The Visual Element, Combination and Image Perception of Online Auction Photos of Female Clothing

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Abstract

In this study, female consumers aged 18 to 28 were selected as subjects to investigate the relationship between the presentation of online auction photos of female clothing and the perceptions of female consumers. The purpose of this study was (1) to make an analysis of the presentation of online auction photos of female clothing; and (2) to demonstrate different images perceived by female consumers towards clothing photos in various constituent elements. This study was carried out on the basis of Kansei Engineering and morphology. The results indicated significant differences in perception of photos between people with different demographic backgrounds such as age, area of residence, monthly income, frequency of browsing online auctions and purchase amount. The effectiveness of a photo was significantly correlated with key factors including shot, composition, angle of view, and location. If you want to convey romantic sense in photo, the best combine is the white walls in the room and shops with Full Shot, and restaurant, lawn with Full Shot or Medium-Full Shot. If you want to convey sense of fashion in photo, the best combine is the restaurant, urban streetscape, shops with Full Shot. If you want to convey youthful and sweet sense in photo, the best combine is the restaurant, lawn, shops with Full Shot or Medium-Full Shot. If you want to convey sense of simplicity in photo, the best combine is the white walls in the room, lawn with Full Shot. If you want to convey sense of softness and smoothness in photo, the best combine is white walls in the room, shops with Full Shot, and restaurant, lawn with Full Shot or Medium-Full Shot.
Keywords: Female Clothing, Image Perception, Online Auction Photos, Visual Element.

1. Introduction

People in Taiwan engaging in online shopping have reached more than 90% of the national population, where women was the majority (Institute for information Industry 2009). Women valued more on the shopping web page design compared to men. Therefore, creating a shopping environment attractive to women is critical to online marketplaces (Yu 2004).

The store image is a crucial factor influencing consumers' choice of stores. The product displays of online auctions are similar to the concept of store image. Atmospherics refer to the factor influencing consumers' affect and behavior through designing and controlling the interior space of stores (Liao 2007).

Consumers evaluate a website based on affective and cognitive qualities. Consumers purchase products and remember the place where they purchase the product (Liao 2007). Lokman & Noor (2006) highlighted that consumers' affective responses of their first impression on products is the main basis to evaluate ideal shopping environments. In the marketplace of online auctions, the primary element to build atmospherics is the visual element. Studies have indicated that the way images shown in web pages create the first impression of their potential consumers on the shopping website. The quality and specialty presented by the web page images further improve consumers' confidence in the shopping website (Kim & Moon 1998). Consequently, online product photos first impressed consumers and influence their inner feelings and decisions. To explore female consumers' image perception regarding visual element combinations, this study uses morphological analysis to establish morphological and visual elements of product photos of women's apparel in online auction.

2. Literature review

2.1 Characteristics of female consumers

Consumer can be categorized as rational and sensitive consumers. Sensitive consumers are mainly women aged between 10 and 40 years, comprising three stages (Lin 1989): (1) between 10 and 19 years of age: extremely easily influenced by all types of consumption; (2) between 20 and 29: extremely easily influenced by consumptions of apparel and maintenance of interpersonal relationships; and (3) between 30 and 39: sensitive-based apparel consumption. However, women at the

third stage already learn to adopt a rational consumption attitude regarding foods.

Institute for information Industry (2009) indicated that the majority of online female consumer groups were aged between 20 and 39 years. This study explores women's perception regarding visual elements of apparel product photos during their sensitive consumption process based on the survey on the second stage of female consumers conducted by Lin (1989).

2.2 Presentation of the Photos from On-line Clothing Stores

At present, the main presentation on a store's website is as follow: (1) Floor photography: It means photograph an object which lies on the floor. Notomi (2007) indicated that it was used by the web seller in the early stage. (2) Hang clothes on a hanger. This method is usually used by the seller of a small company or second hand seller in the event of a clearance sale when there is zero cost of human resource (Kumon 2010). (3) Mannequin: Misawa (2010) once addressed that using a mannequin could be more effective and three-dimensional than (1) and (2) above. (4) Self-portraits by seller. Recently, sellers of much smaller companies have taken on the role of model and photographer in presentation due to budget considerations. They usually dress themselves in the company's products and take pictures from the reflection in mirror. The angle of the photograph is well positioned so their facial features are not exposed in order to create a mystical feeling. (5) Model. Pictures can either be shot indoors or outdoors. When photography shoots take place indoor; lighting, composition, and the posture of model need to be considered. When photography shoots take place outdoor; climate, framing, and scenery need to work together with the composition and the posture of model (Lee, et al. 2009). Besides, this study about photography styles will process based on the survey on the difference between traditional frame photography and photography styles from on-line stores by Chang, et al. (2011).

3. Research method

To explore female consumers' image perception regarding apparel product photos with various visual elements and combinations, this study comprised two phases. (1) The objective of the preliminary experiment was to extract lexicon regarding image perception and establish experimental sample photos of women's apparel of online auction. (2) The objective of the formal experiment was to understand female consumers' image perception regarding apparel photos of various visual elements and

combinations.

3.1 Preliminary experiment

3.1.1 This study recruited 30 women aged between 18 and 28 years as participants and selected 20 words most suitable to describe women's apparel photos of online auction products from 60 adjectives describing perceptions regarding apparel photos of online auction. Consequently, a focus group comprising five people combined with the KJ (Kawakita Jiro) method was used to determine representative words of each group.

3.1.2 Establishing women's apparel photos of online auction

(1)   Collecting women's apparel photos of online auction

According to four major indicator surveys, such as ARO, MIC, Nielsen, and NetWatch, Yahoo! Auctions is the online auction platform with the highest popularity in Taiwan. Therefore, this study used Yahoo! Auctions as the target to collect photos from online marketplaces that already operated online auctions regarding popular brands of women's apparel for more than 3 years.

(2)   Creating experimental sample photos

Through morphological analysis, this study established morphological and visual elements of women's apparel photos of current online auctions products. To control the experimental accuracy, this study controlled factors influencing perceptions except visual elements and combination of photos. Table 1 shows the control variables of experimental sample photos.

(3)   Selecting experimental sample photos

To avoid overly similarity between experimental samples, photo discrepancy selection was conducted using the focus group method.

Table 1. Control variables of experimental sample photos

Control variable	Explanation
Model and posture	Models are women aged between 18 and 28 years, standing straight with hands down and a smile (Fig. 1).
Apparel	Five sets of apparel of top sales volumes are selected from the online auction marketplace of experiment. The final sample is the set of apparel most suitable for the current season voted by 50 women aged between 18 and 28 years (Fig. 2).
Distance	Distance of camera: A distance of 2 m between the model and the camera in both straight-looking and 45° look-up shots.
Display	To avoid slight differences in the angle of view and model's posture and smile between shootings, this study uses photo editing to control variables.
Weather	Photos are taken at sunny days.
Time	The time for shooting is fixed at 9:00 am and 3:00 pm.
Camera equipment	Camera: all photos are taken using Panasonic GF1 with a prime lens.

Figure 1. Model for experimental demonstration

Figure 2. Apparel for experimental demonstration

3.2 Formal experiment

(1) Experimental sample: Female apparel photo sample of online auction was established in the preliminary experiment

(2) Questionnaire design: Female apparel image perception words of online auction were extracted in the preliminary experiment. The Likert scale was used to measure the subjects' perception, based on selection items with 1 to 5 scores.

(3) Subjects: Female students at the college level or above and employees who graduated from university within 3 years aged between 18 and 28 years were recruited (N = 60).

(4) Experiment implementation: This experiment was conducted using an online questionnaire system between May 15, 2011 and June 15, 2011.

(5) Statistical analysis: Statistical analysis was conducted using statistical software SPSS.

4. Results of the preliminary experiment

4.1 Extracting female apparel image perception words of online auctions

Representative words extracted are shown below: romantic, fashionable, youthful and sweet, simple, and soft and smooth.

4.2 Establishing visual elements of female apparel photo of online auctions

(1) Female apparel photo sample of online auction and morphological analysis

We summarized the analysis of light source, shot method, composition, angle of view, shooting location, and apparel product display proposed by Chang (2011) and collected 40 female apparel sample photos from the Yahoo! Auction. Table 2 shows the four groups of experimental variables in this study (shot method, composition, angle of view, and shooting location environment). Cross-combination of the four variables was conducted to create experimental samples.

Table 2. Morphology of experimental samples

	Light source	Shot	Composition	Angle of view	Location	Product display
a	Side-front lighting	Full-shot	Central composition	Horizontal view	Indoor white wall	Model display
b		Medium -full shot	Rule of thirds	Upward view	Indoor wooden wall	
c			Bisection		Indoor restaurant	
d					Outdoor grassland	
e					Outdoor area in a city	
f					Outdoor area in a countryside	
g					Outdoor stores	

Figure 3 shows the angle of view regarding the model. To prevent the model display from influencing the visual perception, this study synthesized this photo with other variables in the experiment. The sample locations of the experiment were based on the reference of the best-selling female apparel marketplaces on the Yahoo! Auction website. Figues 4 and 5 show the environment of the shooting locations. Figure 6 shows the full-shot image. Figure 7 shows the medium-full shot image. Figure 8 shows the composition based on the rule of thirdds. Figure 9 shows the bisected composition.
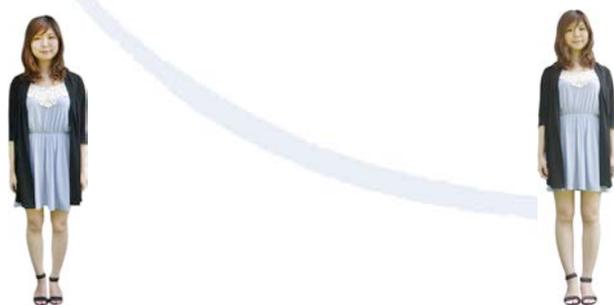
Figure 3. Figure shot (horizontal view at the left side, upward view at the right side)

Figure 4. Shooting location environment (Left: indoor white wall; middle: indoor wooden wall; right: indoor restaurant)

Figure 5. Shooting location environment (Left: outdoor grassland; middle-left: outdoor area in a city; middle-right: outdoor area in a countryside; right: outdoor store)
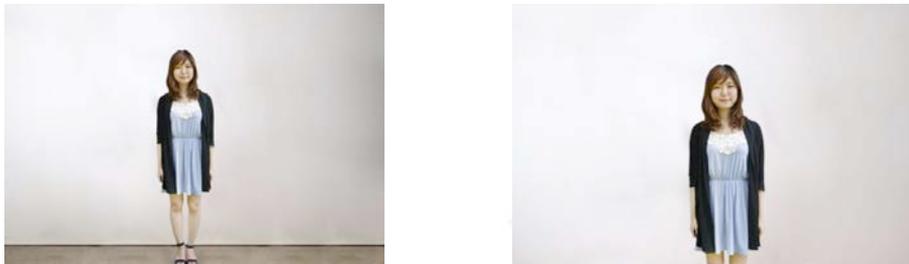

Figure 6. Full-shot central composition with a horizontal view at the indoor white wall
Figure 7. Medium-full shot central composition with a horizontal view at the indoor white wall

Figure 8. Full-shot composition based on the rule of thirds with a horizontal view at the indoor white wall

Figure 9. Full-shot bisecting composition with a horizontal view at the indoor white wall

(2) Difference screening of the experimental photo samples: Based on the cross-combination of variables in Table 2, 84 model display photos were obtained. Excluding photos with excessive resemblance as a whole, a total of 40 photos with significant differences were selected and used as the photos for the final experiment.

5. Formal experiment result

5.1 Relationship between visual elements of photos and image perception

(1) Shooting location: Analysis results indicated that significant difference existed between subjects' perception s of various locations (.000 < α = 0.05).

(2) Shots: Significant differences existed between subjects' perceptions of shot methods, reaching a p value of .000 < α = 0.05. The subjects' perceptions of the full-shot sample in the experiment were stronger than those of the medium-full shot samples.

(3) Composition: Significant differences only existed in "romantic" (.029 < α = 0.05) and "fashionable" (.025 < α = 0.05) variables of composition.

(4) Angle of view: Differing angles of view generated significant differences between all perceptions (.000 < α = 0.05). The strength of subjects' perceptions regarding the horizontal view was stronger than that of the upward view.

5.2 Relationship between combined photo visual elements and image perception

Multivariate analysis of variance (MANOVA) regarding location, shot, composition, and angle of view were conducted. The statistical result indicated that significant and simple main effect ($p = 0.000$) existed in location, shot, and angle of view variables, but not in composition ($p = 0.797$). In addition, significant interaction effect existed between location and shot ($p = 0.005$), whereas no interaction effect existed between other variable combinations.

The mean of display perceptions of all elements were calculated. Image relationship between location and shot was combined and all visual elements with an image mean above 2.792 were extracted as shown in Table 3. The result showed the combinations of location and shot that exhibited stronger images.

Table 3. Image relationship of combination of location and shot

Dependent variable	Location	Shot	Mean	Standard deviation
Romantic and beautiful	Indoor white wall	Full-shot	2.792	.104
	Indoor restaurant	Full-shot	3.239	.085
		Medium-full shot	3.178	.085
	Outdoor grassland	Full-shot	3.067	.085
		Medium-full shot	2.794	.085
	Outdoor store	Full-shot	3.283	.085
Popular and fashionable	Indoor restaurant	Full-shot	2.900	.083
	Outdoor area in a city	Full-shot	2.978	.083
	Outdoor store	Full-shot	3.522	.083
Youthful and sweet	Indoor restaurant	Full-shot	3.133	.085
		Medium-full shot	3.106	.085
	Outdoor grassland	Full-shot	3.194	.085
		Medium-full shot	2.922	.085
	Outdoor store	Full-shot	3.756	.085
		Medium-full shot	3.067	.085
Simple	Indoor white wall	Full-shot	3.167	.104
	Outdoor grassland	Full-shot	2.844	.085

Soft and smooth	Indoor white wall	Full-shot	3.133	.104
	Indoor restaurant	Full-shot	3.033	.085
		Medium-full shot	2.944	.085
	Outdoor grassland	Full-shot	3.150	.085
		Medium-full shot	2.878	.085
	Outdoor store	Full-shot	3.161	.085

6. Conclusion and suggestions

6.1 Conclusion

6.1.1 Relationship between visual elements of female apparel product photos and perceptions

(1) Location: Outdoor street scenes can be used to create a sense of fashion. White or wooden walls can be used as the background to present a sense of simplicity. Indoor restaurants can be used to create a romantic sense. Moreover, a youthful and sweet sense can be conveyed by shooting in environments such as outdoor grassland, outdoor areas in the countryside, and outdoor stores.

(2) Shot: Medium-full shot can be used when the background of the location is simple and monotonous. Full-shot photos can be used in locations with richer elements to intensify the photo as a whole.

(3) Composition: To present a sense of fashion, the composition rule of thirds can be used. To create a romantic sense, bisecting composition can be adopted.

(4) Angle of view: The horizontal view is the angle mostly accepted. Simple postures combined with differing locations, composition, and shots, a stronger perception can be attained with the upward view.

6.1.2 Relationship between perceptions and combination of location and shot of female apparel photos

(1) To create a romantic sense, indoor white wall or outdoor store combined with the full-shot method and the combination of indoor restaurant or outdoor grassland and full-shot or medium-full shot methods can be used. The combination of outdoor store and the full-shot method generated the best effect.

(2) To create a sense of fashion, combinations of indoor restaurant, street scene in a

city, or outdoor store and the full-shot method can be used. The combination of outdoor store and the full-shot method generated the best effect.

(3) To exhibit a youthful and sweet sense, combinations of indoor restaurant, outdoor grassland, or outdoor store and full-shot or medium-full shot can be used. The combination of outdoor store and the full-shot method generated the best effect.

(4) Indoor white wall and outdoor grassland can be combined with the full-shot method to create a sense of simplicity.

(5) To create a sense of softness and smoothness, combinations of indoor white wall or outdoor store and the full-shot method and the combinations of indoor restaurant or outdoor grassland and full-shot and medium-full shot methods can be used. The combinations of the full-shot method and indoor white wall, indoor restaurant, outdoor grassland, and outdoor store exhibited the best effect.

6.2 Suggestions

A comprehensive online shopping space is composed of various stores with various templates, styles, fonts, color schemes, and layouts. This study understands that the various elements composing a product photo influence subjects' perceptions regarding the product photo. Future studies should further explore the visual effect of the space planning of the marketplace to understand whether consumers prefer certain conditions of the online shopping space (e.g., templates, styles, fonts, color schemes, and layouts) and whether these conditions influence consumers' purchasing power.

7. Acknowledgements

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