

# Identification of Factors Influencing Consumers' Use of Virtual Try-On Technology Based on UTAUT2 Model <sup>†</sup>

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## Abstract

We explored the adoption of virtual try-on (VTO) technology in Taiwan's fashion retail sector, which has gained prominence as consumer behavior online has changed since the COVID-19 pandemic. Using an extended unified theory of acceptance and use of technology 2 (UTAUT2) model, we examined the behavioral intentions and actual usage of VTO. The original framework of the UTAUT2 model was modified by excluding experience and incorporating personality traits as moderating variables. Based on 257 valid survey responses analyzed using SmartPLS 4.1, influencing factors were identified, revealing that gender was a significant moderator in VTO adoption.

**Keywords:** virtual try-on; technology acceptance; gender; personality traits

## 1. Introduction

Virtual try-on (VTO) is applied in selling clothing, cosmetics, glasses, shoes, accessories, furniture, and other items. Using augmented reality (AR), virtual reality (VR), and artificial intelligence (AI), consumers can simulate trying on clothes and makeup, selecting glasses that suit their face shape, and testing furniture placement in a virtual home environment. This improves the convenience of shopping and enriches the consumer experience and decision-making process.

VTO has become a valuable tool for consumers to explore products and enhance shopping satisfaction. It has also promoted the development of a retail business model as it integrates the virtual and real experiences. It has changed the retail industry and e-commerce since the COVID-19 pandemic, showing its enormous potential and advantages. It enables consumers to enjoy contactless shopping in a safe environment and provides physical retailers with a new channel to attract customers and increase sales, compensating for the impact of reduced customer traffic and inventory pressure caused by the pandemic. VTO technology enables consumers to try various clothing combinations conveniently, eliminating the need to wait in line at physical stores. This saves consumers' time and improves the convenience and shopping experience.

The advancement of technology increases consumers' expectations and demands for new technologies, while they have higher requirements for the attractiveness, content richness, and interactivity of the shopping experience [1]. VTOs offer a broader range of clothing choices and matching options. Consumers are no longer restricted to the options in physical stores; instead, they can explore and try on clothing from a variety of brands [2].



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In addition, VTOs increase consumers' sense of immersion and participation. Based on the authenticity provided by real-time try-ons, consumers are more willing to experiment with different styles and colors, thereby increasing their likelihood of purchase. It reduces the return rate of online shopping [3] and promotes the integration of online and offline shopping [4].

In this study, we identified the factors that affect consumers' behavioral intention and actual use of VTO, based on an extended unified theory of acceptance and use of technology 2 (UTAUT2) model, which incorporates intrinsic and extrinsic motivation. Additionally, we explored whether personality traits serve as moderating variables that influence actual use.

This article is organized as follows. Section 1 outlines the research background and objectives, followed by a review of the relevant literature in Section 2. Section 3 outlines the research methodology, while Section 4 presents the analysis and findings. Finally, Section 5 offers concluding remarks and implications.

## 2. Literature Review

### 2.1. Technology Acceptance Model (TAM)

The theory of reasoned action (TRA), a behavioral prediction model [5], has its theoretical basis in social psychology to explain how attitudes and subjective norms influence individual behavior. TRA assumes that the original idea and the final decision are different when an individual considers whether to take a specific action. The influence of social factors and subjective norms influences the final behavioral choice. These influences prompt the individual to re-examine the original intention, so the final action is the result of weighing and reflection, rather than a decision based solely on the current situation. Therefore, TRA emphasizes that the decision-making process underlying individual behavior is based on rational evaluation and is directly determined by behavioral intention, which, in turn, is influenced by the individual's attitude toward the behavior and subjective norm.

TRA is a basic framework for explaining individual behavior; however, it is assumed that all behavior is entirely controlled by the individual. However, in reality, many behaviors are not wholly controlled by the individual's will and are affected by external constraints or personal resources. The theory of planned behavior (TPB), based on the theory of reasoned action (TRA), is used to enhance the rationality and explanatory power of the theory [6]. Compared with TRA, TPB adds the dimension of perceived behavioral control (PBC) based on the original dimension. PBC refers to an individual's subjective feeling about whether they successfully perform a specific behavior, reflecting the individual's cognition of internal and external constraints, such as resources, skills, or the influence of the external environment. This dimension, together with behavioral intention, is used to determine the final behavior, meaning that if an individual is willing to perform a specific behavior but lacks the required resources or abilities, they may not accomplish it. TPB integrates attitude, subjective norm, and PBC, which jointly influence behavioral intention. Additionally, PBC directly affects actual behavior, making TPB more comprehensive than TRA in explaining and predicting behaviors that are more restricted by the external environment and personal resources.

Social cognitive theory (SCT) [7] combines behaviorism and social learning theory. In SCT, an individual's behavior in society is acquired through the observation and learning of others' behavior and its consequences. In SCT, the concept of self-efficacy plays a crucial role, referring to an individual's confidence in their ability to complete a specific behavior successfully. When a person has a strong sense of self-efficacy, they are likely to devote active learning to overcome challenges. Conversely, if self-efficacy is low, they are more likely to give up or avoid behaviors. In addition, SCT emphasizes the mutual influence among behavior, environment, and individuals. Individual behavior is influenced by the

environment and affects the environment, and the individual's cognitive process regulates these influences, reflecting the complexity of human behavior and demonstrating the individual's initiative in behavior selection.

TAM [8] explains and predicts people's acceptance of new technologies. This model is based on TRA. However, unlike TRA, which widely predicts various personal behaviors, TAM explicitly explains the acceptance and use of technology and excludes the subjective norms factor, as attitudes have a substantial predictive effect on behavioral intentions to use new technologies [8]. At the same time, the influence of subjective norms is relatively weak and uncertain. Therefore, subjective norms are excluded from TAM with attitude as the core of the framework. The two major factors that affect usage attitude are perceived usefulness (PU), which refers to the degree to which individuals believe that using new technology systems can improve their work efficiency or performance, and perceived ease of use (PEOU), which refers to whether individuals find it easy or simple to use new technology systems. In the TAM framework, behavioral intention is influenced by usage attitude and is directly affected by perceived usefulness. Usage attitude, in turn, is influenced by perceived usefulness and perceived ease of use, and perceived ease of use also affects perceived usefulness.

Although TAM effectively explains the reasons for accepting new technologies, it primarily focuses on personal factors and overlooks certain interfering factors, resulting in limited explanatory power in specific situations. Therefore, TAM2 was proposed based on the original TAM by adding two major categories of external variables explicitly related to perceived usefulness [9]: the social influence process and the cognitive instrumental process. The social influence process encompasses subjective norms and image, as well as two interfering variables: experience and voluntariness. The cognitive tool process comprises three variables: job relevance, output quality, and result demonstrability. TAM2 reintroduces subjective norms, which are one of its main differences from the original TAM, and explains that under the influence of social influence factors, subjective norms significantly impact people's behavioral intentions and actual behaviors.

TAM3 was based upon TAM2, continuing the discussion on perceived usefulness in TAM2 while also emphasizing the factors affecting perceived ease of use [10]. These factors include computer self-efficacy, computer playfulness, computer anxiety, computer self-control, perceived enjoyment, and objective usability. Additionally, TAM3 was proposed to highlight the moderating role of usage experience in the relationship between perceived usefulness and perceived ease of use. As individuals accumulate usage experience, the impact of PEOU on behavioral intention gradually weakens, while the impact of perceived usefulness and actual behavior becomes more significant.

When individuals make decisions, they are unable to make completely rational decisions, as assumed by classical theory, due to the limitations of their cognitive abilities and the complexity of the external environment. In this context, motivation becomes the key driving force in how people set goals and take action to make satisfactory choices within limited cognitive resources and external environments [11].

In technology acceptance research, motivation is introduced into the framework of exploring users' technology acceptance [12] and divided motivation into intrinsic motivation and extrinsic motivation, with detailed explanations as follows: (1) Intrinsic motivation refers to the user's behavioral intention generated by the pleasure, challenge, or satisfaction brought by the use of technology; (2) extrinsic motivation refers to the user's behavioral intention driven by external factors or expected outcomes, such as improving efficiency, receiving rewards, or avoiding punishment.

## 2.2. UTAUT2

Reference [13] combined the seven technology acceptance-related theories and TAM and TPB models with the UTAUT model. Variables that increase the predictive power of technology acceptance and use behavior are included in the model. The UTAUT model exhibits an explanatory power of over 70%, particularly in the context of information technology, and demonstrates better explanatory power than any of the theories mentioned above. The UTAUT model comprises four dimensions that influence behavioral intention, including performance expectancy, effort expectancy, social influence, and facilitating conditions, as well as four interfering variables: gender, age, experience, and voluntariness. The following is a detailed description of the dimensions and interfering variables of UTAUT:

- Performance expectancy (PE): This refers to the degree to which users believe that using a new technology can improve their work or life performance. In other words, performance expectancy reflects whether the use of new technology helps users improve their productivity or complete tasks more efficiently in their daily lives, much like perceived usefulness in the TAM model;
- Effort expectancy (EE): This refers to how easy users perceive it to be to learn and use new technologies. It depends on the difficulty of using the new technology and the time required to become familiar with it. The easier users perceive the technology to be, the more likely they are to use it, just as the perceived ease of use is in the TAM model;
- Social influence (SI): This refers to the idea that the opinions or attitudes of others can influence a user's decision to adopt new technology, such as those from colleagues, friends, family, or superiors. Users change their behavior because people in society encourage or expect them to use a particular technology;
- Facilitating condition (FC): This refers to whether users believe that the external environment, such as technical support, infrastructure, training opportunities, and support systems, helps them successfully use new technology. When users believe they have sufficient resources and support to use new technology, they are more likely to accept and continue using it;
- Interfering variables cover gender, age, experience, and volunteerism.

The four dimensions in the UTAUT model are related to external motivation, reflecting the user's perception and consideration in the external environment, especially in the work environment or within the organization, but have limited explanatory power for technology usage behavior in the individual consumer market. Therefore, past research [14] expanded three dimensions of intrinsic motivation based on UTAUT and established UTAUT2 to explain individuals' acceptance and use of technology in the consumer market, encompassing both complete intrinsic and extrinsic motivation.

The following is a detailed description of the three new facets of the UTAUT2 model:

- Hedonic motivation (HM) refers to the users adopting the technology because of the fun or pleasure it brings. Hedonic motivation is closely correlated with users' intention to use technology, reflecting that people not only consider the utility brought by technology but also pay attention to the happiness gained from using technology [14];
- Price value (PV) refers to the balance between the benefits of using new technology and the costs it incurs, that is, the concept of CP value. If users believe that the benefits of using technology outweigh the costs, their intention to use it increases;
- Habit (H) refers to whether users form automatic behavior patterns due to frequent use of technology in the past. When users have frequently used technology in the past, this habit increases the likelihood that they continue to use the technology, affecting both behavioral intentions and actual usage [15].

Additionally, the interfering variable of voluntariness is removed from the UTAUT2 model because the model covers a broader range of consumer markets, rather than just organizational contexts. Voluntariness is used to explain the difference between mandatory and voluntary use of technology within an organization. However, consumers use technology voluntarily based on personal preference [14], rather than mandatory requirements from organizations. Therefore, the only variables that interfere with the UTAUT2 model are gender, age, and experience.

Based on the literature review result, we used PE, EE, SI, FC, HM, PV, and H as the dimensions that influence consumers’ use of VTOs. Age and gender were selected as interfering variables. Because VTO has not yet been thoroughly developed in Taiwan, experience was not included as an interfering variable. The research hypotheses explored in this study are shown in Table 1.

**Table 1.** Hypotheses proposed in this study.

| Hypothesis                                                                                          |
|-----------------------------------------------------------------------------------------------------|
| H1: Performance expectancy has a positive impact on behavioral intention to use VTOs.               |
| H2: EE has a positive impact on behavioral intention to use VTOs.                                   |
| H3: SI has a positive impact on behavioral intention to use VTOs.                                   |
| H4a: FCs have a positive impact on behavioral intention to use VTOs.                                |
| H4b: FCs have a positive impact on the actual use of VTOs.                                          |
| H5: HM has a positive impact on behavioral intention to use VTOs.                                   |
| H6: PV has a positive impact on behavioral intention to use VTOs.                                   |
| H7a: Habits have a positive impact on behavioral intention to use VTOs.                             |
| H7b: Hs have a positive impact on the actual use of VTOs.                                           |
| H8: BI to use VTO has a positive impact on actual use.                                              |
| H9a: Age has an interfering effect on the relationship between FCs and BI to use VTO.               |
| H9b: Age has an interfering effect on the impact of HM on BI to use VTOs.                           |
| H9c: Age has an interfering effect on the impact of PV on BI to use VTOs.                           |
| H9d: Age has an interfering effect on the effect of H on BI to use VTOs.                            |
| H9e: Age has an interfering effect on the impact of H on the actual use of VTOs.                    |
| H10a: Gender has a moderating effect on the effect of FCs on BI to use VTO.                         |
| H10b: Gender has a moderating effect on the impact of HM on BI to use VTOs.                         |
| H10c: Gender has a moderating effect on the impact of PV on BI to use VTOs.                         |
| H10d: Gender has a moderating effect on the effect of Hs on BI to use VTOs.                         |
| H10e: Gender has a moderating effect on the impact of Hs on the actual use of VTOs.                 |
| H11a: Openness has a moderating effect on the effect of performance expectancy on BI to use VTO.    |
| H11b: Openness has a moderating effect on the effect of effort expectancy on BI to use VTO.         |
| H11c: Openness has a moderating effect on the BI to use VTO and the actual use of VTO.              |
| H12a: Neuroticism has a moderating effect on the effect of performance expectancy on BI to use VTO. |
| H12b: Neuroticism has a moderating effect on the effect of effort expectancy on BI to use VTO.      |
| H12c: Neuroticism has a moderating effect on the BI to use VTO and the actual use of VTO.           |

2.3. Personality Traits

Personality has been extensively researched in psychology. It represents a person’s characteristics in terms of behavior, emotional response, and thought process. These characteristics form the individual’s unique existence and affect how we perceive the outside world, process emotions, and make decisions.

The most widely used personality trait scale is the Big Five personality trait scale [16], which includes openness to experience, conscientiousness, extraversion, agreeableness,

and neuroticism. The Big Five personality traits are widely accepted as the standard framework for studying personality in psychology, behavioral science, and social science. For technology acceptance, personality significantly influences an individual's behavioral intention. Rigor and openness increase an individual's perceived usefulness of technology. People with high rigor focus on performance and hope that technology improves work efficiency, while those with high openness are willing to try new technologies and can quickly understand their value [17].

Extraversion and agreeableness are closely related to PEOU. People with strong extraversion are likely to find technology easy and enjoyable to use because they like socializing and have high adaptability. Individuals with strong agreeableness tend to possess cooperative qualities and are more receptive to new technologies [18]. Neuroticism harms these perceptual variables because emotionally unstable people are more likely to feel anxious and uneasy, which reduces their judgments of the usefulness and ease of use of technology [19]. These personality traits influence individuals' attitudes toward technology and their intention to use it, thereby predicting their behavioral intentions and actual usage.

Openness and neuroticism, two personality traits with great differences as research targets, were included in this study to explore whether personality traits have interfering effects (H11a, H11b, H12a, and H12b) and investigate their interfering effects on actual use (H11c and H12c).

### 3. Research Methodology

#### 3.1. Research Framework

This study aims to explore consumers' behavioral intentions for VTOs and whether openness and neuroticism have an interfering effect on behavioral intentions and use of VTOs. Based on the literature review result, the UTAUT2 model was used [14] as the research framework. The interfering variable of experience was removed, and personality traits were added as a new interfering variable.

#### 3.2. Variables

The variables used in this study are presented in Table 2, including PE, EE, SI, FC, HM, PV, and H, as well as three interfering variables: age, gender, and personality traits. Each variable was refined and modified to ensure its appropriateness for this study based on the literature review results.

**Table 2.** Definition of variables in this study.

| Factor | Definition [13–16,20]                                                                                                                                                                                                                                                                                                                           |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PE     | Consumers believe that VTOs can enhance the efficiency of daily shopping and make it more convenient.                                                                                                                                                                                                                                           |
| EE     | Consumers find it easy to learn how to use VTO.                                                                                                                                                                                                                                                                                                 |
| SI     | Consumers' intention to use VTOs is influenced by the opinions of significant others in their lives.                                                                                                                                                                                                                                            |
| FC     | Consumers will consider whether their own resources and external environment support their use of VTO.                                                                                                                                                                                                                                          |
| HM     | Consumers believe that using VTOs can make them feel joyful, fun, and satisfied.                                                                                                                                                                                                                                                                |
| PV     | Consumers will evaluate the value of using VTOs and the cost they pay. If consumers believe the value they receive is greater than the cost, they are more likely to use it and perceive it as good value for money.                                                                                                                            |
| H      | When an individual performs a behavior naturally without careful consideration, it is an automatic response based on experience, learning, and repeated behavior, reflecting that the individual is acting spontaneously. Therefore, this study defines H as "the H of using online shopping, which will naturally lead consumers to use VTOs." |

Table 2. Cont.

| Factor                      | Definition [13–16,20]                                                                                                                                                                                                                                              |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BI                          | BI refers to the consumer’s willingness to use VTO technology, which, in turn, influences actual use.                                                                                                                                                              |
| Use behavior (UB)           | Consumer use of VTO.                                                                                                                                                                                                                                               |
| Openness to Experience (OE) | Openness refers to an individual’s degree of acceptance of new things. Individuals with high openness exhibit strong curiosity, imagination, and creativity and are willing to try new things and consider different perspectives.                                 |
| Neuroticism (NE)            | Neuroticism refers to individuals who often experience negative emotions, especially anxiety, tension, and irritability. People with high neuroticism are prone to emotional instability and are more sensitive to stress and changes in the external environment. |

### 3.3. Questionnaire Design and Measurement

The questionnaire was designed based on the definitions of variables. The questionnaire of this study consisted of four parts. The first part was created to collect the basic personal information of the subjects, including gender, age, education level, occupation, and place of residence, to understand the background of the subjects; the second part was to understand the subjects’ experience and frequency of using VTO; the third part was created to obtain data on the items of the UTAUT2 model; the fourth part was created to understand the views on their personality traits. A five-point Likert scale was used, including strongly disagree, disagree, average, agree, and strongly agree (from 1 to 5 points). The questionnaire included 47 items, of which 38 were positive semantic questions and nine were negative semantic questions. The items of this study’s questionnaire can be found at [https://drive.google.com/drive/folders/1uVlxCRXGTfmm5GEb-C1r\\_2garfGeSvu5](https://drive.google.com/drive/folders/1uVlxCRXGTfmm5GEb-C1r_2garfGeSvu5) (accessed on 10 March 2025).

### 3.4. Subjects and Survey Method

Consumers in Taiwan who had used VTOs participated in this study. As VTOs are not common in Taiwan, we invited consumers who had not used them but were willing to use them to explore the factors that affect Taiwanese consumers’ intention to use VTOs. Since the use of VTO needed to be performed through a mobile phone or computer, we adopted the “online questionnaire survey method” to collect questionnaire data, as the method has the advantages of low cost, high efficiency, and time-saving. The survey method used ensured a wide range of participants without geographical restrictions.

### 3.5. Data Analysis

IBM SPSS 23.0 was used to conduct descriptive statistical analysis of the data. Next, SmartPLS 4.1 was employed to perform partial least squares structural equation modeling (PLS-SEM) analysis to explore the causal relationships among the variables. The analysis involved measurement model analysis and structural model analysis. The measurement model was used to examine whether the observed variables (items) corresponded to the latent variables (factors). Indicators used to assess reliability and validity included factor loading, Cronbach’s alpha, composite reliability (CR), and average variance extracted (AVE). The structural model analysis was used to test the causal path relationships among latent variables and to verify whether the hypotheses proposed in the research model are supported.

## 4. Results and Discussion

We adopted a convenience sampling method to collect survey responses, using Google Forms. The survey was distributed on 20 November 2024, by sharing the questionnaire

link through personal social media platforms, including Facebook, Instagram, Threads, and Line groups. Responses were collected through Facebook groups dedicated to surveys to investigate Taiwanese people's intentions to use VTO technology. The data collection ended on 9 December 2024, and 277 responses were received. To enhance the predictive power and reliability of the data, 20 invalid responses were excluded. Invalid responses were provided by participants who had never used a VTO and had no intention to use it. The main reasons for their lack of intention included distrust in the effectiveness of VTOs, preference for physical fitting, concerns about personal data privacy, and lack of interest. As a result, 257 valid responses were retained and used as the basis for data analysis in this study. Among the participants, 78 subjects had used VTOs, accounting for 30.4% of the total valid questionnaires, and 179 subjects had not used VTOs, accounting for 69.6% of the total valid questionnaires.

We used SmartPLS 4.1 to conduct factor loading analysis and adopted the recommendations of Ref. [21]. The factor loading standard was 0.7. The variables with a factor loading less than 0.7 were deleted to obtain better reliability and validity. The remaining items met the factor loading standard and had discriminant validity. Table 3 shows the reliability and validity test results of each factor.

**Table 3.** Reliability and validity test results of each construct (factor).

| Factor | Items <sup>1</sup> | Factor Loadings | CR    | Mean  | Cronbach's Alpha |
|--------|--------------------|-----------------|-------|-------|------------------|
| PE     | PE1                | 0.789           | 0.858 | 0.602 | 0.778            |
|        | PE2                | 0.805           |       |       |                  |
|        | PE3                | 0.823           |       |       |                  |
|        | PE5                | 0.779           |       |       |                  |
| EE     | EE1                | 0.876           | 0.856 | 0.666 | 0.752            |
|        | EE2                | 0.767           |       |       |                  |
|        | EE4                | 0.802           |       |       |                  |
| SI     | SI1                | 0.857           | 0.902 | 0.754 | 0.836            |
|        | SI2                | 0.914           |       |       |                  |
|        | SI3                | 0.831           |       |       |                  |
| FC     | FC2                | 0.763           | 0.773 | 0.532 | 0.702            |
|        | FC4                | 0.783           |       |       |                  |
|        | FC5                | 0.803           |       |       |                  |
| HM     | HM1                | 0.718           | 0.861 | 0.674 | 0.757            |
|        | HM2                | 0.879           |       |       |                  |
|        | HM4                | 0.857           |       |       |                  |
| PC     | PV1                | 0.793           | 0.863 | 0.614 | 0.790            |
|        | PV2                | 0.866           |       |       |                  |
|        | PV3                | 0.772           |       |       |                  |
|        | PV4                | 0.793           |       |       |                  |
| HT     | HT1                | 0.899           | 0.888 | 0.728 | 0.809            |
|        | HT3                | 0.755           |       |       |                  |
|        | HT4                | 0.897           |       |       |                  |
| BI     | BI3                | 0.786           | 0.823 | 0.610 | 0.718            |
|        | BI4                | 0.864           |       |       |                  |
| UB     | UB 1               | 0.838           | 0.887 | 0.723 | 0.808            |
|        | UB 2               | 0.835           |       |       |                  |
|        | UB 3               | 0.877           |       |       |                  |
| OE     | OE1                | 0.725           | 0.743 | 0.545 | 0.703            |
|        | OE2                | 0.861           |       |       |                  |
|        | OE5                | 0.766           |       |       |                  |

**Table 3.** *Cont.*

| Factor | Items <sup>1</sup> | Factor Loadings | CR    | Mean  | Cronbach's Alpha |
|--------|--------------------|-----------------|-------|-------|------------------|
| NE     | NE2                | 0.964           | 0.762 | 0.602 | 0.714            |
|        | NE3                | 0.710           |       |       |                  |
|        | NE5                | 0.864           |       |       |                  |

<sup>1</sup> [https://drive.google.com/drive/folders/1uVIXCRXGTfmm5GEb-C1r\\_2garfGeSvu5](https://drive.google.com/drive/folders/1uVIXCRXGTfmm5GEb-C1r_2garfGeSvu5) (accessed on 20 March 2025).

Tables 4 and 5 present the detailed path coefficients and test results.

**Table 4.** Path analysis results (users with experience in VTO).

| Path Between Factors | Path Coefficient | t-Values | p-Values | Result      |
|----------------------|------------------|----------|----------|-------------|
| PE → BI              | 0.223 **         | 2.896    | 0.004    | Significant |
| EE → BI              | 0.281 *          | 2.962    | 0.003    | Significant |
| SI → BI              | −0.030           | 0.280    | 0.779    | Not Sig.    |
| FC → BI              | 0.047            | 0.086    | 0.579    | Not Sig.    |
| HM → BI              | 0.377 ***        | 3.766    | <0.001   | Significant |
| PV → BI              | 0.119            | 0.922    | 0.356    | Not Sig.    |
| H → BI               | 0.476 ***        | 5.183    | <0.001   | Significant |
| BI → UB              | 0.472 ***        | 4.927    | <0.001   | Significant |
| FC → UB              | 0.143            | 1.228    | 0.219    | Not Sig.    |
| H → UB               | 0.298 **         | 2.780    | 0.005    | Significant |

\*\*\* indicates  $p < 0.001$ , \*\* indicates  $p < 0.01$ , and \* indicates  $p < 0.05$ .

**Table 5.** Path analysis results (users without experience in VTO).

| Path Between Factors | Path Coefficient | t-Values | p-Values | Result      |
|----------------------|------------------|----------|----------|-------------|
| PE → BI              | 0.219 **         | 2.859    | 0.004    | Significant |
| EE → BI              | 0.000            | 0.000    | 1.000    | Not Sig.    |
| SI → BI              | 0.309 ***        | 3.983    | <0.001   | Significant |
| FC → BI              | 0.079            | 0.944    | 0.345    | Not Sig.    |
| HM → BI              | 0.129            | 1.219    | 0.223    | Not Sig.    |
| PV → BI              | 0.158            | 1.575    | 0.115    | Not Sig.    |
| H → BI               | 0.064            | 0.842    | 0.400    | Not Sig.    |

\*\*\* indicates  $p < 0.001$  and \*\* indicates  $p < 0.01$ .

## 5. Conclusions

For consumers with prior VTO experience, PE, EE, HM, and H significantly influence BIs, which in turn drive actual usage. Among those who had not used VTOs but were open to trying them, PE and SI were the most influential factors. Additionally, personality traits did not have a moderating effect, whereas gender moderated the relationship between H and BI to use VTOs.

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