

Research on the commercialization of design course works

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Abstract

This study aims to analyze how students' design work functions affect consumer attitudes and purchase intentions toward clothes designed by students, while exploring the moderating effect of price sensitivity in such a relationship. Data was acquired from 351 responses of an online questionnaire (www.sojump.com). A two-step approach was employed to analyze our hypotheses using structural equation modeling (SEM) in SPSS 22.0 and AMOS 22.0 statistical packages. First, significant empirical evidence was secured regarding the effects of design functions (assurance, fashion, camouflage, individuality, and comfort) on consumer attitudes toward clothes, which can lead to purchasing intention. Fashion, individuality, and comfort functions can enhance consumer attitude significantly, but assurance and camouflage have no significant influence. Among the functions, comfort has the greatest effect on consumer attitudes, indicating that when students market works as commodities, comfort should be highlighted in their designs. In this way, such products can draw the interest of many consumers. Second, empirical evidence showed that price sensitivity negatively moderates the association between attitude and purchase intention. Thus, design courses should be careful when setting student works' prices given consumer sensitivity. The optimization of the student works' cost structure can help minimize price sensitivity. Overall, the findings and their implications can serve as a basis for the commercial application of design curriculum works and provide feasible support for developing student design curriculum in the future.

Key Words: functions of clothes, students' design work, attitude and purchase intention, price sensitivity

I. Introduction

Social art and culture have inevitably evolved and achieved milestones in recent years. Consequently, prominent colleges and universities have started to offer fashion design courses.

However, the existing teaching methods still need further improvements to help students learn and grasp related concepts effectively. Thus, this study aims to improve the teaching quality in fashion design courses by analyzing students' design work assignments. Specifically, we focus

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on the commercialization of design classroom works to examine the consumption behavior of students' works, which can greatly enhance the design motivation of students' works. Clothing design is either good or bad and has a great correlation with clothing function, which is the core of this study. Overall, our results are conducive to the adjustment of the curriculum construction of clothing design, providing an enhanced learning environment for overseas students who are looking forward to studying in Chinese fashion schools. They can also serve as a reference for the design courses of other countries.

Gonzalez-Jimenez (2016) showed that individuals could seek clothing for various functional purposes, such as fashion, expression of individuality, or comfort. Concerning the relationship between clothing design and function, a prior study correlated function with quantitative, medical, and utilitarian aspects (Fernández-Silva et al., 2020). Cox and Dittmar (1995) indicated the functions clothes fulfill for British students and the role that these perceived functions generally play for their (dis)satisfaction with their clothing. The functions of clothing are statistically correlated with the choice of clothes for fashion and positively related to the enjoyment of clothes shopping.

Yet, the social-psychological meanings and functions of clothes designed by students, or how such functions may influence a consumers' overall attitude and purchase behavior with their clothing, have received little systematic research attention. The literature review available about the function of the dress and functional analysis methods from and for design produces a fragmented understanding and some studies that sometimes ignore one another's results.

In this study, we combine the attitude function with the clothing function to determine how the clothing function of students' design works affects consumer attitude and purchase behavior. Our

hypotheses are as follows. (1) A positive relationship exists between clothing functions and consumer attitudes toward clothes designed by students. (2) Consumers who have higher levels of attitude will also have higher levels of purchase intention. (3) Price sensitivity moderates such a relationship. Our results can serve as a fair evaluation of students' design works to explore whether the commercialization of students' works has the feasibility of development. They can promote students' design desire and improve the quality of design-related courses to attract business opportunities.

II. Theoretical background and hypotheses

1. Functions of clothes designed by students

Clothing is a daily necessity in labor time and life and may bring about another by-product, "beauty," as it satisfies practical needs. The functions of clothing are particularly vital, and its meanings include but are not limited to functional meaning, which lies in easy removal and convenient replacement (Zhang et al., 2009). Individuals wear clothes to express their identity, gender, class, status, or consumer attitudes (Tiggemann & Lacey, 2009). In other words, clothing conveys various meanings, but the meanings conveyed are not invariant. Interpretation occurs in at least three levels: the general level of the cultural consensus, the more limited level of the social community, and the level of the specific individual interpretation (Noesjirwan & Crawford, 2011). Fernández-Silva et al. (2020) observed that the functional dimension of clothing could not be understood in the same terms proposed by the ergonomics of the product, i.e., from the ergonomic concepts of usability, efficiency, effectiveness, and

psychological comfort related to a specific activity or work. Thus, to investigate the commercialization of students' design works, we can take the functions of clothes as the primary factor. However, we cannot find previous research on the relationship between functions of clothes and students' design works, so we approach our hypotheses in an exploratory way in this study.

Gonzalez-Jimenez (2016) divided clothing functions into five specific clothing choices: fashion, assurance, camouflage, individuality, and comfort. They found positive relationships between cosmopolitanism and assurance, camouflage, and comfort. In Tiggemann and Lacey's (2009) study, the functions of clothing mainly include fashion, assurance, camouflage, individuality, and comfort. Among them, fashion, camouflage, and individuality have statistically significant relationships with clothing satisfaction based on the evaluation. In a research on the role of clothing in women's body experience (Tiggemann & Andrew, 2012), five dimensions (assurance, fashion, camouflage, individuality, and comfort) indicate the functions of clothing. The three most highly endorsed functions of comfort, assurance, and fashion in a younger unselected sample are the same as the previous finding with female shoppers. Cox and Dittmar (1995) presented six functions of clothes: self-expression, personal history, mood-related, luxury, social interrelatedness, and object-intrinsic. In general, perspectives on the functions of clothing items significantly affect satisfaction with clothing. Shaouf et al. (2016) found that although web advertising visual cues influence consumers' purchasing intention through advertising attitudes and brand attitudes, they do not have direct effects. On the basis of the above discussion, we divide the functions of clothes designed by students into five dimensions: assurance, fashion, camouflage, individuality, and comfort.

2. Attitude function theory and consumer behavior

Commercialization of students' works as a sale promotion can improve the quality of students' design works and their attention to the design course. As the premise of the commercialization research of students' design works, we discuss the relationship between attitude and consumer behavior in this section. Attitude function theory (Allen et al., 2002) indicates that attitudes may serve any number and combination of psychological functions. In general, attitude function has two categories: evaluative and expressive. Attitudes with an evaluative psychological function derive their valence from the attitude object's intrinsic properties (Herek, 1987). The functional approach to attitudes posits that attitudes fulfill psychological needs (Gregory et al., 2004) and addresses the motivational bases or the functional underpinnings of people's attitudes.

We choose attitude-behavior hierarchy as our theoretical framework in this study. It assumes an indirect effect of functions on behavior through attitude, i.e., clothing functions influence attitude, which in turn influences particular behavior patterns. Attitude is generally considered a vital factor that induces an intention-behavior relationship (Han et al., 2019). In terms of crowdfunding initiatives, attitude toward sustainability positively affects participation in sustainability behavior (Kim & Hall, 2021). A prior study on environmental and prosocial behavior (Jacobs et al., 2018) showed that a positive attitude toward sustainable clothing enhances sustainable clothing purchase behavior. Kim et al. (2014) indicated that perception of functional attributes affects attitudes toward design, which in turn positively affects attitudes toward product and purchase intention. In Abdul-Muhmin's research (2011), attitude toward purchasing mediates the positive effect of overall

satisfaction with the previous purchasing on purchase intention. The satisfaction here can also be perceived as the satisfaction with clothing function. Concerning the commercialization of students' works, we should understand consumer attitude and purchase intention toward students' clothing design works, which is also the significance of this study. Accordingly, we can determine whether the clothing design curriculum, including the integration and application of clothing commercialization curriculum and clothing design curriculum, needs further adjustment.

On the basis of the above discussion, we can infer that the function of the clothes designed by students may also affect consumer attitude and behavior toward such products. Hence, we propose the following hypotheses:

H1a: Assurance, as a function of clothes designed by students, enhances consumer attitudes toward such products.

H1b: Fashion, as a function of clothes designed by students, enhances consumer attitudes toward such products.

H1c: Camouflage, as a function designed by students, enhances consumer attitudes toward such products.

H1d: Individuality, as a function designed by students, enhances consumer attitudes toward such products.

H1e: Comfort, as a function designed by students, enhances consumer attitudes toward such products.

H2: Consumer attitudes toward clothes designed by students enhance purchase intention.

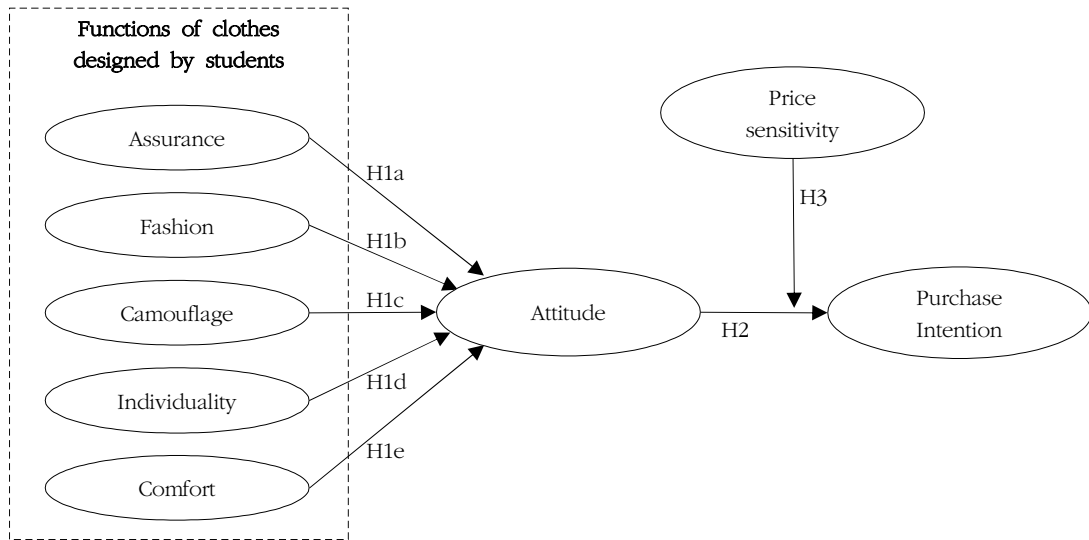
3. Price sensitivity

Price is the primary factor that affects consumer attitudes and behaviors (Saleh et al., 2018). Individuals are characterized by a high level of acceptability of the price range they are

willing to pay for specific products (Bhardwaj, 2010). Price sensitivity refers to the extent of consciousness and reaction displayed by consumers when finding differences among the prices of given products or services. It is the extent to which a customer accepts a price increase for a product in terms of economic and psychological gains (Bhutto et al., 2020). In line with our research context, we also define price sensitivity as the extent to how consumers feel about paying the price of the clothes designed by students.

Previous studies explored the potential influence of price sensitivity on consumers' perceptions in the consumer behavior literature. Bhutto et al. (2020) emphasized that price sensitivity negatively moderates the relationship between attitude and purchase intention. In particular, when the price sensitivity is high, the relationship between attitude and purchase intention will be strengthened. Saleh et al. (2018) indicated a significant negative association between price sensitivity and consumer purchase attitude toward soft drinks. Generally, price sensitivity significantly affects attitude toward products, which in turn affects purchase intention. However, in Bhardwaj's (2010) study, price sensitivity did not act as a moderator given the non-significant relationship between attitude and purchase intention toward counterfeit and original brands.

Although no study has employed the construct of price sensitivity as a moderator between the relationship of attitude and intention to purchase clothes designed by students, we expect that individuals who have a favorable attitude toward purchasing clothes may have different levels of purchase intention depending on their level of price sensitivity. On the basis of the existing literature, we also take price sensitivity as a moderating variable to explore consumers' insights about how it moderates the links between their attitude and purchase intention of



〈Fig. 1〉 Research model

clothes designed by students, as shown in the research model in (Fig. 1). Therefore, we propose the following hypothesis:

H3: Price sensitivity moderates the relationship between consumer attitude and purchase intention of clothes designed by students.

III. Methods

1. Measurements

To measure the eight studied constructs, including clothing functions (assurance, fashion, camouflage, individual, and comfort), attitude, purchase intention, and price sensitivity, we utilized an online survey consisting of 24 questions. For students' clothing design works in the Chinese context, we adopted all items from previously validated scales in related literature. We modified them in accordance with the current study. To evaluate five functions of clothes designed by students, we derived three items for each function from a prior study (Tiggemann &

Lacey, 2009). We measured attitude toward clothes designed by students using three items from previous research (Abdul-Muhmin, 2011; Shaouf et al., 2016). We also adopted three questions from previous research (Bhutto et al., 2020; Shaouf et al., 2016) to gauge consumer purchase intention of clothes designed by students and another three items from a previous study (Bhardwaj, 2010) to determine price sensitivity. All items used five-point Likert scales from 1 = "strongly disagree" to 5 = "strongly agree." Two professional linguists fluent in English and Chinese translated the original English survey instruments into Chinese. Then, they back-translated the Chinese version into English to identify any translation inconsistencies.

2. Data collection

Online surveys are commonly used because they can result in rapid responses, access a range of populations, and be cost-effective for Internet-based populations. We conducted the online survey (www.sojump.com) between December 10 and 30, 2020. We deemed 351

〈Table 1〉 The characteristics of the respondents ($n = 351$)

Category		<i>n</i>	Percentage(%)
Gender	Male	125	35.6
	Female	226	64.4
Age	Below 19 years	22	6.3
	20-29 years	152	43.3
	30-39 years	128	36.5
	Above 40 years	49	14.0
Marital status	Unmarried	162	46.2
	Married	189	53.8
Education	High school degree	38	10.8
	Undergraduate degree	246	70.1
	Graduate degree	67	19.1
Monthly family income	Below 1,000,000 WON	52	14.8
	1,000,000~2,000,000 WON	124	35.3
	2,000,000~3,000,000 WON	97	27.6
	Above 3,000,000 WON	78	22.2

responses as qualified and valid and used them for the analysis. Before answering the questionnaire, the respondents were first presented with the students' design works. After they had some understanding of the commercialization plan of the students' works, they were asked to answer the questionnaire. In the analysis, we adopted an unlimited, large-scale collection of answers to explore how to improve students' design course works preliminarily. Each respondent was reminded to answer the survey items carefully. They were also instructed to ask for advice when they were having trouble answering any question. In the survey, they were instructed to score the five functions of clothes designed by students, express their attitude and purchase intention toward the clothing, and finally provide their usual perception of the item price.

IV. Results and discussion

1. Sample profile

Given that we posted our questionnaire online

leading to random distribution, we applied no intentional adjustment on the obtained proportion. Although we did not compulsorily divide the demographic factors, such as gender, age, marital status, education background, and income, the survey data could still be used as the empirical results of this study. Almost two-thirds of the respondents were female (64.4%), and most respondents were 20-29 years old (43.3%). The respondents with an undergraduate degree accounted for the highest percentage (70.1%), followed by those with a graduate degree (19.1%) and a high school degree (10.8%). More than half of the respondents were married (53.8%), and the proportion with a monthly family income of 1,000,000-2,000,000 won (35.3%) was greater than that with a monthly family income of 2,000,000-3,000,000 won (27.6%) or higher. Overall, the results were influenced by the improved education level of Chinese people in recent years. This assumption was especially true for those aged between 20 and 39 years. In addition, the household income of most young people was not high. This case was evident in answer sheet data where women were the majority. 〈Table 1〉 shows the details of the above results.

〈Table 2〉 Construct measurement

Construct	Scales	Standard Estimates	t-value	Cronbach's α	AVE	CR
Assurance	The clothes designed by students can boost my morale.	0.798	—	0.810	0.587	0.818
	The clothes designed by students can make me confident.	0.750	12.831***			
	The clothes designed by students can make me feel flattered.	0.750	12.831***			
Fashion	The clothes designed by students are fashionable.	0.764	—	0.782	0.881	0.801
	The clothes designed by students are stylish.	0.793	12.565***			
	The clothes designed by students can make an impression.	0.664	11.160***			
Camouflage	The clothes designed by students can hide me.	0.910	—	0.942	0.844	0.924
	The clothes designed by students can cover up my shortcomings.	0.924	28.098***			
	The clothes designed by students can prevent me from being noticed.	0.923	28.020***			
Individuality	The clothes designed by students can make me have personality.	0.867	—	0.919	0.791	0.912
	The clothes designed by students can make me look distinctive.	0.905	22.774***			
	The clothes designed by students can make me look unusual.	0.895	22.450***			
Comfort	The clothes designed by students look comfortable.	0.809	—	0.856	0.666	0.852
	The clothes designed by students look cozy to wear.	0.809	15.864***			
	The clothes designed by students can make me relax.	0.804	15.783***			
Attitude	Overall, I like the clothes designed by students.	0.864	—	0.928	0.813	0.917
	In general, I am favorable toward the clothes designed by students.	0.925	24.254***			
	Overall, I find the clothes designed by students good things.	0.915	23.868***			
Purchase Intention	I am interested in purchasing the clothes designed by students.	0.917	—	0.943	0.847	0.953
	I am willing to purchase the clothes designed by students.	0.916	28.219***			
	I will probably purchase the clothes designed by students.	0.929	29.164***			
Price Sensitivity	In general, the price or cost of buying clothes designed by students is vital to me.	0.935	—	0.955	0.878	0.936
	The clothes designed by students are worth paying high amounts of money.	0.962	36.143***			
	The clothes designed by students are worth paying high amounts of money.	0.914	30.845***			

Notes: $\chi^2/df=1.632$; IFI=0.978; NFI=0.945; CFI=0.978; RMSEA=0.040; $p^{***}<0.001$.

2. Reliability, validity, and model fit

We conducted variable tests to check the data reliability and validity. 〈Table 2〉 presents the results. To determine whether measurement

〈Table 3〉 Discriminant validity

	Assurance	Fashion	Camouflage	Individuality	Comfort	Attitude	Purchase Intention	Price Sensitivity
Assurance	0.587 ^a							
Fashion	0.447 ^b	0.551 ^a						
Camouflage	0.300 ^b	0.280 ^b	0.844 ^a					
Individuality	0.448 ^b	0.426 ^b	0.133 ^b	0.791 ^a				
Comfort	0.318 ^b	0.433 ^b	0.197 ^b	0.305 ^b	0.666 ^a			
Attitude	0.363 ^b	0.433 ^b	0.236 ^b	0.424 ^b	0.498 ^b	0.813 ^a		
Purchase Intention	0.237 ^b	0.386 ^b	0.286 ^b	0.203 ^b	0.265 ^b	0.385 ^b	0.847 ^a	
Price Sensitivity	0.046 ^b	0.101 ^b	0.041 ^b	0.111 ^b	0.034 ^b	0.052 ^b	0.205 ^b	0.878 ^a

Notes: ^aAVE of each variable, ^bSquare of correlation coefficient between latent variables

scales could be accurately explained, we first employed exploratory factor analysis (EFA) using varimax rotation via principal component analysis. The EFA results showed that the remaining items' factor loadings were higher than 0.6, which exceeded the acceptable level of 0.5. Similarly, the values of Cronbach's alpha for construct reliability exceeded the acceptable value of 0.7 (Hair et al., 2010).

We also conducted confirmatory factor analysis (CFA) to verify the unidimensionality of each model construct. All factor standard estimates were greater than the required level of 0.6 (Anderson & Gerbing, 1988), as shown in (Table 2). The values for composite reliability (CR) were greater than 0.8. Thus, each construct met the requirement for internal consistency (Nunnally, 1978). All the AVE values were greater than the required level of 0.5, providing support for convergent validity (Fornell & Larcker, 1981), as shown in (Table 3).

The CFI, IFI, and NFI values were 0.978, 0.978, and 0.945, respectively, which were greater than the required level of 0.90 (Bentler,

1990). The RMSEA value was 0.040, indicating that our model had satisfactory goodness of fit. The CFA Chi-square value was 365.56 with 224 degrees of freedom ($p < 0.001$) and a ratio of 1.632, also satisfactory (Marsh & Hocevar, 1985).

3. Hypothesis testing

To assess the relationship between the factors in the proposed model, we conduct a structural equation modeling (SEM) approach using AMOS 22.0. The structural model statistics showed a good model fit ($\chi^2/df=3.090$; IFI=0.927; NFI=0.896; GFI=0.9851; CFI=0.927; RMSEA=0.077). 〈Table 4〉 summarizes the SEM hypothesis results as follows.

We formulated Equation (1) to test Ha1 to H1e. They indicate the effects of the five clothing functions (assurance, fashion, camouflage, individuality, and comfort) on consumer attitude toward clothes designed by students. Fashion ($\beta=0.259^{***}$, $p < 0.001$), individuality ($\beta=0.244^{***}$, $p < 0.001$), and comfort functions ($\beta=0.353^{***}$, $p < 0.001$)

〈Table 4〉 Hypothesis test results

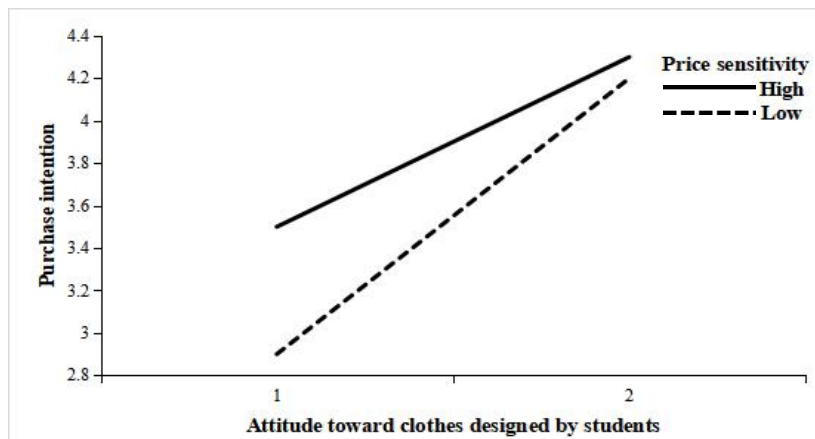
Hypotheses Path		Standardized Coefficient	SE	t-value	Contrast
H1a	Assurance → Attitude	0,086	0,063	1,554	Rejected
H1b	Fashion → Attitude	0,259***	0,068	4,486	Supported
H1c	Camouflage → Attitude	0,098	0,042	1,926	Rejected
H1d	Individual → Attitude	0,244***	0,049	4,628	Supported
H1e	Comfort → Attitude	0,353***	0,061	6,257	Supported
H2	Attitude → Behavior	0,364***	0,055	6,527	Supported

Notes: p*** < 0,001

〈Table 5〉 Moderation analysis results

Model	Behavior		
	Model 1	Model 2	Model 2
Step 1. Independent variable			
Attitude	0,364***	0,356***	0,306**
Step 2. Moderating variable			
Price sensitivity		0,174***	0,645***
Step 3. Moderating effect			
Attitude × Price sensitivity			-0,605**
Overall F(df)	53,362***	33,876***	25,868***
R²	0,133	0,163	0,183

Notes: Unstandardized regression coefficients reported. Standard error is listed in parentheses. p*** < 0,001, and p** < 0,01.



〈Fig. 2〉 The moderating effect of price sensitivity on the relationship between attitude and purchase intention of clothes designed by students

were positively related to consumer attitude toward clothes designed by students. Consumers who perceived fashion, individuality, and comfort functions of clothing had a better attitude toward clothes designed by students. These results were

consistent with previous research (Kim et al., 2014; Shaouf et al., 2016; Tiggemann & Lacey, 2009). Additionally, comfort function had a greater positive influence on attitude toward clothes than fashion or individuality function. The other two functions (i.e.,

assurance and camouflage) had no significant effect on attitude toward clothes designed by students. Thus, only H1b, H1d, and H1e were supported.

Next, H2 states a positive relationship between consumer attitude and purchase intention toward clothes designed by students. The results showed that attitude ($\beta=0.364^{***}$, $p<0.001$) was significantly positively related to purchase intention, consistent with previous research (Abdul-Muhmin, 2011; Han et al., 2019; Jacobs et al., 2018). Consumers who had a better attitude toward clothes designed by students had higher purchase intention. Thus, H2 was supported.

Finally, H3 states that price sensitivity moderates the relationship between consumer attitude and purchase intention toward clothes designed by students. In <Table 5>, the interaction terms representing attitude \times price sensitivity \rightarrow purchase intention ($\beta=-0.605^{**}$, $p<0.01$) was significant, consistent with prior studies (Bhutto et al., 2020; Saleh et al., 2018). Thus, H3 was fully supported. Following the guidelines of Aiken and West (1991), we used the information from path coefficients to plot the moderating effect of price on the relationship between consumer attitude and purchase intention <Fig. 2>, suggesting an improved relationship. Attitude had a stronger positive relationship with purchase intention, indicating low price sensitivity (dashed line), as shown in (Table 2). Thus, the attitude of consumers who perceived high price sensitivity (solid line) had a significantly weaker effect on their purchase intention. Even if they had a good attitude toward students' design works, they would still refuse to purchase them given their high price sensitivity.

V. Conclusion

This study mainly aimed at improving the quality of design courses and commercializing students' design works. These research objectives could help in developing students' learning motivation, work integrity, and design level. Accordingly, we examined the effect of students' design work on design evaluations by employing variables, such as clothing functions and consumer attitude and purchase intention toward clothes designed by students. We also investigated the moderating effect of price sensitivity on the association between consumer attitude and purchase intention. Our results provide several implications as follows.

With the demographic of 351 samples, most respondents were female, young, highly-educated, married, and earning a household income of more or less 1,000,000–2,000,000 won. The education level reflected that the education level of Chinese people is generally rising. Moreover, the household income showed a general level due to a large number of responses from the young population. However, these data were fully qualified in the hypothesis test of this study.

Our findings highlighted the positive effect of clothing functions on consumer attitudes toward clothes designed by students, such as fashion, individuality, and comfort. In particular, the greater the comfort function (followed by fashion and individuality), the better the respondents' attitude toward clothes designed by students. This trend is evident in commercialization strategies for products focusing on comfort, fashion, and individuality, where stylish design and comfortable materials are used to supplement the sense of individuality and strengthen comfortable images.

Next, the respondents' attitude has a positive

relationship with their purchase intention of clothes designed by students. Thus, when students' design work looks better and more likable, the higher the chance consumers will develop purchasing intention. Moreover, price sensitivity moderates the relationship between consumer attitude and purchase intention. Price sensitivity can reduce the positive effect of consumer attitude on purchase intention and hinder the commercialization of students' design works. Only under the guidance of a reasonable price can students' works be sold smoothly. The item price cannot also be reduced blindly, which makes consumers feel cheap and disgusted. Design courses can further realize the commercialization of students' work by providing the opportunity to present items with appropriate price and label of "made by students."

The present study also has a few limitations. We focused on functions of clothes designed by students and assessed the attitude-behavior hierarchy-based determinants of purchase intention in China only. Thus, a comparative and cross-sectional study can be conducted for culturally or economically diverse settings. Other constructs than price sensitivity can also be assessed to determine their moderating effect. This research direction may discover different dynamics behind enhanced or hindered consumer purchase intention of students' design work. In addition, we used a purposive sampling technique for data collection. Future research should consider other sampling techniques to check the robustness of our findings and increase their generalizability. Finally, this study was bound to a specific time frame, so we failed to identify the factors influencing individual purchase intention over a longer period.

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