Impulsive Purchase, Approach–Avoidance Effect, Emotional Account Influence in Online-to-Offline Services

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Abstract—Taiwanese retailers and E-commerce have been actively promoting O2O (online-to-offline) services. Consumers compare specifications, functions, prices, and discounts when using the online service to shop at a physical store. O2O has successfully transformed into a consumer shopping experience. This study mainly investigates the effect of impulsive purchase, approach–avoidance effect, emotional account, as well as brand image, on sales in O2O services. The results of evidence-based analysis show that impulsive purchase positively affects emotional account and trust. The approach–avoidance effect has a positive effect on emotional account, which is mediator between trust and the approach–avoidance effect. This positively affects a customer's recommendation intention. However, brand image affects the results by moderating emotional account and trust.

Index Terms—impulsive purchase, approach–avoidance related effect, emotional account, brand image, emotional accounts, trust

I. INTRODUCTION

Research is primarily focused on multichannel studies, and seldom on the integration of virtuality and reality in O2O. Scholars commonly see shopping behavior across online and offline Channels [1] or examine the drivers of substitution competitive advantage between online and offline retail channels. [2]. Dinner et al. [3] showed through evidence-based models that advertisements indeed create a mutual effect between the online and offline. While the effects of online advertisement do reach the physical store, prior research does not explain the role innovative financial products in it.

Chien and Chen [4] studied the sales of innovative financial products and believed that, during impulsive purchase, consumers exceed their original mental budget, increasing the relationship between mental budgeting and willingness to purchase. They also investigated the influence of impulsive and unplanned purchases on financial products. However, “mental budgeting” and “mental account” need further investigation.

Levav and Mcgraw [5] proposed the concept of emotional account, wherein positive and negative emotions affect purchase behavior when consumers evaluate products. Eder [6] also believes impulse purchase and the approach–avoidance effect interferes with emotional account. Thus, we investigate the role of emotional account theory.

According to Thaler [7], consumers are not rational. They make irrational decisions because of emotional account. Scholars often use “emotional account” to explain and verify many consumer behaviors related to budgets, costs, and purchase. One of them is the establishment and implementation of mental budgeting [8]-[10].

Consumers tend to categorize their budgets to control monthly costs. For example, there might be a budget for clothing, for transportation, for food, for entertainment, and so forth. These mental budget accounts are not connected, so consumers can achieve self-control and avoid spending excessive money on a certain category, which would lead to a decrease in the money spent on other categories [8], [7]. However, Stilley et al. [11] considered the uncertainty of mental budget accounts, believing that consumers change their mental budget when they have a higher salary and only resist purchasing when the cost eventually exceeds their budget. Combined with Levav and Mcgraw’s [5] emotional account and Eder’s [6] conclusions, we expand this concept to consider mental budget a variable. Consumers bring about an interfering effect toward emotional account because of impulsive purchase and the approach–avoidance effect, which affects trust at the same time. Scholars have not investigated this as thoroughly, and have neglected to ascertain whether or not impulsive purchase affects mental budgeting. Hence, we focus on the effect of impulsive purchase and the approach–avoidance effect on emotional account.
In conclusion, the main concept of this study is emotional account. We use O2O to investigate the interference effect both impulsive purchase and the approach–avoidance effect have on emotional account when consumers find out more about a financial service and thus change their trust attitude.

II. LITERATURE REVIEW AND HYPOTHESES

A. Effect of Impulsive Purchases

The decision underlying impulsive purchase behavior still needs investigation, as it lacks a precise definition. Some scholars see impulsive purchase as an unplanned purchase, while others categorize it as irrational behavior. There are also those who have proposed that impulse is a psychological characteristic that arises from highly complex operational processes. This impulse characteristic is closely related to personality development, lifestyle, and emotional response, and shows in consumer characteristic is closely related to personality development, lifestyle, and emotional response, and shows in consumer behavior [12], such as the evaluation of product lifestyle, and emotional response, and shows in consumer behavior [12], such as the evaluation of product information and speed of purchase decisions.

Prior research on unplanned purchase behavior mainly used Stern’s definition [13]. When consumers receive external stimulation (such as novel products or sales), it triggers a need that results in an immediate, impulsive response, which seldom takes purchase consequences into consideration. This is irrational purchase behavior.

Weinberg and Gottwald consider impulsive purchase as a type of hunger arising from an emotional response that leads to immediate purchase behavior [14].

Rook defined impulsive purchase as a sudden, strong, irresistible force that makes consumers purchase a product [15]. DeSarbo believes consumers deal with stress or anxiety through impulsive purchasing, and thus indulge in its experience [16]. He divides impulsive purchasers into two groups: external and internal compulsive buying groups. Beatty and Ferrell defined it as consumers purchasing a product without a tendency or plan to purchase before the purchase behavior [17]. When facing the product, a sudden, irresistible force triggers a desire for the products in the consumer. This behavior is spontaneous, and occurs alongside a lack of thorough consideration.

Considering the discussion above, we use Beatty and Ferrell’s definition of impulsive purchase [17], and reduce it to a single-frame surface. We define impulsive purchase as consumers exhibiting purchasing behavior without first having any tendency or plan to purchase the product. We also added the view of Stern [13], wherein external stimulation triggers consumers to develop a need that results in immediate, impulsive purchase behavior.

Hence,

- H1a: Impulsive purchase influences emotional account and trust positively.
- H1b: Impulsive purchase influences emotional account positively.
- H1c: Impulsive purchase influences trust positively.

B. Relationship between Approach–Avoidance Effect and Emotional Account

Riquelme and Roman compared the feelings of online and offline customers, and realized a significant difference in their characteristics, especially in cognitive behavior [18]. Consumers have many different motives when making a purchase decision—when these motives cannot be satisfied at the same time, or are incompatible, a motivation conflict arises. There are three types of motivation conflict: approach–approach conflict (that is, a choice between two good options, similar to the saying “you can’t have the cake and eat it too”), avoidance–avoidance conflict (a choice between two bad options, similar to the saying “the lesser of the two evils”), and approach–avoidance conflict (looking forward to it, but being afraid at the same time).

Chien and Chen discussed the positive effect of consumer involvement, supplier involvement, and interdepartmental integration on the launch of new products in the financial service industry [4]. Stilley et al. mentions the uncertainty of emotional account, believing that consumers increase their mental budget with salary rise and only resist purchasing a product when the price is over their budget [11]. Finally, Levav and Mcgraw (2009) proposed the concept of emotional account [5], while Eder [6] agrees that impulsive purchase and the approach–avoidance effect interfere with emotional account. Therefore, we extend this concept believing that mental budgets are not fixed. Thus, impulsive purchase and the approach–avoidance effect interferes with emotional account. Hence,

- H2: The approach–avoidance effect affects emotional account positively.

C. Mediator Effect of Emotional Account

Thaler believes that individuals, families, and enterprises all “obviously” or “subconsciously” have an emotional account system [7]. People unconsciously distribute money into different “accounts” for management in their minds, with different methods and rules of accounting and psychological calculation that correspond to different emotional accounts. People often disobey the fundamental rule of “rational economic participant” assumption in traditional economic theories when making decisions because of the emotional account. This is why consumers’ trust increases with their mental budget. Milkman and Beshears noted the influence an unexpected income might have on consumers’ expenses [19]. When other variables are controlled, it has been discovered that, when people who do not normally shop at grocery stores are given a coupon of US$ 10, their expenses on food increase by US$ 1.59. Therefore, we hypothesize that trust levels increase with the increase in mental budget. Combined with Levav and Mcgraw’s [5] “emotional account”, we hypothesize that emotional account is the mediator between the approach–avoidance effect and trust. Hence,
• **H$_3$**: Emotional account is a mediator between the approach–avoidance effect and trust.

**D. Moderating Effect of Brand Image on Emotional Account and Trust**

Brand image is crucial because people are more willing to purchase products that they are familiar with or products that have a positive brand image. A positive brand image gives people a sense of comfort and reliability. To consumers, brand image is an important acknowledgment about the product. It also creates positive brand asset [20] and is viewed as an important source of information. Consumers use brand image to infer the quality of the product or the service, which further results in a motivation to make a purchase.

Dobni and Zinkhan (1990) see brand image as the brand concept that consumers have, which is mostly subjective and formed by either rational or emotional interpretations [21]. According to Biel [22], brand image is built on three affiliated images: 1) image of the product or the service provider, 2) image of the product or user of the service, and 3) image of the product or the service itself.

Further, Keller notes that the brand image reflects associations with the known brand in consumers’ memory [23]. Therefore, brand image is a connection between brand association and brand memory that gives meaning to consumers. In Gobe’s study, the main source of consumer perception and feeling is the brand image corporations give them, called corporation brand image [24], while Temporal and Lee [25] see it as a consumer’s overall feeling or opinion of the brand.

Brand image is also the way consumers get to know more about the brand [26]. In retail literature, it is commonly thought that retailers’ image affects consumer behavior intention, patronage to a shop, and loyalty [27], [28]. Hence, it is crucial for the success of a store to develop and convey an attractive and consistent store image [29]. Research on brand image provides a suitable basis to understand the importance of store image in the retail channel [30].

Our measurement of brand image mainly refers to Badrinarayanan et al. [30]—that is, brand image has an interference effect on emotional account and trust. Thence,  

• **H$_4$**: Brand image has an interference effect on emotional account and trust.

**III. RESEARCH MODEL**

We use the theoretical basis of “stimulation–emotional account–response” (S–O–R), assuming that a new financial product environment is the stimulation (S), including clues that affect emotional account, (O), resulting in the approach–avoidance effect (R) [31]. At the same time, there is a two-way interaction between acknowledgment and emotion. Acknowledgment developed from environmental stimulation affects emotion, while emotion affects acknowledgment [32]. Lazarus also believes that, when a person is evaluating a service environment, their acknowledgment reacts prior to their emotions [33]. Fig. 1 presents the theoretical framework of this study.

**IV. FINDINGS**

**A. Samplings**

We distributed 100 questionnaires through a pilot test, and used the Cronbach’s $\alpha$ to test the reliability of the questionnaire, with all five facets of the questionnaire having an $\alpha$ value higher than 0.7. For the setting of the study, we first described a shopping experience of using a mobile app to make a purchase at a physical store, guiding consumers into the setting of an innovative financial paying method before asking them questions.

We collected data through an Internet-based questionnaire, using Google forms (https://www.google.com.tw/intl/zh-TW/forms/about/) to create the questionnaire, and put it on the most-used social website, which according to the report in 2015 by Central News Agency was Facebook and Line (http://www.cna.com.tw/postwrite/Detail/179665.aspx#.Vumm-xJ97dQ). We collected questionnaires from 23 February to 01 April 2016. Eight hundred valid questionnaires were collected. Table I presents the descriptive statistics of the information from the valid questionnaires.

The proportion of male and female is 38% (310 respondents) and 62% (490 人), respectively. Age-wise, most subjects were 19–23 years of age, accounting for 400 respondents, and 50% of the questionnaires. The following age groups followed: 24–35 years (179 respondents), 36–45 years (77 respondents), under-18 years (71 respondents), 46–55 years (66 respondents), and over-55 years (11 respondents). Occupation-wise, most respondents were students (56%), followed by those in the service industry (16.2%), manufacturing industry (7.8%), others (7.7%), government-related jobs (5.6%), and freelancers (5.1%).

**TABLE I**

| Measure          | Items | Frequency | Percent |
|------------------|-------|-----------|---------|
| Age              |       |           |         |
| Gender           |       |           |         |
| Male             | 310   | 38%       |         |
| Female           | 490   | 62%       |         |
| <18 years old    | 71    | 8%        |         |
| 19–23 years old  | 400   | 50%       |         |
| 24–35 years old  | 179   | 22%       |         |
| 36–45 years old  | 70    | 8%        |         |
| 46–55 years old  | 60    | 5%        |         |
| >55 years old    | 10    | 6%        |         |
| Mobile payment app used |       |           |         |
| App Store        | 272   | 33.8%     |         |
| Google Play      | 511   | 64.1%     |         |
| Other            | 17    | 2.1%      |         |
B. Reliability Analysis

The main purpose of reliability analysis was to confirm the internal consistency of the scales of the constructs. We used the Cronbach’s α value for the examination. Cronbach’s α normally ranges from 0 to 1; the closer it is to 1, the higher the reliability. As we can see from Table II, nearly all facets of the study are higher than 0.7, indicating high reliability.

| Constructs          | Items                                                                 | α    |
|---------------------|----------------------------------------------------------------------|------|
| Impulsive purchase  | I often purchase products that are on sale when I am browsing.       | 0.738|
|                     | Price promotions are usually the main reason that attract me to make a purchase. |      |
|                     | I make decisions on whether to purchase the product according to usage experience of others. |      |
| Approach-avoidance effect | Innovative financial paying methods make me feel guaranteed. | 0.760|
|                     | Innovative financial paying methods seem to be well planned.         |      |
|                     | Innovative financial paying methods make me feel unsafe.             |      |
| Emotional account   | I see this purchase as a right choice.                                | 0.765|
|                     | I see this purchase as valuable.                                     |      |
|                     | I see this purchase as interesting.                                  |      |
| Trust               | Overall, I trust financial products of “innovative financial paying methods” are trustworthy. | 0.798|
|                     | Overall, I think financial products of “innovative financial paying methods” are reliable. |      |
|                     | I am willing to recommend to my friends and family financial products of “innovative financial paying methods”. |      |
| Brand image         | I think the image of physical stores and online stores is consistent. | 0.806|
|                     | I think the pros and cons of the service of physical stores and online stores are similar. |      |
|                     | I think physical stores are just as representative as online stores. |      |
|                     | I think physical stores and online stores are of the same type.      |      |

C. Confirmatory Factor Analysis

Before structure equation modeling analysis, we first used confirmatory factor analysis to inspect whether or not the measurable variables in the model can accurately measure the potential variables in the study. According to Anderson and Gerbing [34], the results of the two-stage testing method are more meaningful than that of the one-stage testing method.

In Squared Multiple Correlation (SMC), the data represents the degree of influence the potential variable has on individual measuring variables. A higher value of SMC means a higher value of reliability. Taylor and Todd [35] suggested that, when measuring the mode, a SMC value higher than 0.4 is sufficient. Thus, we eliminated all items in the model that did not reach the criteria to modify the study model. Table III shows that, after modification, the reliability of individual items shows that the factor loadings of the constructs are within the range of 0.64–0.85. All question items have a value higher than 0.5, which indicates good reliability. All question items have an SMC value within the range of 0.508–0.728—that is, all are higher than 0.5.

| TABLE III. RESULTS OF RELIABILITY |
|-------------------------------|---------------------------------|------|
| Construct (N=483)             | No.                             | Factor loading | SMC  | Average variance extracted | Composition reliability |
| Impulsive purchase            | 1                               | 0.72           | 0.523| 0.5010                      | 0.7501                 |
|                               | 2                               | 0.71           | 0.543|                             |                        |
|                               | 3                               | 0.67           | 0.526|                             |                        |
| Approach-avoidance effect     | 1                               | 0.74           | 0.585| 0.5067                      | 0.7540                 |
|                               | 2                               | 0.73           | 0.538|                             |                        |
|                               | 3                               | 0.68           | 0.512|                             |                        |
| Emotional account             | 1                               | 0.76           | 0.511| 0.5093                      | 0.7567                 |
|                               | 2                               | 0.74           | 0.547|                             |                        |
|                               | 3                               | 0.69           | 0.577|                             |                        |
| Trust                         | 1                               | 0.77           | 0.593| 0.5209                      | 0.8123                 |
|                               | 2                               | 0.64           | 0.508|                             |                        |
|                               | 3                               | 0.72           | 0.520|                             |                        |
|                               | 4                               | 0.75           | 0.565|                             |                        |
| Brand image                   | 1                               | 0.77           | 0.590| 0.5128                      | 0.8076                 |
|                               | 2                               | 0.72           | 0.512|                             |                        |
|                               | 3                               | 0.66           | 0.536|                             |                        |
|                               | 4                               | 0.71           | 0.498|                             |                        |

The Average of Variance Extracted (AVE) mainly examines the average variance explanation ability that every measurement variable has toward potential variables. When the AVE is higher, potential variables have a higher variability and convergent validity, which regular differentiation standards require it to be higher than 0.5. Table III shows the AVE value to be within the range of 0.501–0.663, with the average being higher than 0.5. The composition reliability mainly examines the quality standard of potential variables. Higher composition reliability means higher extent of measurement variable that is able to represent potential variables. Usually, composition reliability has to be above 0.6 to indicate a higher internal quality of the mode. This study has a composition value between 0.7501–0.8547 for each facet of the mode—that is, all are higher than 0.6. This tells us that this study has good facets.

D. Model Testing

After verification factor analysis, we examined the suitability of the hypothesis and models using structure equation modeling. Table IV shows the RMSEA, GFI, and AGFI, which represent the norm of absolute suitability. After arrangement, the table shows that RMSEA=0.026, GFI=0.922, and AGFI=0.901—that is, all are higher than the suitability standards when compared with the standard value of suitability. The suitability of the remaining norms is higher than the standard, showing that the structure of this study has good suitability [36].

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TABLE IV. FIT INDICES FOR MEASUREMENT AND STRUCTURE MODEL

| Test Statistic | Fit Indices | Measurement Model | Good Model Fit (Y/N) |
|----------------|-------------|-------------------|---------------------|
| **Overall model fit** |             |                   |                     |
| RMSEA           | <0.08       | 0.026             | Y                   |
| GFI             | >0.9        | 0.922             | Y                   |
| AGFI            | >0.8        | 0.901             | Y                   |
| **Incremental fit index** |             |                   |                     |
| NFI             | >0.9        | 0.922             | Y                   |
| RFI             | >0.9        | 0.910             | Y                   |
| IRI             | >0.9        | 0.951             | Y                   |
| TLI             | >0.9        | 0.944             | Y                   |
| CF1             | >0.9        | 0.921             | Y                   |
| X2/df           | <3.00       | 2.001             | Y                   |

We used structure equation modeling to examine the causal relationship and path coefficient between the variables after the suitability of the model has reached standards. The results of the statistical analysis using AMOS 7.0 are shown in Table V.

TABLE V. EXAMINATION OF HYPOTHESIS

| Hypothesis | Path coefficient | Composition reliability | P-value | Verification results |
|------------|------------------|--------------------------|---------|----------------------|
| H1         | 0.521            | 7.418                    | ***     | Y                    |
| H5a        | 0.507            | 9.425                    | ***     | Y                    |
| H5b        | 0.526            | 9.741                    | ***     | Y                    |
| H5c        | 0.446            | 5.514                    | ***     | Y                    |
| H5         | 0.225            | 2.841                    | 0.017*  | Y                    |

*: P<0.05 **: P<0.01 ***: P<0.001
H1: Impulsive purchase influences emotional account and trust positively.
H5a: Impulsive purchase influences emotional account positively.
H5b: Impulsive purchase influences trust positively.
H5c: The approach–avoidance effect affects emotional account positively.
H5: Emotional account is a mediator between the approach–avoidance effect and trust.

The results above show that all hypotheses can be established. Impulsive purchase has a positive effect on emotional account and trust—that is, impulsive purchase does assist emotional account, and can also increase trust. Therefore, H5a and H5b hold. Further, the approach–avoidance effect positively affects emotional account, which is similar to Lazarus [33], according to whom an individual’s knowledge acts before emotions do. Knowledge activities have an influence on emotions, and knowledge activities that are hard to detect enter emotional responses and form a holistic aspect. In other words, the knowledge process plays an important role in consumers’ internal evaluation. Therefore, H5c holds.

If consumers have a positive feeling toward service providers, then it is predicted that consumers will be more willing to share or recommend that service provider. Thus, emotional account mediates approach–avoidance effect and trust, which positively affects consumers’ willingness to recommend. Therefore, H5 holds.

E. Moderating Effect of Brand Image

To inspect whether brand images hold an interference effect, we calculated the total scores of brand image and switching cost in the collected data. According to Fornell and Larcker [37], we divided the data into higher groups and lower groups, and took subject data that were ranked as the top 33% and made them the high score group for brand image. Subject data scores that were ranked lower than 33% were made the low score group. The results showed that there were 260 people in each group. Table VI presents the description of the interference effect of brand image.

TABLE VI. MODERATING EFFECT OF BRAND IMAGE ANALYSIS

| Inspection mode | GFI | AGFI | NFI | RFI | IFI | TLI | CFI |
|-----------------|-----|------|-----|-----|-----|-----|-----|
| All samples     | 0.937 | 0.918 | 0.926 | 0.912 | 0.961 | 0.954 | 0.961 |
| High brand image | 0.878 | 0.841 | 0.836 | 0.806 | 0.950 | 0.940 | 0.949 |
| Low brand image | 0.862 | 0.820 | 0.854 | 0.828 | 0.945 | 0.934 | 0.944 |

When consumers feel higher brand image, the positive relationship between emotional account and trust is higher than when brand image is lower. In other words, brand image positively affects the positive relationship between emotional account and trust. Thus, H3 holds.

V. CONCLUSION AND DISCUSSION

After evidence-based analysis, the results of the study show that impulsive purchase has a positive effect on emotional account and trust. Dobni and Zinkhan [21] see brand image as the concept of the brand that consumers have in mind, which is subjective and formed through rational and irrational interpretations. It is crucial for retailers to develop and convert an attractive and consistent store image [29]. Studies on brand image provide a suitable basis to understand the importance of brand image in the retail chain [30]. Brand image has an interference effect on emotional account and trust.

Instant payment tools, such as Apple Pay, can be added to O2O purchase tools in future studies to investigate the influence of instant payment. At the same time, the organization has to emphasize both internal and external abilities in the process of the sales of new products in order to respond to the environment effectively and form a sound sales plan for new products.
