

To What Extent Does the Colour Saturation of Restaurants' Uniforms Affect Consumers' Perceptions of the Restaurants?

Xingyan Liu

Wankelimeixijun Community, Meixihu Street, Yuelu District, Changsha, Hunan, 410221, China
Corresponding Author: Xingyan Liu, Email: yolandaliuxy@outlook.com

Abstract

Colour psychology highlights the effects of colours on people's moods. This study investigates the relationship between the colour saturation of uniforms and the relative influences on consumers' perceptions of expenditure and the variety of the food outlet. A survey with three types of restaurants (upper-class restaurant, café, and fast food shop) was employed in this study to examine consumers' perceptions of uniform selections and their expenditure on restaurants. The correlation coefficient was used to understand the influence of extraneous variables, such as age. Key results indicated that age was not an influential factor affecting consumers' perceptions of the restaurants. However, the data showed that the type of restaurants had significant effects on consumers' perceptions. In the upper-class restaurant and café conditions, consumers tended to select low-saturated uniforms in the restaurant with higher expected expenditures. In fast food conditions, colour saturation did not play a vital role in consumers'

perceptions. The key findings in this study provided insights for designing the uniforms for those restaurants, especially the start-ups or restaurants with low branding effects. Also, it could be useful for restaurant owners to choose their colour of uniforms to attract more footfall.

Keywords

Colour saturation; Colour psychology; Consumers; Catering industry

Introduction

Nowadays, there is a growing trend for demand for food catering services in the market. A large number of customers lead to a more competitive market, which has a great impact on suppliers in the catering industry. To show more comparative advantages and earn more revenue, restaurant owners employed various decoration strategies to improve the positive image of their branding. For example, change the colour of staff's uniforms to fit into the environment. Colours can influence people's first impressions of

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restaurants in many ways. In upper-class restaurants, I have seen that the light is usually darker than that in the fast-food shops the reason is that dark colour can bring people a sense of quietness and enjoyment, which is necessary for upper-class restaurants. On the contrary, the interior design and the staff's uniforms in the fast-food shops are mostly high-saturated colours from my observation. High-saturated colours can bring consumers a sense of happiness and be more attractive to children. The use of colours has become a cue for consumers to judge the type of restaurants. As a result, it is very important to understand the relationship between colour and consumers' psychology.

All the samples in the investigation will be Chinese. That is because I am not able to access global social APPs like Instagram in China; therefore, I could only give out questionnaires on the platforms that are allowed to use in China like Weibo and WeChat. And these platforms were not so popular among foreigners even though some groups like American-born Chinese might use them. Therefore, I predict that the sample will all be Chinese, no or just a little number of foreigners will answer my questions.

The topic discussed in this report is "to what extent does the colour of restaurants' uniforms affect consumers' perceptions of the restaurants". Saturation is defined as the colourfulness of an area judged in proportion to its brightness (Fairchild, 2013). Colour saturation can influence people's perceptions in several aspects, like choices of food in restaurants. For instance, high-saturation objects attracted more attention and were perceived to be larger (Hagtvedt & Brasel, 2017). Two previous researchers also found that consumers appeared to associate food packages with high colour saturation with unhealthy (Mead & Richerson, 2018). For instance, packages of chips were always in high

colour saturation. While the first study above only focused on people's perceptions of the overall products' size, the second study cared more about the food's healthiness. These studies indicate a research gap in that many researchers did not take colour saturation seriously, which makes this research topic valuable. Moreover, although there are many topics in marketing, I want to focus on the colour saturation of uniforms in the investigation. So this paper aims to explore the influence of the colour saturation of uniforms on consumers' first impression of restaurants.

Both female and male uniforms will be used in the questionnaire. However, except for upper-class restaurants, the clothing styles in cafés and fast-food shops will be the same for females and males. That is because I find that the uniforms for both male and female staff in cafés and fast-food shops are in the same style in one restaurant from my observation, but the uniforms are different for different genders in upper-class restaurants in most cases.

Aiming at consumers' perceptions, this study investigates specifically whether the colour would affect consumers' perceptions of the expected expenditure of restaurants or not. To ensure the practical purpose of this study, I select colour saturation as the main independent variable. Saturation has the most apparent contrast and gives the respondents the most different impressions. Although the highly saturated colours could increase the average arousal ratings (Schiller, Valsecchi & Gegenfurtner, 2017), little differences might not be so influential compared to huge differences when considering people's perceptions. Especially if they are not careful enough or talented in catching the details in a short period, for example, the children and elder people. Therefore, using colour saturation as the

independent variable to examine consumers' perceptions of a restaurant will be interesting.

Based on the correlation coefficient, the age variable is also considered in data analysis. The results provide some preliminary suggestions to owners of start-ups in the catering industry for colour uses in their restaurants. Meanwhile, the conclusion of the study gives some insights to uniform designers to design more welcomed uniforms among shop owners.

This investigation report contains five parts in the body paragraph. In the Literature Review, the current research and related analysis are shown, and the hypotheses are also shown in this part. What is more, the Methods specifically talks about the samples, the designs of the questionnaire, and the procedure. After that, the Results is based on the data analysis to test the hypotheses. Next, the Conclusion is to rationalise the key result and give some reasons. Some practical implications are given as the main aim of the study is to provide some suggestions for the start-ups in the catering industry. Lastly, the Evaluation writes about the limitations, expectations of further studies and self-comment on EPQ performance.

Literature Review

Colour can influence people's mood, for example, people in China tend to associate red with happiness and Lunar New Year. I have heard that these influences may be caused by colours themselves as blue and red bring people different feelings. However, the same colour may have separate effects on people because of the changes in colour saturation. At the same time, culture or religious beliefs may hugely affect people's moods or feelings. Meanwhile, because I choose the restaurant settings to conduct my investigation, the issues of catering industries are also considered. The part discusses and shows

the previous studies in these fields and gives hypotheses.

Colour Psychology

Colour psychology is one of the branches of psychology that studies the relationship between colours and human behaviours. Colours have qualities that can cause certain emotions in people (Samad & Aynaz, 2019). Therefore, colour psychology is used widely in places that provide service for customers, such as restaurants. This study is aiming at how the restaurant owners' knowledge of colour psychology will affect their chances to choose a customer-preferred colour to make the customers cheerful.

Colour Effects

Different types of colours can serve various roles in attracting consumers. Some colours will make people pay attention to the objects while some colours will not. Take a possible example in the catering industry. Examining if the colour of the staff's uniforms can attract more attention and make more people notice the restaurant is an important issue for uniform designers. Meanwhile, the contribution of colour in advertising is also significant. The higher value of colours in advertising will lead to the occurrence of greater feelings of relaxation (Gorn, Chattopadhyay, Yi & Dahi, 2015). Therefore, the studies concluded that colour's effects on emotions. For example, Gorn et al. (2015) tell us that colours can stimulate emotions and regulate people's relaxed state.

Sometimes, there is a need for restaurants to design logos, and the brand logos will be used on uniforms. The proper use of colour can help restaurant owners to build up branding. Also, it can reinforce people's memories of the brand. Labrecque and Milne (2011) argued that colour plays an important part in driving brand

perceptions such as brand personalities. It will also improve particular personality ratings when it creates a match between the brand logo colour and personality dimension, (Labrecque & Milne, 2011). As a result, proper use of colour on logo designs could make people remember the logo and have a better first impression of the restaurant.

Lastly, the visual effect of the same colour may be different either on-screen or on printed materials. Thus, it may lead to distinct consequences including different feelings. According to the interview online and face-to-face surveys with workers in the designing industry, some studies like Westland et al. (2015) concluded the most crucial factors related to colours in those designers' and brand managers' minds. The meta-analysis conducted by Westland et al. (2015) showed strong agreement with harmony, perception, meaning, psychology, and printing identified as areas of importance in the design process. So the choice of colours should be different when in different settings.

Colour's Meanings in Chinese Culture

Different cultures tend to have different meanings and explanations of colours. For example, red represents fire and is the most popular colour in Chinese culture. A recent study has shown that red is the national colour representing happiness, beauty, vitality, good luck, success and good fortune in China (Fercility, 2021). The different meanings of colours make the restaurant owners and designers in western cultures of Asian cultures have different commonly used colours in their choices and design.

Some studies found that several different factors influence colour meanings in Chinese culture. Firstly, there is a powerful tendency for meanings invested in colours in China to be

value-based (Kommonen, 2011). For instance, the Chinese people used red on items for the Chinese Lunar New Year, which makes "red" in China to be a colour with good meaning. By contrast, as "white" is widely used in funeral ceremonies in ancient China, the meanings of white are more likely to be negative in Chinese words. Furthermore, Xing (2008) studied the similarities and differences between colour terms in Chinese and English and categorised all the extended and abstract meanings of colour terms into two types: negative and positive. He concluded that the development of colour terms' extended meaning has been consistently and undeniably triggered by people's perception of the physical world (Xing, 2008). Thirdly, language is influenced by culture and reflects culture (Huang, 2011). As a result, the colours' meanings are highly dependent on the political background in some countries (e.g. socialism in China). Huang (2011) pointed out that "red" stands for revolution in China.

Colour Saturation

Manickam (2019) defined saturation as the purity of a colour. It could be calculated by estimating the percentage of black colour. When the percentage of black colour is high, the colour saturation is low. Oppositely, the colour saturation is high. Hence, colour saturation is widely used by designers and artists when they create artefacts (e.g. fashion designers' designed clothes). It can influence the visual illustration of the artefacts, which lets it become important in this study to explore the colour effects.

Overview of Colour Saturation

Many researchers studied the relationship between colour saturation and emotions to see the effect of colour saturation. Wilson and Oberfeld (2017) found that the average arousal ratings were higher for highly saturated chromatic colours than for colours with medium

or low saturation. And Wilson and Oberfeld (2017) also gave guidance to further studies that the probabilities of sex factors also exist when they found that the average valence ratings for grey colours were lower in females than in males. Meanwhile, Camgoz and colleagues (2002) found that hue and brightness-saturation levels of the colour sample can influence the preferences on specific background colours – the foreground colours were preferred when their saturation and brightness levels were increased. However, Camgoz et al. (2002) regarded that gender factors do not affect the result, which contradicted the findings from Wilson et al. (2017) that the variety of gender leads to the difference in their sensitiveness toward colours. I will look at gender in my questionnaire, and see which opinion is true.

A large proportion of the studies are based on saturation measures. Some researchers tested whether the measurements of colours are scientific or not. In 2017, Schiller and colleagues investigated the credibility of previous studies that used certain colour saturation measurements. To conduct the study, Schiller and his colleagues chose seven colour measurements that were used in previous studies. In his result, Schiller et al. (2017) found that all the seven saturation measures are not scientific as they are not based on empirical measurements of saturation. Therefore, the current saturation measures are not scientific enough and need to be enhanced.

Effects of Colour Saturation

Current studies concluded the relationship between colour saturation and consumers' perceptions of objects or products (Hagtvedt & Brasel, 2017; Mead & Richerson, 2018; Wit, 2017). And there are two important findings below.

Colour saturation could improve the visual illustration, the change in colour saturation can change people's perceived sizes of products. Hagtvedt and Brasel (2017) conducted six experiments and found that increasing colour saturation increases the perception of the size of the products. Meanwhile, they summarised that the high-saturation object captured significantly more overall fixation time and attracted more attention (Hagtvedt & Brasel, 2017).

Further, colour saturation is one of the foundations for people to judge healthiness. Researchers have concluded that consumers appear to associate vivid and highly colour-saturated food packaging with more indulgent and unhealthful foods (Mead & Richerson, 2018; Wit, 2017). Nevertheless, Mead et al. (2018) also admitted the influences of participant variable, which is individual differences during the judgement. In study three, they found that the main effect of package colour saturation on food healthfulness perceptions will be increased among restrained eaters (Mead & Richerson, 2018). Therefore, colour saturation will affect people's perceptions in many different aspects, and the degree of influence may be varied because of individual differences.

Marketing and Catering Industry

Marketing refers to activities a company undertakes to promote the buying or selling of a product or service (Twin, 2020). The catering industry is comprised of businesses that provide food, beverages or other services to a variety of clients (Manley, 2020). To earn more profit, it is important for restaurant owners in the catering industry to have suitable marketing methods. The marketing strategies tend to be varied because of the different social statuses of the target customers or the different cultures of the customers.

Hospitality is the relationship between a guest and a host, where the host receives the guest with goodwill, including the reception and entertainment of guests, visitors, or strangers (Hospitality, n.d.). While hospitality is crucial for a restaurant to increase consumer loyalty, owner-operated businesses are more likely to provide hospitality than corporations as traditionally understood (Symons, 2013). The author demonstrated that restaurants, especially those corporation-operated restaurants, need to improve their hospitality to make guests receive goodwill and happiness (Symons, 2013). And the necessities of the improvement will be more apparent with the advancing living standards.

History and Development

Catering dates back to the 4th millennium B.C. in China. The culture of grand eating and drinking was also present in old Egypt at that time. Most of the services were provided by slaves (A Brief History of Catering, n.d.). Since eating is people's primary need for survival, the simple services provided by slaves turned into an industry called the catering industry. Many restaurants in different countries began to innovate new services to increase their competitiveness and attract more consumers. In the 1930s, the Soviet Union created more simple menus for its nationals (Atkins, Oddy & Amilien, 2012). Currently, the catering industry kept developing with the advancement of technologies and increasing people's living standards. Now the service is paid off through wages for their staff in the restaurants.

People nowadays have more and more requirements for a good restaurant. The requirements include not only focusing on the dishes provided by restaurants but also caring about the services. Therefore, many researchers began to conduct investigations to find out key factors for restaurants to become more welcomed.

Among all the analysing methods in the area of marketing in the catering industry, the principal component analysis method has great application potential for a better understanding of influencing factors (Tang, 2014). The results from the analysis conducted by researchers can help the restaurants to catch the key problems and have a more efficient improvement. Therefore, exploring more influential factors, like the colour saturation of uniforms in this investigation, might be beneficial to the restaurants.

The Target Population

In scientific research, the target population is the group of individuals whom the intervention intends to conduct research and draw conclusions from (Louise Barnsbee, 2017). The target population is also essential for designing products (Gupta, 2014). In the catering industry, if the restaurant owners could design their uniforms and other elements in the restaurant to make passers-by have good perceptions, the popularity will be enhanced. Therefore, deciding the target population and setting the related elements are crucial for restaurant owners or start-ups.

In one study, Hagtvedt and Brasel (2017) found that if the marketers and businessmen invest sufficient time in selecting colours that reflect the values of the company and preferences of the target audience, they will get increased sales, brand recognition and consumer loyalty. Palmer et al. (2010) found that colour preferences have an influence on object preferences, especially for functionally identical artefacts that come in a wide variety of colours, such as clothes and appliances. Hagtvedt et al. (2017) and Palmer et al. (2010) both highlighted the importance of choosing proper colours for the target population. Additionally, Kumar (2017) found that colour does influence online purchasing intention. In his

study, the results showed that even if the store is online, the sellers need to pay attention to the arrangement of colour on the web page of their goods. Therefore, sellers need to adjust the colour to increase their revenues though they are just selling goods on the Internet. The more suitable colours are used, the more consumers will be attracted when they choose items online.

Cross-Cultural Differences and Similarities

Cross-cultural studies involve persons from different countries or ethnic groups, (Vijver, 2001). Some researchers used the cross-cultural research method to find out the differences and similarities between people from different cultural backgrounds. Several vital factors influence consumers' perceptions of their thoughts of branding and dishes as shown below.

Firstly, colour can influence people's impression of restaurant's branding. For all cultures, restaurant owners need to choose the right colours to have better branding. Aslam (2006) found that colours make the brand, that is, bring brand identity and corporate image. Proper use of colour can make the restaurants become more memorable for consumers and establish an icon for the brand. In addition to that, people from similar cultures tend to have the same perspectives on food shopping. Brunso et al. (1998) compared food shopping in four European countries, including France, Germany, Great Britain and Denmark. They found that the price criterion is the most important way of shopping for people in all four countries, while the shopping list is also welcomed by the participants from these four countries (Brunso & Grunert, 1998). However, different cultures have different educational systems, which made people from different cultures have distinctive opinions toward health. Media and the educational system are vital for people's perspectives on healthy eating. Banna et al.

(2016) conducted a study in America to find the differences and similarities in perspectives on healthy food between Chinese and Americans. They concluded that the diverse views on healthy eating may reflect food-related messages to which participants are exposed both through the media and educational systems in their respective countries (Banna, Gilliland, Keefe & Zheng, 2016).

Hypothesis

Based on the discussion above, this study hypothesises:

H1.a. High colour saturation will increase the consumers' perceptions of the expected expenditures of the restaurant.

H1.b. Low colour saturation will increase the consumers' perceptions of the expected expenditures of the restaurant.

H2. The age of the consumer will influence the effect of colour saturation on consumers' perceptions.

H3. The type of restaurant will influence the effect of colour saturation on consumers' perceptions.

H1a and H1b aim to explore the influences of colour saturation. H2 and H3 are proposed to examine age and type of restaurants, which have the probability to affect the results.

Methods

This study employed an online survey to examine colour saturation and its effect on consumers' opinions toward restaurants (See Appendix A). I chose three types of restaurants in the investigation, including upper-class restaurants, cafés and fast food shops. I recruited 105 participants online from Wenjuanxing (i.e.

an online questionnaire publication website in China, which could invite respondents by sending links via WeChat and other social media platforms). Participants included 68% females and 32% males. The questionnaire was composed of 17 questions and predicted to be finished in 3-5 minutes.

Sample

The participants in this investigation were all Chinese people who lived in China or in foreign countries. Most of the participants (83%) came from the southern part of China: one person came from Hong Kong, and others came from the mainland. For those subjects in foreign countries (4%), four people stayed in the USA while one person lived in the UK.

Regarding the distribution of gender, the number of females and the number of males were evenly distributed. While there were only 34 male participants (32%), the 71 female participants took 68% of the total number of participants.

When it came to considering the age distribution of the respondents, it was apparent that there was a lack of old participants who were older than 60 years old (2%) while the post-adolescents aged between 25-40 years old (44%) were the most. For the remaining three age groups, the number of people was relatively even. More specifically, non-adults (younger than 18) participants took 18% of the total participants; there are 15 youth participants aged between 18 and 25 (14%); 23 mid-life participants (the 40-60-year-olds) took 22% of the total participants (See Appendix C).

However, the age distribution generally followed the real-life situation (See Appendix D). Income tended to increase with the age, and it will decrease once the workers retired, (York, 2019). As the people aged between 25 and 60 years old are the most significant consumers in the markets,

it was reasonable that most of the respondents were aged within this boundary.

Stimulus Design

There were three uniforms in the questionnaire as the testing stimulus. These three uniforms stood for three types of restaurants, including upper-class restaurants, cafés and fast-food restaurants. Two uniforms with the same design but different colour saturations in each group, six uniforms were shown in total. If uniform A in the group was in low colour saturation, another in that group should be in high colour saturation to make a contrast. Before deciding on the colours for each uniform, the research on the background information was done. I collected some pictures of the existed uniforms for each type of restaurant and categorised them (See Appendix B). After that, I reviewed those photos and chose three colours that were most common in the market for each uniform, including green, blue and red.

Admittedly, while some people in the specific income standard were more likely to go to the upper-class restaurants, some people's income could only afford to pay for dishes in fast-food restaurants. Therefore, three uniforms were designed in order to get a more general conclusion about the relationship between the colour saturation of uniforms and consumers' perceptions rather than a specific result. Although only three kinds of restaurants were not enough to explain the relationship completely, the conclusion could be more comprehensive than that concluded from just one type of uniform.

Instruments and Procedure

The questionnaire in this investigation combined 17 questions. The self-report questionnaire needed between 3-5 minutes to be completed. There were two questions to ask about

participants' gender and age at the top of the questionnaire, just under the explanation part. Then, the remaining 15 questions were divided into three parts, which contained three uniforms including upper-class restaurant uniforms, café uniforms and fast food uniforms. They were repeated in three cycles, with six questions separately for each uniform.

The 15 questions under each uniform were mainly about the price, location and probable dishes. The aim of those questions about the price and location was to gather information about people's perceptions of uniforms with the same style but different colour saturation. The questions to ask participants to think about probable dishes were set up to see whether participants know well about the restaurant, or at least, have a basic understanding. If the respondents provided irrelevant answers, their data would be deleted.

Before demonstrating the questions, some explanations were added to tell the respondents that the questionnaire is not for business use, but for academic research. Meanwhile, the introduction of EPQ was shown to the participants. What is more, the source of the design was written clearly to avoid any legal problems. The participants needed to answer all the questions contained in the questionnaire. They are required to choose their answers based on their perceptions and feelings instead of any academic knowledge or hints from the third party. Once they chose to submit their responses, the links would identify their IP address automatically without requiring the respondents to answer such questions.

Results

The study examined how colour saturation and the type of restaurant affect consumers' perspectives using the survey method. The total

sample size is 105. In this section, I listed the significant numbers and information to test the hypotheses by using gathered data. Before analysing the data that I collected from the questionnaire, I used the answers to "please list the dishes that are probably served at this type of restaurant" to exclude some invalid answers. For example, if a respondent gave impossible answers (e.g. I don't know), their responses were omitted.

Descriptive Data

In each group, the percentage of people who chose the high-saturated uniform or low-saturated uniform is demonstrated by the 2D pie graph (See Appendix E).

In group one (the upper-class restaurant), the original total number of samples was 105. Two people were deleted, which reduced the valid samples were 103. There are 76 respondents (73.8%) who chose the uniform with lower saturation to be possibly a more expensive one. And the left 27 participants (26.2%) chose the higher-saturated uniform. In group two (the café), the samples after deletion were 104. Among all the participants, 73 participants (70.2%) chose the low-saturated uniform as the uniform in the more expensive café. And the left 31 people (29.8%) chose the high-saturated uniform. In group three (the fast-food shops), the valid samples were 101 in total. Half of the participants (49.5%) chose the low-saturated uniform while another half of the participants (50.5%) chose the high-saturated uniform to be the uniform in restaurants with more expensive dishes. To visualise the descriptive data, I created a comparison table among these three groups (See Table 1).

Table 1. Consumers' perceptions of the colour saturation of uniforms in three types of restaurants

Independent Variable	Conditions	Percentage	N
Upper-class restaurant	High saturation	26.2%	27
	Low saturation	73.8%	76
Café	High saturation	29.8%	31
	Low saturation	70.2%	73
Fast-food shops	High saturation	49.5%	50
	Low saturation	50.5%	51

Hypothesis Testing

H1.a. High colour saturation will increase the consumers' perceptions of the expected expenditures of the restaurant.

H2.b. Low colour saturation will increase the consumers' perceptions of the expected expenditures of the restaurant.

I found that the high or low colour saturation did not inevitably increase or decrease the consumers' perceptions of the expected expenditures of the restaurant. Based on Table 1, most of the respondents chose the low-saturated uniform in group one and group two to be the uniform in the restaurants with more expensive dishes; half of the participants chose the same answer in group three. Hence, H1b was partially supported while no group supported H1a.

H2. The age of the consumer will influence the effect of colour saturation on consumers' perceptions.

By using the correlation coefficient, the relationship between the variable age and their perceived uniform in the more expensive restaurant as well as the price level could be shown. The results of the correlation coefficient were divided into three types of restaurants. In group one, there was no significant relationship between the age and their perceived uniform for the more expensive restaurant, the number was -

0.0351 (2 s.f.). However, the result indicated that there was a positively weak relationship between the age and their perceived price level for the more expensive restaurant. The number was 0.133 (3 s.f.).

In group two, the age and consumers' perceptions of the expected expenditure of cafés had no significant relationship. The correlation coefficients were -0.0848 (3 s.f.). Just like the result in group one, the older the respondents, the higher the price level might be estimated. The correlation coefficient was 0.241 (3 s.f.). In group three, there was a negatively weak relationship between age and consumers' perspectives toward the perceived uniform in fast-food restaurants with higher expenditure. Especially, the older the age, the less likely for consumers to choose the lower-saturated uniform to be the uniform as the cue to show their perceptions of selecting expensive dishes. The correlation coefficient was -0.204. Furthermore, the positively weak relationship demonstrated that the older the age of the respondents, the higher the price levels of the dishes in the restaurant they tended to estimate. And the coefficient was -0.208 (3 s.f.).

As a result, H2 was not proven by the gathered data. There were two possibilities when testing the relationship between age and the perceived restaurant with higher expenditure or estimated price level, no relationship or positively weak relationship. Therefore, the variable age was not the main factor that influenced consumers' selections toward the colour saturation of uniforms and their impact on their perceptions of the expected expenditures of restaurants.

H3. The type of restaurant will influence the effect of colour saturation on consumers' perceptions.

Discussing the situation in group one (upper-class restaurant) and group two (café), lower colour saturation was found to increase the consumers' perceptions of the expected expenditures of the restaurants. Nevertheless, under the situation in group three (fast food shops), colour saturation did not have any significant relationship in affecting consumers' selections toward the expected expenditures of the restaurants. Thus, H3 was proven to be correct (See Table 1).

Conclusion and Practical Implications

Analyses of data have demonstrated that the colour saturation of the uniforms would probably influence consumers' perceptions under certain circumstances such as upper-class restaurants and cafés, while it may not have any effect in other settings like fast food shops. Colours that have a lower saturation tend to give the consumers the first impression that the restaurant may have expensive dishes. Therefore, the type of the restaurant varies the influences of colour saturations on consumers' perceptions of the restaurants.

Based on the correlation coefficient, the numbers of all three groups are close to zero, which leads to no significant relationship between age and the consumers' perceptions of their choices of restaurants with higher expenditures. Meanwhile, although I did not consider gender as a co-variable in this questionnaire and give a hypothesis for the gender difference, I supported that it is a crucial issue for researchers to debate. By analysing the relationship between gender and perceptions I found a correlation coefficient close to zero. Therefore, the study shows that gender differences will not lead to different ideas of the restaurant when the colour saturations of uniforms vary, which is consistent with the results in Camgoz et al. (2002). In real life, we may hold gender stereotypes on the sensitiveness

of colours. By conducting the investigation, my thoughts on the relationship between gender and colour sensitiveness changed. However, I still agree that the gender difference may lead us to have different degrees of interest in colours and arts. I will prove it by conducting another investigation if I have the chance.

The result of the investigation has some practical implications. It provides suggestions for those restaurants to design their restaurants' owners who do not have experience in uniform design, which help them to better understand the effect of colour uses on consumers. On the one hand, those restaurant owners who attempt to profit from low expenditure dishes to attract more consumers can avoid using lower-saturated colours on their uniforms. On the other hand, the high-end restaurants for those businessmen can use lower-saturated colours to show their senses of luxury. The proper use of colours can help restaurants, especially those start-ups without the branding effect, to attract their most reliable consumers and build up the consumers' loyalty.

Conflict of Interests: the author has claimed that no conflict of interests exists.

References

1. A Brief History of Catering. (n.d.). Retrieved from TGIS: <https://www.tgiscatering.com/2013/11/04/a-brief-history-of-catering/>.
2. Atkins, P., Oddy, D. J., & Amilien, V. (2012). *The Rise of Obesity in Europe: A Twentieth Century Food History*. Ashgate Publishing, Ltd.
3. Banna, J. C., Gilliland, B., Keefe, M., & Zheng, D. (2016). Cross-cultural Comparison of Perspectives on Healthy Eating among Chinese and American Undergraduate Students. *BMC Public Health*.

4. Brunso, K., & Grunert, K. G. (1998). Cross-Cultural Similarities and Differences in Shopping for food. *Journal of Business Research*, 145-150.
5. Fairchild, M.D. (2013). *Color appearance model[M]*, Wiley.
6. Fertility. (2021, January 28). Lucky Colours in China. Retrieved from China Highlights: <https://www.chinahighlights.com/travelguide/culture/lucky-numbers-and-colors-in-chinese-culture.htm>.
7. Gorn, G. J., Chattopadhyay, A., Yi, T., & Dahi, D. W. (2015). Effects of Color as an Executional Cue in Advertising: They're in the Shade. *Management Science*, 1387-1400.
8. Gupta, D. (2014). Anthropometry and the design and production of apparel: an overview. In N. Z. Deepti Gupta, *Anthropometry, Apparel Sizing and Design* (pp. 34-66).
9. Hagtvædt, H., & Brasel, S. A. (2017). Colour Saturation Increases Perceived Produce Size. *Journal of Consumer Research*.
10. Hospitality. (n.d.). Retrieved from Wikipedia:<https://en.wikipedia.org/wiki/Hospitality>.
11. Huang, Q. (2011). A Study on the Metaphor of "Red" in Chinese Culture. *American International Journal of Contemporary Research*.
12. Kommonen, K. (2011). Narratives on Chinese Colour Culture in Business Contexts. *Cross Cultural Management*, 366-383.
13. Labrecque, L. I., & Milne, G. R. (2011). Exciting Red and Competent Blue: the Importance of Colour in Marketing. *Academy of Marketing Science*.
14. Louise Barnsbee, A. G. (2017). Cost-effectiveness. In M. C. Shaun D. Gregory, *Mechanical Circulatory and Respiratory Support* (pp. 749-772).
15. Manley, T. (2020, December 31). What is the Catering Industry? Retrieved from Delighted Cooking: <https://www.delightedcooking.com/what-is-the-catering-industry.htm>.
16. Mead, J. A., & Richerson, R. (2018). Package Colour Saturation and Food Healthfulness Perceptions. *Journal of Business Research*, 1-18.
17. Samad, R., & Aynaz, F. (2019). Regarding colour psychology principles in adventure games to enhance the sense of immersion. *Entertainment Computing*.
18. Schiller, F., Valsecchi, M., & Gegenfurtner, K. R. (2017). An Evaluation of Different Measures of Color Saturation. *Vision Research*, 117-134.
19. Symons, M. (2013). The Rise of the Restaurant and the Fate of Hospitality. *International Journal of Contemporary Hospitality Management*.
20. Tang, Z. (2014). Influencing Factors of Catering and Food Service Industry Based on Principal Component Analysis. *Advance Journal of Food Science and Technology*, 191-197.
21. Twin, A. (2020, August 17). Marketing. Retrieved from Investopedia: <https://www.investopedia.com/terms/m/marketing.asp>.
22. Vijver, F. v. (2001). Cross-cultural Research Methods. In N. J. Baltes, *International Encyclopedia of the Social & Behavioral Sciences* (pp. 2999-3003).
23. Xing, Z. (2008). Semantics and Pragmatics of Color Terms in Chinese. In Z. Xing, *Studies of Chinese Linguistics*. Hong Kong: HKUP.
24. York, E. (2019, March 21). Average Income Tends to Rise with Age. Retrieved from Tax Foundation:<https://taxfoundation.org/average-income-age/>.