef]
50. Louis, D.; Lombart, C. Impact of Brand Personality on Three Major Relational Consequences (Trust, Attachment, and Commitment to the Brand). *J. Prod. Brand Manag.* **2010**, *19*, 114–130. [CrossRef]
51. Rahman, O.; Jiang, Y.; Liu, W.S. Evaluative Criteria of Denim Jeans: A Cross-National Study of Functional and Aesthetic Aspects. *Des. J.* **2010**, *13*, 291–311. [CrossRef]
52. Sung, Y.; Kim, J. Effects of brand personality on brand trust and brand affect. *Phycol. Mark.* **2010**, *27*, 639–661. [CrossRef]