THE EFFECT OF FREE SHIPPING METHOD ON

CONSUMERS' ONLINE EVALUATION AND

PURCHASE DECISION

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ABSTRACT

This paper examines how online consumers respond to the different free shipping methods. We focus on two of the most prevalent free shipping method in Taiwan, FSQ (Free Shipping Quantity) and threshold-based free shipping. In Study1, we first demonstrate that online consumers have a significant difference on purchase intention and offer evaluation to the two different free shipping methods. Second, we demonstrate the interaction effects on purchase intention and offer evaluation. When the product price is in a high level, FSQ generates higher purchase intention and offer evaluation than threshold-based free shipping. In Study2, we demonstrate the interaction effects on purchase intention, offer evaluation. When pick-up method has only one choice, FSQ generates higher purchase intention and offer evaluation than threshold-based free shipping.

Keywords: Shipping fees; Free shipping; FSQ (Free Shipping Quantity); Threshold-based free shipping; Online shopping

I.   INTRODUCTION

With the growth of e-commerce, online shopping maket has grown rapidly. According to Market Intelligence & Consulting Institute(MIC) in Taiwan, online shopping market reached NT $ 430 billion in 2011, an increase of about 20% over 2010. When it comes to online shopping, it also underlines the importance of shipping fees. From the firm's perspective, it is important but hard to design a shipping method to recover delivery cost and to

attract customers [1]. From the consumer's standpoint, shipping fees are a main reason why consumers decide to give up purchasing online because they have to pay additional fees. In addition, the survey data from Kantar company shows that online consumers prefer to buy more products when offering free shipping. Although the shipping fees are important to the firms and consumers, only very sparse literature focus on shipping fee [1][3][4]. Further, the existing literatures do not compare FSQ (Free Shipping Quantity) to threshold-based free shipping.

In online shopping market, many firms are increasingly providing free shipping to consumers when online consumers exceed the quantity or dollar threshold set by online firms. In this paper, we focus on two common online free shipping method in Taiwan, FSQ (Free Shipping Quantity) and threshold-based free shipping. This paper attempts to fill the research gap and contribute to the handful studies by examing the two common free shipping method- FSQ and threshold-based free shippng method With FSQ method, retailers waive the shipping fee when consumers reached a specific quantity set by retailers, but charge a fixed fee otherwise. With threshold-based free shippng method, retailers waive the shipping fee when consumers reached a specific dollar amount by retailers, but charge a fixed shipping fee otherwise.

The primary purpose of this paper is to experimentally examine how online consumers evaluate and their respond to the two different free shipping methods. In addition, we consider other factors that may affect the effect of free shipping method on consumers' evaluations and choice, these factors include product price level and pick-up methods.

II.   LITERATURE REVIEW

A.   Free Shipping Method

In our research, free shipping method is when consumers reached a quantity or dollar threshold, specified by retailers, consumers are offered free shipping. Otherwise, they may charge a fixed shipping fee. In this research, we use two common free shipping methods, FSQ (Free Shipping Quantity) and threshold-based free shipping as our investigative objects.

The previous research has examined different shipping fee methods. The previous research has examined the effects of free shipping and threshold-based free shipping [3]. Koukova et al. (2012) has compared two different shipping fee structures, flat rate shipping and threshold-based free shipping [1]. In this paper, our focus is on the two prevalent online free shipping methods.

While previous research indicated that quantitative information can appear in alternative units [5], for instance, date can be specified in months and in days, and prices can be presented in different currencies [6]. In our

research, under equally price of the product (e.g., NT$250 per cloth), we use 2 clothes as the quantity threshold and NT$500 as the dollar threshold.

The previous research demonstrated a change in the unit in which quantitative information is provided affects consumer preferences, evaluations and choices [2]. According to the unit effect, consumers tend to ignore the unit and just focus on the number instead. From the literature of theunit effect, we can assume that the number of quantity threshold "2" (FSQ method) is smaller than dollar threshold "1000" (threshold based free shipping), and we propose the hypotheses:

H1a: Consumers will have a higher purchase intention when an online offer is with FSQ method than an online offer with threshold-based free shipping.

H1b: Consumers will have a higher offer evaluation when an online offer is with FSQ method than an online offer with threshold-based free shipping.

B.   Free Shipping Method And Price Level

Monroe (2011) proposed that people have upper and lower limits of price acceptability for a product, and price sensitivity is a method to measure and evaluate buyers' differential price thresholds [8]. Consumers have different price acceptability and price sensitivity, and these differences may lead to distinct difference on the free shipping method. How do consumers judge the free shipping method? The product price level might influence the purchase intention and offer evaluation for the product.

From the literature above, we would like to know whether price level will influence the free shipping method. We propose free shipping method presented in different units can influence consumers' decision and evaluation. The product price level may not only affect whether consumers can easily reach the free shipping quantity or dollar threshold but also may influence consumers' decisions and evaluation. Hence, we want to test if the following hypotheses are supported:

H2a: The free shipping method and price level have an interaction effect on purchase intention.

H2b: The free shipping method and price level have an interaction effect on offer evaluation.

C.   Pick-up method

It is common to suppose that the more choice, the better. [14] According to previous research on choices, the research indicated that some important theories in social psychology including attribution theory, dissonance theory, all presume that perception of choices will have strong effects.[15] Moreover, previous studies have shown that the number of options affect the evaluation and selection, this indicate that when making choices become complex, people tend to rely on heuristics to simply their decision-making processes. [16][17] In Taiwan's online shopping market, we can see the retailers provide different pick-up methods to customers. The pick-up methods include pick-up from convenience stores, home delivery, and pick-up from post offices. We use one pick-up method and many pick-up methods as our investigative objects.

D.   Free Shipping Method And Pick-up Method

In Taiwan's online shopping market, we can find that many online retailers provide free shipping to customers when reach a specific quantity or dollar threshold. However, some online retailers restrict customers to choose a

specific pick-up method to get the free shipping, but some retailers do not. We want to know whether pick-up method will influence the free shipping method. So we want to test if the following hypotheses are supported.

H3a: The free shipping method and pick-up method have an interaction effect on purchase intention.
H3b: The free shipping method and pick-up method have an interaction effect on offer evaluation.

E.   Conceptual Framework

Based on the literature background, we developed the research model of study1 and study2.The frameworks were shown in Fig. 1 and 2.
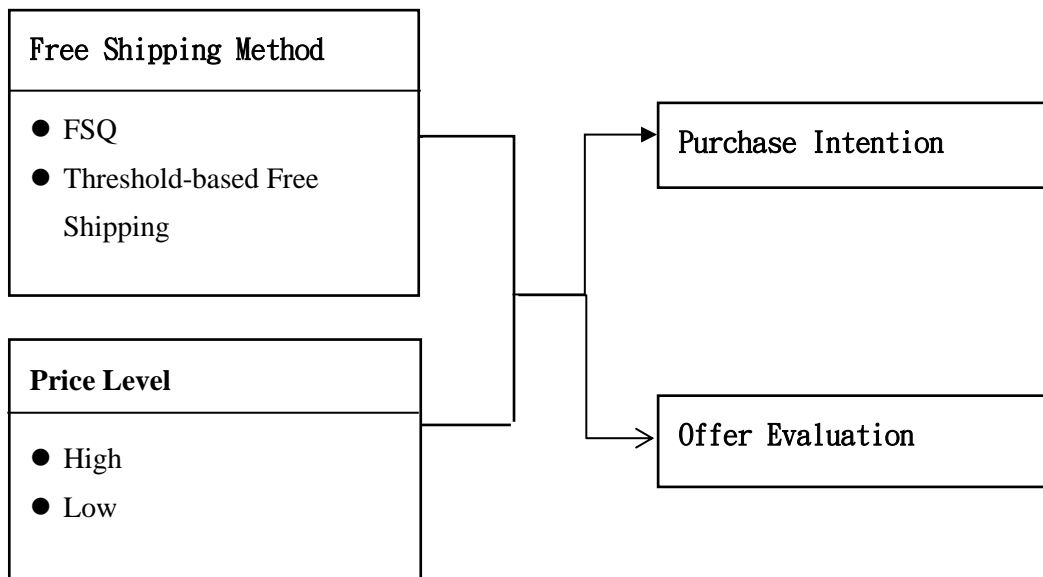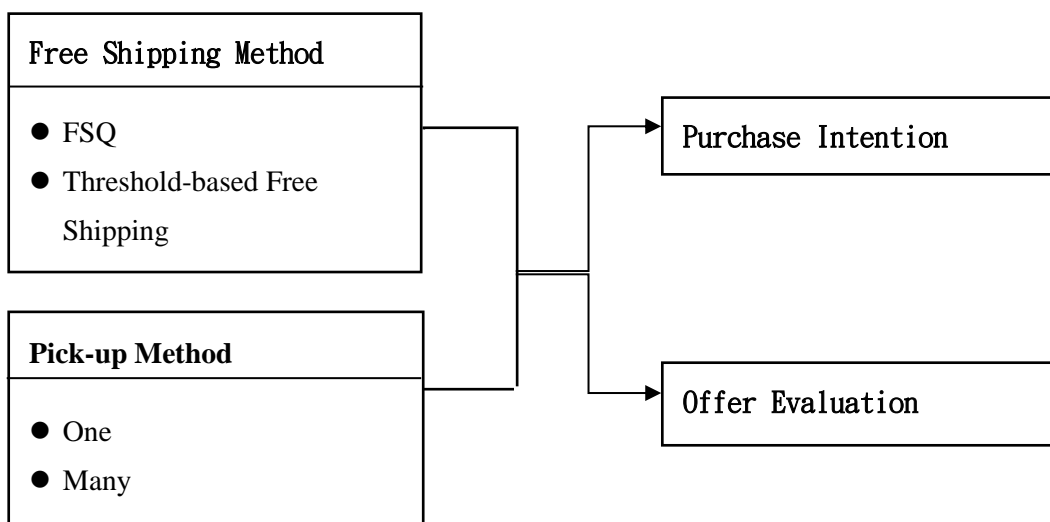

Figure1. Conceptual framework of the research (Study1)

Figure2. Conceptual framework of the research (Study2)

III. METHODOLOGY

To investigate the above issues of the free shipping methods, we conduct two studies in this research. Each study has its own research design as explained in the following. In all conditions, subjects first read an online shopping scenario. They were asked to imagine that they were considering buying clothes on the online website. After reading the scenario, the participants responded the questions on the questionnaire.

Study1

A. Pretest

Before the experiment, we conduct a pretest to ask the subjects to answer the following questions, how much for one cloth is high to you? How much for one cloth is low to you? The result of the pretest decided the price level in our story scenario. According to the answers from our subjects, the price NT$750 for one cloth is high, and the price NT$250 for one cloth is low.

B. Research Design

This study employed a 2 (free shipping method: FSQ, threshold based free shipping) × 2 (price level: high, low) between-subjects experimental design. The experimental design is shown in TABLE I.

We use a role-playing approach. We let the participants randomly assign to one situation, and read a written scenario describing a specific situation. The situation was that consumers were attracted by the free shipping method from a online clothing retail store, which offered a free shipping when the consumers buy specific threshold at a time, and asked their evaluations and decisions.

Participants were guided to a certain story scenario, and pretend they were the consumers of that story condition. The scenario in the FSQ with a high price level NT$800 per cloth is "Buy 2, free shipping", and with a threshold-based free shipping is "Buy NT$1600, free shipping". In the FSQ with a low price level NT$250 per cloth is "Buy 2, free shipping", and with threshold-based free shipping is "Buy NT$500, free shipping". A photographical image was presented to the subjects in an artificial online shopping scenario.

TABLE I. EXPERIMENTAL DESIGN

		Free shipping method	
		FSQ	Threshold-based free shipping
Price level	High	Situation1	Situation2
	Low	Situation3	Situation4

C. Procedure

A total of 120 undergraduate and graduate students in National Chung Hsing University participated in the study. Participants were required to imagine that they were shopping on the Internet for the clothes. After they were exposed to the free shipping method and product price, subjects were asked to complete the questionnaire. The valid sample size was 30 in every situation. The statistics of sample characteristics show that 40% of the respondents were female and 60% were male and age from 20 to 25 years old.

D. Measures

The survey use a seven-point Likert scale anchored from "very low" to "very high" to evaluate the variables. All measures were summarized in TABLE II. In addition, we collected the possible covariates (the attitude to the product images) that may interfere with the result.

TABLE II. MEASURED ITEMS

Variables	Measured Items	Reliability	References
Purchase intention	1. The probability that I would consider buying this product is high. 2. The likelihood that I would purchase this product is high.	r=.883	Palazon & Delgado-Ballester, (2009)
Offer evaluation	The online store's offer is attractive/desirable/reasonable	α=.865	Koukova, Srivastava, & Steul-Fischer, (2012)

E. Analyses and Results

A multivariate analysis of covariance (MANCOVA) was used to test our hypotheses. The MANCOVA included purchase intention and offer evaluation as dependent measures, the attitude to the product images as covariates, and the free shipping method, price level as the independent variables.

The result shows that free shipping method have a significant main effect on purchase intention (F=9.912, p <.05) and offer evaluation (F=8.542, p <.05). Hence, H1a and H1b were supported.

The interaction effect between the two independent variables (free shipping method, price level) on purchase intention (F=4.805, p <.05) and offer evaluation (F=5.808, p <.05) are significant, shown in Fig.3 and 4.
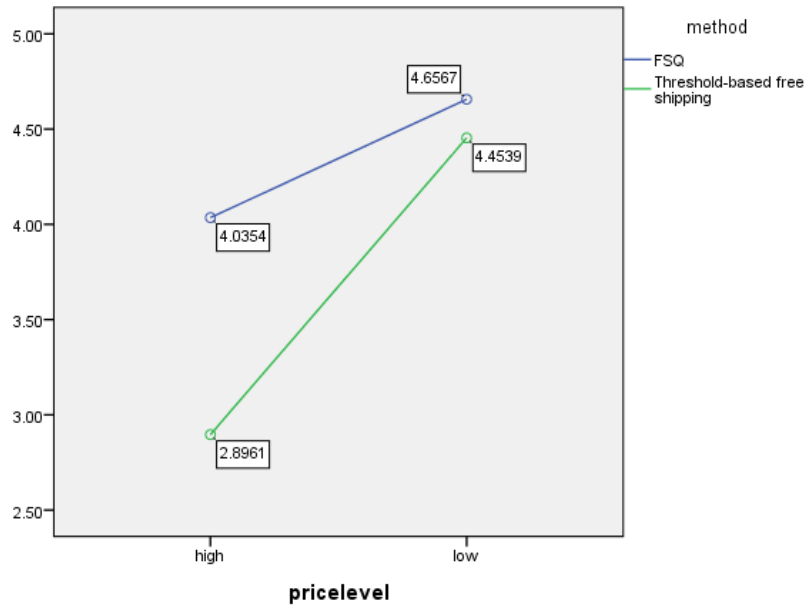
Figure3. Interaction plot of free shipping method and price level for purchase intention
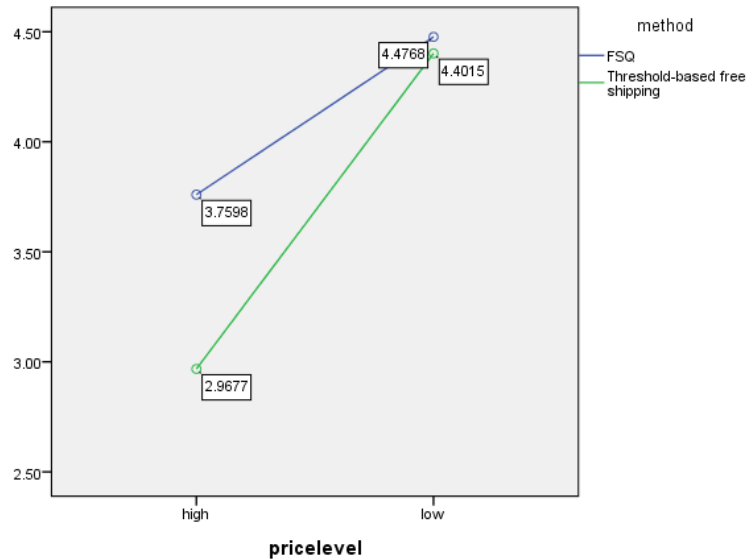

Figure4. Interaction plot of free shipping method and price level for offer evaluation

When the price level of the product is high, FSQ method generates higher purchase intention than threshold based free shipping (M_{FSQ}=4.04, $M_{Threshold}$=2.90). For the offer evaluation, FSQ method also generates higher offer evaluation than threshold based free shipping (M_{FSQ}=3.76, $M_{Threshold}$=2.97). Hence, H2a and H2b were supported.

Study2

A. Research Design

This study employed a 2 (free shipping method: FSQ, threshold based free shipping) × 2 (pick-up method: one, many) between-subjects experimental design. The experimental design is shown in TABLE III.

We use a role-playing approach. We let the participants randomly assign to one situation, and read a written scenario describing a specific situation. The situation was that consumers were attracted by the free shipping method from an online clothing retail store, which offered free shipping when the consumers buy specific threshold at a time, and asked their evaluations and decisions.

Participants were guided to a certain story scenario, and pretend they were the consumers of that story condition. The scenario in the FSQ with a one pick-up method is "Buy 2, free shipping" and provide only one pick-up method (convenience stores, home delivery, or post office) and with threshold-based free shipping is "Buy NT$1200, free shipping" and provide only one pick-up method (convenience stores, home delivery, or post office). In the FSQ with many pick-up methods is "Buy 2, free shipping" and provide three pick-up methods simultaneously, and with threshold-based free shipping with many pick-up methods is "Buy NT$1200, free shipping" and provide three pick-up methods simultaneously. A photographical image was presented to the subjects in an artificial online shopping scenario.

TABLE III. EXPERIMENTAL DESIGN

		Free shipping method	
		FSQ	Threshold-based free shipping
Pick-up Method	One	Situation1	Situation2
	Many	Situation3	Situation4

B. Procedure

A total of 283 participants who have online purchase experiences participated in the study. Participants were required to imagine that they were shopping on the Internet for the clothes. After they were exposed to the free shipping method and pick-up methods, subjects were asked to complete the questionnaire. The valid sample size was ranging from 33 – 36 in every situation. The statistics of sample characteristics show that 54% of the respondents were female and 46% were male and age from 19 to 36 years old.

C. Measures

The survey use a seven-point Likert scale anchored from "very low" to "very high" to evaluate the variables. All measures were summarized in TABLE II. In addition, we collected the possible covariates (the attitude to the product images, purchase dollar) that may interfere with the result.

D. Analyses and Results

A multivariate analysis of covariance (MANCOVA) was used to test our hypotheses. The MANCOVA included purchase intention and offer evaluation as dependent measures, the attitude to the product images and purchase dollar as covariates, and the free shipping method, pick-up method as the independent variables.

The result shows that free shipping method do not have a significant main effect on offer evaluation ($F=2.279$, $p >.05$). However, free shipping method has a marginal significant main effect on purchase intention ($F=3.398$, $p <.10$).Hence, H1a was supported, H1b was not supported. The interaction effect between the two independent variables (free shipping method, pick-up method) on purchase intention ($F=5.446$, $p <.05$), offer evaluation ($F=4.255$, $p <.05$) are significant, shown in Fig.6, 7.

When the pick-up method has only one choice, FSQ method generates higher purchase intention than threshold based free shipping ($M_{FSQ}=4.97$, $M_{Threshold}=4.46$). For the offer evaluation, FSQ method also generates higher offer evaluation than threshold based free shipping ($M_{FSQ}=4.56$, $M_{Threshold}=4.25$). Hence, H3a, H3b were supported.
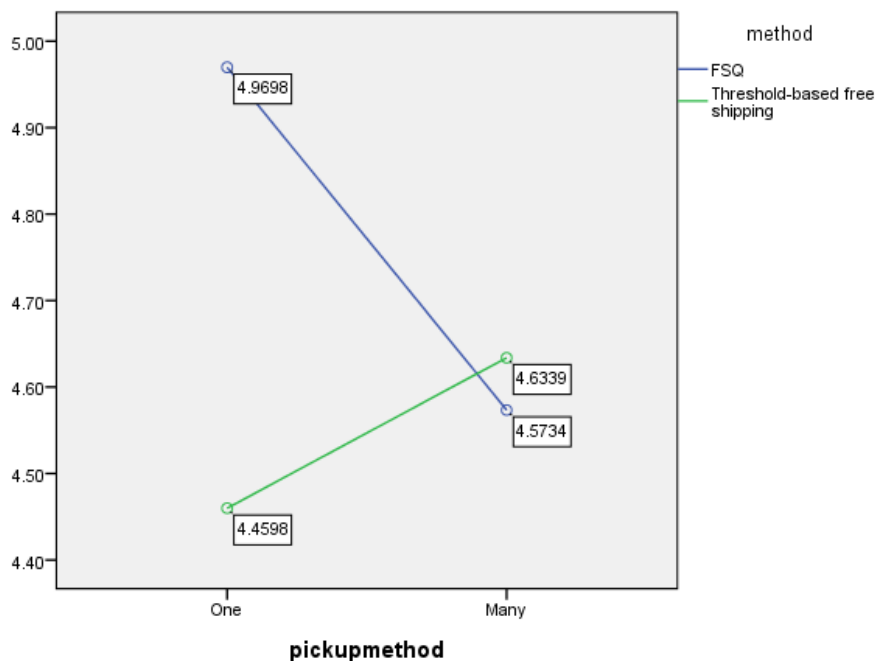

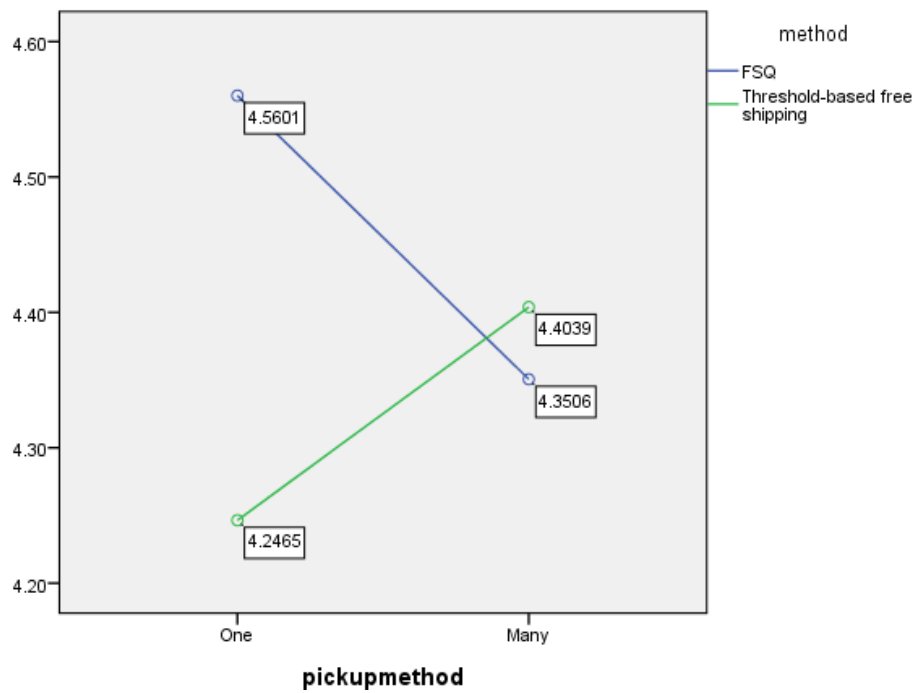Figure6. Interaction plot of free shipping method and pick-up method for purchase intention

Figure7. Interaction plot of free shipping method and pick-up method for offer evaluation

IV. CONCLUSIONS

Offering free shipping method when consumers reach the quantity or dollar threshold is a common method used by retailers, coupled with limited research on shipping fee and comparison between two free shipping methods. The main purpose of this research is to experimentally examine how online consumers evaluate and respond to the two different free shipping methods and explore other factors that may affect consumers' decisions.

The result of study 1 indicate that the free shipping method have a significant main effect on purchase intention and offer evaluation. We also find out that the two indepentdent variables have an interaction effect on purchase intention and offer evaluation. When the price level product of product is high, FSQ generates higher purchase intention and offer evaluation than threshold based free shipping. To sum up, online consumers have different evaluation and purchase intention to the free shipping method, and the product price may impact the product evaluation and purchase decisions. The result of study 2 indicate that the interaction effect on purchase intention, offer evaluation. When pick-up method has only one choice, FSQ generates higher purchase intention and offer evaluation than threshold based free shipping.

The findings have some managerial implications. These findings provide some guidelines to online retailers to use the most effective free shipping method to attractive online consumers. Clearly, there are some limitations of this research. First, we use the experimental design method to have a better of the variables. The participants require to fit in the written scenarios. Second, because of time and cost considerations, this research adopted the convenience sampling, respondents were graduate and undergratude students, it can not represent the real situation.

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