Hypotheses for the Reasons behind Beer Consumer’s Willingness to Purchase Beer: An Expanded Theory from a Planned Behavior Perspective

Edward Shih-Tse Wang
Graduate Institute of Bio-Industry Management, National Chung Hsing University, 250, Kuo Kuang Rd., Taichung 402, Taiwan; shihtse.wang@msa.hinet.net

Received: 15 October 2020; Accepted: 8 December 2020; Published: 10 December 2020

Abstract: Because beer is one of the most common alcoholic beverages consumed in the world, this research adopted an expanded theory of planned behavior (TPB) perspective to understand why beer consumers purchase beer. This study investigated the effects of injunctive norms, descriptive norms, attitude, and perceived behavioral control on alcohol identity and purchase intention. The possible mediating role of alcohol identity was also investigated. This study was conducted in Taiwan, and a total of 452 beer consumers participated in the survey. Structural equation modeling was used to examine the relationship among the study variables. The results revealed that alcohol identity positively influences purchase intention, and attitude positively affects alcohol identity and purchase intention. In addition, injunctive norms have a positive influence on alcohol identity, and descriptive norms positively affect purchase intention. In particular, perceived behavioral control has a negative influence on alcohol identity but has a positive influence on purchase intention. This study also found that alcohol identity mediates the attitude–purchase intention relationship. By examining the consumption behavior of beer consumers from the TPB perspective, this study contributed to an understanding of beer consumption behavior.

Keywords: theory of planned behavior; social norms; perceived behavioral control; attitude; alcohol identity; beer consumption

1. Introduction

On many social occasions, alcohol plays a medium role in bringing people closer. Among alcoholic beverages, beer is the most consumed beverage and plays an important role in social activities [1]. Because of the importance of the beer market, previous studies have explored beer consumer behavior from multiple perspectives. For instance, researchers have discussed this topic from the perspective of the product and brand. Researchers have found that brand equity (i.e., perceived quality, brand awareness, brand association, and brand loyalty) affects consumers’ willingness to pay a premium price [2–4]. Some researchers have indicated that brand familiarity [5] and design awareness [6] affect the consumer’s beer consumption attitude or behavioral intention. Other researchers have also investigated the topic from the perspective of consumer characteristics or behavior, such as lifestyle [7], ethnocentrism [8], and the demand for alcohol [9], and have found that these factors affect their beer consumption behavior.

The theory of planned behavior (TPB) proposed by Ajzen [10] is considered to be one of the most effective theories for predicting human behavior [11]. According to TPB, subjective norms, attitudes, and perceived behavioral control affect behavioral intention and behavior [12,13]. TPB has been adopted to understand food choice behavior [14] and food waste behavior [15–18]. TPB has also been applied to investigate behavioral intention and behavior related to many types of foods, such as fruits and vegetables [19], organic foods [20,21], healthy food [11], fast food [13], and genetically modified foods [22].
Because social norms can be divided into injunctive and descriptive norms [23] and subjective norms in TBP are equivalent to injunctive norms [24], some scholars have extended TPB into four dimensions: injunctive norms, descriptive norms, attitude, and perceived behavioral control [25–27]. Injunctive norms refer to the degree of social approval or disapproval of the act [28]. Through people’s perceptions, injunctive norms determine whether a particular behavior is socially acceptable or not [29]. Descriptive norms are based on a view of what other people usually do, providing information regarding what seems to be the most appropriate behavior [30]. Descriptive norms are what most people do in a specific situation and are the motive for action resulting from observing what other people do [31]. Attitude can be interpreted as the extent to which a person has a positive or negative assessment of their behavior [32], and it is important in research on food consumption behavior [33]. Perceived behavioral control can be interpreted as a person’s ability to independently control their behavior [11], and the concept of perceived behavioral control is directly derived from self-efficacy, and it is similar to self-efficacy [34].

Researchers have investigated the influence of the four dimensions on various types of behavioral intentions, such as the podcast adoption intention [35], intention to publish in open access journals [27], purchase intention for organic cotton apparel [26], and intention of public reporting on food safety incidents [36]. Despite popular interest, few studies have adopted the expanded TPB to explain alcohol consumption behavior in general and beer consumption behavior in particular. As a result, knowledge on whether injunctive norms, descriptive norms, attitude, and perceived behavioral control are related to beer purchase intention is limited.

Previous studies have shown that self-identity has a crucial effect on behavior and behavioral intention [37,38]. As self-identity is “how individuals see themselves” [39], self-identity is equal to alcohol identity in the context of beer consumption, which refers to the extent to which a person considers himself or herself a “drinker.” Previous studies have integrated the expanded TPB and self-identity to investigate the direct influence of injunctive norms, descriptive norms, attitude, perceived behavioral control, and self-identity on purchase intention [37,40–42]. Although a previous study pointed out that attitude and perceived behavioral control positively affect self-identity [43], no study has explored the possible mediating role of self-identity in the effects of injunctive norms, descriptive norms, attitude, and perceived behavioral control on purchase intention. Thus, the following research questions are proposed:

RQ1: Do injunctive norms, descriptive norms, attitude, and perceived behavioral control affect the beer consumer’s purchase intention?

RQ 2: Are the effects of injunctive norms, descriptive norms, attitude, and perceived behavioral control on beer consumers’ purchase intention mediated by alcohol identity?

In summary, to provide beer marketers and researchers with an understanding of beer consumption behavior through an expanded TPB perspective, in this study the relationships among injunctive norms, descriptive norms, attitude, perceived behavioral control, alcohol identity, and purchase intention were explored in the context of beer consumption.

2. Materials and Methods

2.1. Hypothesis and Research Model

The study investigated how injunctive norms, descriptive norms, attitudes, and perceived behavioral control affect alcohol identity and purchase intention. Accordingly, the following hypotheses and conceptual framework (as illustrated in Figure 1) were posited to understand the relationships among these factors:

Hypotheses 1 (H1): Injunctive norms positively influence alcohol identity.

Hypotheses 2 (H2): Injunctive norms positively influence purchase intention.
Hypotheses 3 (H3): Descriptive norms positively influence alcohol identity.

Hypotheses 4 (H4): Descriptive norms positively influence purchase intention.

Hypotheses 5 (H5): Attitude positively influences alcohol identity.

Hypotheses 6 (H6): Attitude positively influences purchase intention.

Hypotheses 7 (H7): Perceived behavioral control positively influences alcohol identity.

Hypotheses 8 (H8): Perceived behavioral control positively influences purchase intention.

Hypotheses 9 (H9): Alcohol identity positively influences purchase intention.

2.2. Sample and Data Collection

The questionnaire survey was conducted online from 17 January 2019 to 25 February 2019. The research was conducted in Taiwan, where drinking is very popular. Since Taiwan became a member of the World Trade Organization in 2002 and the alcohol monopoly was abolished [44], studies have focused on the potential health impact of alcoholic beverage consumption [45,46]. Little research has been conducted on beer consumption behavior in Taiwan. The research sample of this study included consumers over the age of 18 years who had consumed beer in the past. Before the questionnaire was administered, consent was obtained from consumers. By using a question to identify beer consumers (i.e., Have you ever drunk beer?), we excluded invalid samples. The population size and distribution of beer consumers in Taiwan is unknown because no official statistics are available. According to Cochran’s [47] formula, the minimum sample size is 385 for a 95% confidence interval with a 0.5 permitted margin of error. Moreover, in multivariate research, the sample size should be 20 times larger than the number of observation items in the study [48]. Because 19 items were used in the study, a sample size larger than 380 was required. The 452 valid questionnaires received at the end of the survey was a greater sample size than the requisite minimum sample size.

2.3. Scale Development

All scales for measuring the variables, which have been shown to possess internal reliability and convergent validity, were adopted from other studies. These scales were chosen among alternative scales in the literature because they best represented the model constructs. Constructs related to injunctive
norms and descriptive norms were measured using two 3-item scales developed by Wang and Lin [49]. A 3-item scale was used to measure attitude (Maio et al., 2003) [50], and perceived behavioral control was measured using a 3-item scale modified from the study of Gao et al. [51]. A 3-item scale was adapted from the study of Barbarossza and De Pelsmacker [39] to measure alcohol identity. Finally, a 4-item scale, which was slightly modified from the study of Barber and Taylor [52], was used to measure purchase intention. The questionnaire comprised 19 questions, and all items were measured on a 7-point Likert scale, ranging from 1 (completely disagree) to 7 (completely agree). The questionnaire items in this research are listed in Table 2.

3. Results

3.1. Demographics

As shown in Table 1, among respondents, 265 (58.6%) were female and 187 (41.1%) were male. In terms of age distribution, respondents aged 20–29 years comprised the largest group (66.2%), followed by respondents aged 30–39 years (13.9%). In terms of monthly income, respondents with the monthly income of NTD 30001–40000 comprised the largest group (23.2%), followed by respondents with the monthly income of NTD 20001–30000 (16.4%). Most respondents had higher education degrees, including 66.2% with college degrees and 23.7% with master’s degrees. In terms of current occupation, 28.8% (130 respondents) of the total study sample listed “student” as their current occupation, which comprised the largest group. The second largest group in terms of occupation included service and sales workers, accounting for 21.7% of the total population.

| Table 1. Descriptive statistical analysis. |
|------------------------------------------|
| Descriptive Statistics | Freq. | %   |
|----------------------------|-------|-----|
| Gender                     |       |     |
| Male                       | 187   | 41.1% |
| Female                     | 265   | 58.6% |
| Age                        |       |     |
| Under 20                   | 11    | 2.4%  |
| 20–29                      | 299   | 66.2% |
| 30–39                      | 63    | 13.9% |
| 40–49                      | 39    | 8.6%  |
| 50–59                      | 37    | 8.2%  |
| 60–69                      | 3     | 0.7%  |
| Monthly Income (NTD)       |       |     |
| Unpaid Income              | 73    | 16.2% |
| Below 20000                | 71    | 15.7% |
| 20001–30000                | 74    | 16.4% |
| 30001–40000                | 105   | 23.2% |
| 40001–50000                | 66    | 14.6% |
| 50001–60000                | 29    | 6.4%  |
| 60001–70000                | 15    | 3.3%  |
| Above 70000                | 19    | 4.2%  |
| Level of Education         |       |     |
| Elementary school          | 1     | 0.2%  |
| Junior high school         | 3     | 0.7%  |
| Senior / vocational high school | 42 | 9.3% |
| College                    | 299   | 66.2% |
| Master’s or above          | 107   | 23.7% |
| Legislators, Senior Officials and Managers | 10 | 2.2% |
| Professionals              | 89    | 19.7% |
| Occupational               |       |     |
| Technicians and Associate Professionals | 25 | 5.5% |
| Clerical Support Workers   | 24    | 5.3%  |
| Service and Sales Workers  | 98    | 21.7% |
| Skilled Agricultural, Forestry, and Fishery Workers | 6 | 1.3% |
| Craft and Related Trades Workers | 14 | 3.1% |
| Plant and Machine Operators, and Assemblers | 11 | 2.4% |
| Elementary Laborers        | 5     | 1.1%  |
| Students                   | 130   | 28.8% |
| Military, police, teachers, and government employees | 27 | 6.0% |
| Others                     | 13    | 2.9%  |
3.2. Convergent Validity

Using LISREL version 8.70 and structural equation modeling (SEM), the causality relationship among the variables and the overall fit of the model were analyzed. To understand the relationship between observed variables and potential variables, confirmatory factor analysis (CFA) was adopted. CFA was used to verify the factor structure of the theoretical model and to examine the reliability and validity of the measured indicators. Convergent validity denotes the degree of correlation between the results obtained for the same construct measured using different items, which can be estimated using three test methods, namely composite reliability (CR), factor loadings (λ) of the items, and average variance extracted (AVE). The value of CR should be higher than 0.7, and the value of AVE must be higher than 0.5 at least [53]. The value of the acceptable factor loading should be above 0.5 at least [54]. This study’s CFA plot is shown in Figure 2. As shown in Table 2, the CR value ranged from 0.78 to 0.98, all of which were greater than 0.7; the value of AVE ranged from 0.56 to 0.90, all of which were greater than 0.5; and the value of factor loadings ranged from 0.51 to 0.98, all of which were greater than 0.5. In summary, the standards were met for composite reliability, average variance extracted, and factor loadings; thus, the questionnaire had convergent validity.

![Figure 2. Confirmatory Factor Analysis (CFA) plot.](image)

3.3. Discriminant Validity

Discriminant validity denotes the degree of difference between latent constructs and other constructs [53]. The discriminant validity test is a test of whether a construct measure is empirically unique and of whether it correlates too closely with other measures from which it should differ; an indicator of discriminant validity is obtained through comparing the square root values of the AVE of each construct and correlations with other constructs in the model [54]. When the ratio of AVE from
each construct exceeds the square of the coefficient representing its correlation with other constructs, the validity of the discrimination is sufficient [53]. The AVE square root values of each variable in this study were all greater than the correlation coefficient between constructs, indicating that each variable is distinct, and that discriminant validity is sufficient (As shown in Table 3).

### Table 2. Convergent validity test results.

| Variables                              | Observed Variables                                      | λ   | CR  | AVE |
|----------------------------------------|---------------------------------------------------------|-----|-----|-----|
| Injunctive norms                       | Most people who are important to me believe that I      | 0.88|     |     |
|                                        | should drink.                                           |     |     |     |
|                                        | Some people who have an influence on me believe that I  | 0.89| 0.85| 0.65|
|                                        | should drink.                                           |     |     |     |
|                                        | My close friends and family believe that drinking is a  | 0.62|     |     |
|                                        | good habit.                                              |     |     |     |
| Descriptive norms                      | As far as I know, many people drink beer.               | 0.78|     |     |
|                                        | Many of my friends drink beer.                          | 0.90|     |     |
|                                        | Many of my family members drink beer.                   | 0.51|     |     |
| Attitude                               | I personally think that drinking is a good thing.        | 0.93|     |     |
|                                        | I personally think that drinking is a favorable thing.   | 0.90| 0.81|     |
|                                        | I personally think that drinking is a valuable thing.    | 0.87|     |     |
| Perceived behavioral control           | It’s easy for me to control how much alcohol I drink.   | 0.75|     |     |
|                                        | I have the ability to control how much alcohol I drink. | 0.92|     |     |
|                                        | I can control how much alcohol I drink without too       | 0.88|     |     |
|                                        | much effort.                                             |     |     |     |
| Alcohol-identity                       | I believe that I am a person who cares about beer       | 0.85|     |     |
|                                        | products.                                               |     |     |     |
|                                        | I believe that I am a typical beer consumer.             | 0.94|     |     |
|                                        | Buying beer products make me feel like a typical         | 0.90|     |     |
|                                        | beer consumer.                                           |     |     |     |
| Purchase Intention                     | I plan to keep buying beer products in the future.       | 0.95|     |     |
|                                        | I think I will continue to buy beer products in the     | 0.98|     |     |
|                                        | future.                                                 |     |     |     |
|                                        | I've been in trouble at work due to my drinking habit.  | 0.93|     |     |
|                                        | I am still interested in buying beer products in the     | 0.94|     |     |
|                                        | future.                                                 |     |     |     |

### Table 3. Correlations among the latent variables.

| Variables                              | Avg. | S.D. | IN  | DN  | ATT | PBC | AI   | PI   |
|----------------------------------------|------|------|-----|-----|-----|-----|------|------|
| Injunctive norms (IN)                  | 3.52 | 1.33 | 0.80|     |     |     |      |      |
| Descriptive norms (DN)                 | 5.17 | 1.18 | 0.44| 0.75|     |     |      |      |
| Attitude (ATT)                         | 4.16 | 1.43 | 0.61| 0.52| 0.90|     |      |      |
| Perceived behavioral control (PBC)     | 5.86 | 1.18 | 0.06| 0.07| 0.09| 0.85|      |      |
| Alcohol-identity (AI)                  | 3.41 | 1.61 | 0.56| 0.43| 0.69| -0.06| 0.90 |      |
| Purchase intention (PI)                | 4.83 | 1.57 | 0.47| 0.48| 0.70| 0.07| 0.72 | 0.95 |

Note: The grey spots are the squared average variance extracted values of each construct, whereas the rest of the values are correlation coefficients between constructs.

### 3.4. Results of Structural Model Analysis and Path Analysis

The causality relationship between the variables and the overall fit of the model were analyzed using SEM. The overall fit of the structural model of this study was elucidated in terms of the following absolute-fit measures: \( \chi^2 = 492.01, \text{d.f.} = 137, \chi^2/\text{d.f.} = 3.59, \text{GFI} = 0.90, \text{AGFI} = 0.86, \)
RMSEA = 0.076. The incremental-fit measures of this study were as follows: CFI = 0.98, NFI = 0.97, NNFI = 0.97. The parsimonious-fit measures of this study were as follows: PNFI = 0.78, PGFI = 0.65. Overall, the structural model had an acceptable fit. Next, according to the path analysis results, injunctive norms positively affected alcohol identity (β = 0.22, p < 0.01), and descriptive norms positively affected purchase intention (β = 11, p < 0.01). Thus, H1 and H4 were supported. Attitude positively affected alcohol identity (β = 0.58, p < 0.01), and attitude positively affected purchase intention (β = 0.39, p < 0.01), supporting H5 and H6. In addition, perceived behavioral control positively affected purchase intention (β = 0.13, p < 0.01), supporting H8. Alcohol identity positively affected purchase intention, supporting H9 (β = 0.46, p < 0.01). However, H2 and H3 were not supported: alcohol identity was not significantly affected by injunctive norms (β = −0.071, p > 0.05) or descriptive norms (β = 0.05, p > 0.05). Furthermore, H7 was not supported because the results indicated the opposite direction, where perceived behavioral control negatively affected alcohol identity (β = −0.10, p < 0.01). The path analysis results are shown in Table 4. The results reveal that the model explained 59% and 66% of the variance of alcohol identity and purchase intention, respectively.

Table 4. Research findings.

| Path | Path Coefficients | T-Value |
|------|-------------------|---------|
| H1 Injunctive norms → Alcohol-identity | 0.22 | 4.36 *** |
| H2 Injunctive norms → Purchase intention | −0.07 | −1.63 n.s |
| H3 Descriptive norms → Alcohol-identity | 0.05 | 1.03 n.s |
| H4 Descriptive norms → Purchase intention | 0.11 | 2.89 ** |
| H5 Attitude → Alcohol-identity | 0.58 | 10.05 *** |
| H6 Attitude → Purchase intention | 0.39 | 6.85 *** |
| H7 Perceived behavioral control → Alcohol-identity | −0.10 | −2.75 ** |
| H8 Perceived behavioral control → Purchase intention | 0.09 | 2.91 ** |
| H9 Alcohol-identity → Purchase intention | 0.46 | 8.66 *** |

Notes: n.s: not significant (p > 0.05). ** p < 0.01. *** p < 0.001.

3.5. Results of Mediating Analysis

This study also examined the mediating role of alcohol identity in the expanded TPB. To determine whether alcohol identity has a mediating effect, the current study used the analytic method, which involves 4 steps, suggested by Baron and Kenny [55]. As shown in Table 5, alcohol identity partially mediated the effects of attitude on purchase intention, whereas alcohol identity did not have a mediation effect on the effects of injunctive norms, descriptive norms, and perceived behavioral control on repurchase intention.

Table 5. Testing of the mediating effect (BK approach).

| Mediation Path | Path Coefficients | Mediating Effect |
|----------------|-------------------|-----------------|
| IV M DV (1) IV→M | (2) M→DV | (3) M→DV IV→DV | (4) IV+M→DV |
| IN AI PI | 0.22 *** | 0.75 *** | 0.04 n.s | 0.47 *** | −0.07 n.s | No |
| DN AI PI | 0.05 n.s | 0.14 ** | 0.11 ** | 0.09 | 2.91 ** | Partial |
| ATTI AI PI | 0.58 *** | 0.66 *** | 0.38 *** | 0.09 | 2.91 ** | No |

Note: IV: independent variable; M: mediator; DV: dependent variable; IN = injunctive norms; DN = descriptive norms; ATTI = attitude; PBC = perceived behavioral control; AI = alcohol identity; PI = purchase intention. n.s: not significant (p > 0.05). * p < 0.05. ** p < 0.01. *** p < 0.001.
4. Discussion

4.1. Theoretical and Practical Implications

This study adopted the expanded TPB to predict consumers’ willingness to repurchase beer. More specifically, the influence of injunctive norms, descriptive norms, attitude, and perceived behavioral control on purchase intention were explored, along with the potential mediating role of alcohol identity in the aforementioned relationships. Because few studies have adopted the expanded TPB to explain beer consumption behavior, this study contributes to the relevant literature by examining beer consumption behavior from a TPB perspective. The results of empirical investigation revealed that injunctive norms have a positive effect on alcohol identity, and descriptive norms have a positive effect on purchase intention. Attitude positively affects alcohol identity and purchase intention. Perceived behavioral control has a positive effect on purchase intention, but it has a negative effect on alcohol identity. Alcohol identity has a positive and significant effect on purchase intention. However, injunctive norms have no significant effect on alcohol identity, and descriptive norms do not significantly affect alcohol identity.

Purchase intention was affected by attitude [56], perceived behavioral control [57], and identification [37], consistent with other studies’ findings. However, contrary to this study’s findings, Wauters et al. [43] reported that perceived behavioral control positively (rather than negatively) affects self-identity. This inconsistency is primarily attributable to the characteristics of beer, excessive consumption of which is unhealthy and whose drinkers (even moderate ones) are reluctant to think of themselves as typical beer consumers. In particular, this study used alcohol identity as a mediating variable to explore the relationship among injunctive norms, descriptive norms, attitude, perceived behavioral control, and purchase intention. According to the results of empirical research, alcohol identity partially mediates the attitude–purchase intention relationship but does not mediate the influence of injunctive norms, descriptive norms, and perceived behavioral control on purchase intention.

This study revealed that attitude influences purchase intention. When consumers think that drinking beer is a favorable activity, they will consider buying beer products. Alcohol identity positively affects purchase intention; that is, because a person thinks he or she is a typical drinker, he or she will be more willing to purchase beer. In particular, the study results showed that descriptive and injunctive norms have different effects on drinking perceptions. Injunctive norms have a positive influence on alcohol identity but do not affect purchase intention, whereas descriptive norms affect purchase intention but do not affect alcohol identity. When a person perceives drinking beer is socially acceptable, the person will be more likely to think he or she is a typical drinker. By contrast, when a person perceives that many others drink beer, the person will be more willing to buy beer products.

An interesting finding is that perceived behavioral control has a positive effect on purchase intention but a negative effect on alcohol identity. The more consumers think that they can control how much they drink, the less they think of themselves as a typical drinker, the more willing they are to consider buying beer products.

4.2. Limitations and Future Research Directions

First, the questionnaires were administered online, which may result in the recruitment of a biased sample population. In follow-up studies, researchers can conduct more extensive, nationwide sampling to improve the generalizability of the findings. Second, in this study, social norms were divided into injunctive norms and descriptive norms. Fang et al. [58] considered that social norms can be divided into four dimensions: injunctive norms, descriptive norms, subjective norms, and personal norms. In follow-up studies, researchers can use other classifications of social norms to discuss the research topic.

Funding: This research received no external funding.

Conflicts of Interest: The author declares no conflict of interest.
References

1. Humia, B.V.; Santos, K.S.; Schneider, J.K.; Leal, I.L.; de Abreu Barreto, G.; Batista, T.; Padilha, F.F. Physicochemical and sensory profile of beauregard sweet potato beer. Food Chem. 2020, 312, 126087. [CrossRef] [PubMed]

2. Aimkij, N.; Mujtaba, B.G. Branding and brand equity measurement in the beer industry of Thailand. Chin. Bus. Rev. 2010, 9, 1–16.

3. Porral, C.C.; Bourgault, N.; Dopico, D.C. Brewing the Recipe for Beer Brand Equity. Eur. Res. Stud. 2013, 16, 82–97.

4. Torres, P.M.; Augusto, M.G.; Lisboa, J.V. Determining the causal relationships that affect consumer-based brand equity: The mediating effect of brand loyalty. Market. Intell. Plann. 2015, 33, 944–956. [CrossRef]

5. Arboleda, A.M.; Alonso, J.C. Design awareness and purchase intention: An item response theory approach. Acad. Rev. Latinoam Adm. 2014, 27, 138–155. [CrossRef]

6. Cerjak, M.; Haas, R.; Kovai, D. Brand familiarity and tasting in conjoint analysis: An experimental study with Croatian beer consumers. Br. Food, J. 2010, 112, 561–579. [CrossRef]

7. Begunca, A. Identifying lifestyles of Kosovo beer consumers. Eur. J. Sustain. Dev. 2017, 6, 123–138. [CrossRef]

8. Wanninayake, W.M.C.; Chovancov, M. Consumer ethnocentrism and attitudes towards foreign beer brands: With evidence from Zlin Region in the Czech Republic. J. Competitiveness. 2012, 4, 3–19. [CrossRef]

9. Ornstein, S.I.; Hanssens, D.M. Alcohol control laws and the consumption of distilled spirits and beer. J. Consum Res. 1985, 12, 200–213. [CrossRef]

10. Ajzen, I. From intentions to actions: A theory of planned behavior. In Action Control; Springer: Berlin/Heidelberg, Germany, 1985; pp. 11–39.

11. Mamun, A.A.; Hayat, N.; Noor Raihani, B.Z. Healthy eating determinants: A study among Malaysian young adults. Foods 2020, 9, 974. [CrossRef]

12. Al-Swidi, A.; Sheikh Mohammed, R.H.; Hafeez, M.H.; Mohd Noor, M.S. The role of subjective norms in theory of planned behavior in the context of organic food consumption. Br. Food. J. 2014, 116, 1561–1580. [CrossRef]

13. Ajzen, I. From intentions to actions: A theory of planned behavior. In Action Control; Springer: Berlin/Heidelberg, Germany, 1985; pp. 11–39.

14. Dreezens, E.; Martijn, C.; Tenblt, P.; Kok, G.; de Vries, N.K. Food and the relation between values and attitude characteristics. Appetite. 2005, 45, 40–46. [CrossRef] [PubMed]

15. Stancu, V.; Haugaard, P.; Lähteenmäki, L. Determinants of consumer food waste behaviour: Two routes to food waste. Appetite 2016, 96, 7–17. [CrossRef] [PubMed]

16. Visschers, V.H.; Wickli, N.; Siegrist, M. Sorting out food waste behaviour: A survey on the motivators and barriers of self-reported amounts of food waste in households. J. Environ. Psychol. 2016, 45, 66–78. [CrossRef]

17. Russell, S.V.; Young, C.W.; Unsworth, K.L.; Robinson, C. Brining habits and emotions into food waste behaviour. Resour. Consen. Recycl. 2017, 125, 107–114. [CrossRef]

18. Tsai, W.-C.; Chen, X.; Yang, C. Consumer food waste behavior among emerging adults: Evidence from China. Foods 2020, 9, 961. [CrossRef]

19. Blanchard, C.M.; Fisher, J.; Sparling, P.B.; Shanks, T.H.; Nehr, E.; Rhodes, R.E.; Baker, F. Understanding adherence to 5 servings of fruits and vegetables per day: A theory of planned behavior perspective. J. Nutr. Educ. Behav. 2009, 41, 3–10. [CrossRef]

20. Yadav, R.; Pathak, G.S. Intention to purchase organic food among young consumers: Evidences from a developing nation. Appetite 2016, 96, 122–128. [CrossRef]

21. Scalco, A.; Noventa, S.; Sartori, R.; Ceschi, A. Predicting organic food consumption: A meta-analytic structural equation model based on the theory of planned behavior. Appetite 2017, 112, 235–248. [CrossRef]

22. Akbari, M.; Ardekani, Z.F.; Pino, G.; Malekzaeidi, H. An extended model of Theory of Planned Behavior to investigate highly-educated Iranian consumers’ intentions towards consuming genetically modified foods. J. Clean Prod. 2019, 227, 784–793. [CrossRef]

23. Thøgersen, J. Social norms and cooperation in real-life social dilemmas. J. Econ. Psychol. 2008, 29, 458–472. [CrossRef]
24. Park, N.; Naewon, K.; Oh, H.S. Examining intention of digital piracy: An integration of social norms and ethical ideologies. J. Inf. Commun. Ethics. Soc. 2018, 16, 157–172. [CrossRef]

25. Mokness, L.; Olsen, S.O. Understanding researchers’ intention to publish in open access journals. J. Doc. 2017, 73, 1149–1166. [CrossRef]

26. Han, T.I. Determinants of Organic Cotton Apparel Purchase: A Comparison of Young Consumers in the USA and South Korea. Sustainability 2018, 10, 2025. [CrossRef]

27. Andam, A.C.; Osman, A.Z.; Hudaib, M. Determinants of Intention to Give Zakat on Employment Income: Experience from Marawi City, Philippines. J. Islam Account. Bus. Res. 2019, 10, 528–545. [CrossRef]

28. Jacobson, R.P.; Jacobson, K.J.; Hood, J.N. Social norm perceptions predict citizenship behaviors. J. Manag. Psychol. 2015, 30, 894–908. [CrossRef]

29. He, H.; Fu, J.; Li, X.; Guo, R. The interplay betweenendorser social status and normative appeals on the endorsement effectiveness of pro-environmental behaviors. PLoS ONE 2019, 14, e0210699. [CrossRef]

30. Cialdini, R.B.; Reno, R.R.; Kallgren, C.A. A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. J. Pers Soc. Psychol. 1990, 58, 1015–1026. [CrossRef]

31. Reno, R.R.; Cialdini, R.B.; Kallgren, C.A. The transsituational influence of social norms. J. Pers Soc. Psychol. 1993, 64, 104–112. [CrossRef]

32. Seles, E.; Afacan, Y. Exploring the relationship between health and walkability. Open House Int. 2019, 44, 44–52.

33. Nguyen, N.; Nguyen, H.V.; Nguyen, P.T.; Tran, V.T.; Nguyen, H.N.; Nguyen, T.M.N.; Nguyen, T.H. Some key factors affecting consumers' intentions to purchase functional foods: A case study of functional yogurts in Vietnam. Foods. 2019, 9, 24. [CrossRef] [PubMed]

34. Sanders, J.; Oomens, S.; Blonk R., W.B.; Hazelzet, A. Explaining lower educated workers’ training intentions. J. Workplace Learn. 2011, 23, 402–416. [CrossRef]

35. Mou, Y.; Lin, C.A. Exploring podcast adoption intention via perceived social norms, interpersonal communication, and theory of planned behavior. J. Broadcast. Electron. Media. 2015, 59, 475–493. [CrossRef]

36. Yin, S.; Li, Y.; Chen, Y.; Wu, L.; Yan, J. Public reporting on food safety incidents in China: Intention and its determinants. Br. Food J. 2018, 20, 2615–2630. [CrossRef]

37. Smith, J.R.; Terry, D.J.; Manstead, A.S.R.; Louis, W.R.; Kotterman, D.; Wolfs, J. The attitude-behavior relationship in consumer conduct: The role of norms, past behavior, and self-identity. J. Soc. Psychol. 2008, 148, 311–333. [CrossRef]

38. Voegel, J.A.; Voegel, L.A. An exploratory examination of the ethical decision making process of entrepreneurs through the theory of planned behavior lens: A multi-criteria approach. J. Bus. Entrep. 2017, 29, 1–48.

39. Barbarossa, C.; De Pelsmacker, P. Positive and negative antecedents of purchasing eco-friendly products: A comparison between green and non-green consumers. J. Bus. Ethics. 2016, 134, 229–247. [CrossRef]

40. Conner, M.; McMillan, B. Interaction effects in the theory of planned behaviour: Studying cannabis use. Br. J. Soc. Psychol. 1999, 38, 195–222. [CrossRef]

41. Nigbur, D.; Lyons, E.; Uzzell, D. Attitudes, norms, identity and environmental behaviour: Using an expanded theory of planned behaviour to predict participation in a kerbside recycling programme. Br. J. Soc. Psychol. 2010, 49, 259–284. [CrossRef]

42. Booth, A.R.; Norman, P.; Harris, P.R.; Goyder, E. Using the theory of planned behaviour and self-identity to explain chlamydia testing intentions in young people living in deprived areas. Br. J. Health Psychol. 2014, 19, 101–112. [CrossRef] [PubMed]

43. Wauters, E.; D’Haene, K.; Lauwers, L. The social psychology of biodiversity conservation in agriculture. J. Environ. Plan. Manag. 2017, 60, 1464–1484. [CrossRef]

44. Chen, C.; Cheng, K.; Chang, H.; Chang, S. Changes in alcoholic beverage preference and consumption in Taiwan following accession to the world trade organization. Addiction 2020, 1–9. [CrossRef] [PubMed]

45. Chen, K.; Chie, W.; Hwu, H.; Chou, S.; Yeh, Y.; Yu, C.; Tan, H.K. Alcohol use problem among patients in methadone maintenance treatment in Taiwan. J. Subst. Abuse Treat. 2011, 40, 142–149. [CrossRef]

46. Huang, C.-C.; Hsiao, J.-R.; Lee, W.-T.; Lee, Y.-C.; Ou, C.-Y.; Chang, C.-C.; Chang, J.S. Investigating the association between alcohol and risk of head and neck cancer in Taiwan. Sci Rep. 2017, 7, 1–13. [CrossRef]

47. Cochran, W.G. Sampling Techniques; John Wiley & Sons, Inc.: New York, NY, USA, 1977.
49. Wang, E.S.T.; Lin, H.C. Sustainable development: The effects of social normative beliefs on environmental behaviour. Sustain. Dev. 2017, 25, 595–609. [CrossRef]

50. Maio, G.R.; Willis, H.; Hewstone, M.; Esses, V.M. Intergroup attitudes and attitudes towards devolution: Field and laboratory experiments. Br. J. Soc. Psychol. 2003, 42, 477–493. [CrossRef]

51. Gao, Y.; Li, H.; Luo, Y. An empirical study of wearable technology acceptance in healthcare. Ind. Manag. Data Syst. 2015, 115, 1704–1723. [CrossRef]

52. Barber, N.A.; Taylor, D.C. Experimental approach to assessing actual wine purchase behavior. Int. J. Wine Bus. Res. 2013, 25, 203–226. [CrossRef]

53. Fornell, C.; Larcker, D.F. Evaluating structural equation models with unobservable variables and measurement error. J. Mark. Res. 1981, 18, 39–50. [CrossRef]

54. Bagozzi, R.P.; Yi, Y. On the evaluation of structural equation models. J. Acad. Mark. Sci. 1988, 16, 74–94. [CrossRef]

55. Baron, R.M.; Kenny, D.A. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. J. Pers. Soc. Psychol. 1986, 51, 1173–1182. [CrossRef] [PubMed]

56. Tarkiainen, A.; Sundqvist, S. Subjective norms, attitudes and intentions of Finnish consumers in buying organic food. Br. Food J. 2005, 107, 808–822. [CrossRef]

57. Singh, A.; Kathuria, L.M. Understanding drivers of branded food choice among low-income consumers. Food Qual. Prefer. 2016, 52, 52–61. [CrossRef]

58. Fang, W.T.; Ng, E.; Wang, C.M.; Hsu, M.L. Normative beliefs, attitudes, and social norms: People reduce waste as an index of social relationships when spending leisure time. Sustainability 2017, 9, 1696. [CrossRef]

Publisher’s Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.

© 2020 by the author. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (http://creativecommons.org/licenses/by/4.0/).