Taiwanese Consumers' Flow Search Experience: An Exploratory Study

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Abstract

Consumers display two patterns of online search behavior. Experiential consumers are highly engaged with the site and indulge in site exploration. On the other hand, utilitarian or search-dominant consumers are highly focused in search of specific information or fulfilling a task. Their search behavior involves the features and interface provides by the site, also known as site interactive modality, or online interaction. The multimedia features of a site typify it as either passive or dynamic. This study, in a laboratory experimental setting, presents a review of current literature relating to the consumer's flow search experience created by browsal search behavior and online interaction. Consumers feel a heightened state of concentration and enjoyment when absorbed in online search, which is known as flow search experience. Through a laboratory experiment in Taiwan, we present an exploratory descriptive study measuring the effect of browsal search behavior and online interaction on flow search experience.

Keywords: Flow theory, search behavior, search experience, multimedia, interactivity, consumer behavior, Taiwan

1. Introduction

Taiwan has a dynamic capitalist economy characterized by reducing state directives on investment and foreign trade (Economy Watch, 2020), with an official rate GDP of $611.391 billion in 2019 and a population of 23.57 million in July 2021 (Central Intelligence Agency, 2020). In 2019, Taiwan's trade in goods and services with the U.S. amounted to about $103.9 billion, comprising imports of $42.3 billion, and exports of $61.6 billion, leaving the U.S. with a total trade deficit with Taiwan of $19.3 billion. Taiwan ranked #10 among the biggest goods trading partner to the US (Office of the United States Trade Representative, Executive Office of the President, 2020). On account of these factors, we believe that Taiwanese customers would share cultural patterns with Western counterparts, and would tend to also display similar online search and related processes.

Moreover, in 2018 Taiwan had about 22 million Internet users, comprising almost 93% of the population (Central Intelligence Agency, 2020), thereby creating a strong base of potential online consumers. Of these, 98% use a mobile phone, 59% use a personal computer, and 51% use a tablet. In the last five years, the Taiwanese e-commerce market has grown at 7% per year, to reaching $38.92 billion in 2018. Also, in 2019, Taiwan has the largest percentage (65.2%) of e-commerce shoppers in Asia. Online expenditure averaged $866 in 2018. Following this trend,

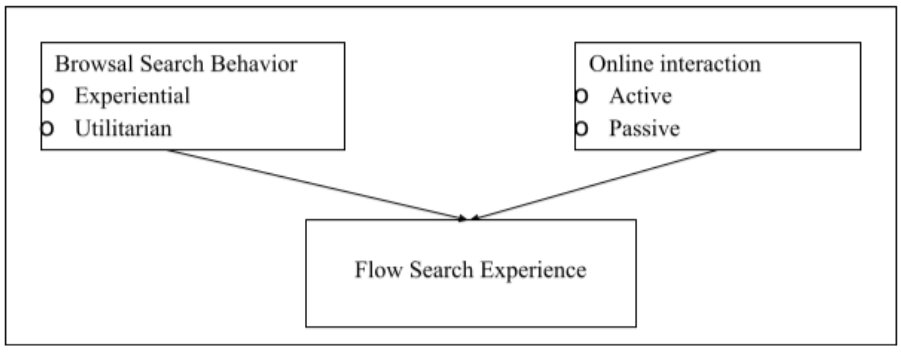
an increasing proportion of young consumers are purchasing online, especially on digital entertainment, clothing/footwear, and electronics. With heightened e-consumer expectations, new opportunities are opening up for providers of online goods and services (International Trade Administration, Department of Commerce, United States of America, 2020).

A recent study (Vuylsteke, Wen, Baesens, and Poelmans, 2010) identified cultural and other characteristics among Chinese customers, which impacted their online search and related behavioral processes, making them distinctly different from customers in Western Europe. However, as opposed to China, Taiwan is a capitalist economy that follows a democratic system of government with universal suffrage, a civil law system, and constitutionally guaranteed freedom of the press (Central Intelligence Agency, 2020). On account of these factors, we believe that Taiwanese online consumers would share some cultural patterns with US counterparts, and would tend to also display similar online search and related processes. However, scant research attention has been paid to Taiwanese consumers' online behavior, hence the importance of conducting our study in Taiwan. This present study explores the effects of Taiwanese consumers' browsal search behavior (hedonic as opposed to utilitarian) and online interaction (passive opposed to dynamic) on the flow search experience in a laboratory experiment, in an online apparel site.

Clothing is traditionally evaluated based on sight, touch, and trial. Consumers are enticed to explore merchandise with store displays, appealing aural olfactory stimulation, mirrored trial rooms, low-noise and carpeted flooring, as well as consulting store salespersons and peer customers. These features of the shopping experience are traded off with savings and convenience. A richly designed website makes the shopping experience more engaging and enjoyable (Koufaris, 2002, Lohse, 1998, Seock & Bailey, 2008). It would be essential to enable smooth online search experiences through appropriate site modality.

System quality to assess customer satisfaction is determined by search behavior and online interaction (McKinney, Yoon, & Zahedi, 2002). Web users get first-hand experience of a website by navigating and browsing (also called "browsal search behavior"). This behavior is manifested through an experiential or utilitarian type of search (Assael, 1998, Hoffman & Novak, 1996, Holbrook & Hirschman, 1982, Novak, Hoffman, & Yung, 2000, Wolfinbarger & Gilly 2001). Experiential users cherish the feel of the search and enjoy exploring the site. On the other hand, utilitarian users typically find information via the "Search" link to locate a specific piece of information or carry out a task, with minimal exploration and browsal of a site's various features. In turn, the browsal search behavior lends itself to various interactive features of a site and its interface, which constitutes the online interaction. This modality can be classified as passive or dynamic, depending on the various multimedia and interactive features of the site.

Figure 1: Research Model



Browsal search behavior and online interaction impact the search experience, as users are accessing sites and their product or services through the interactive elements of interface (Figure 1). This interactive system impacts the user experience in eCommerce, creating a potential flow search experience. The flow construct was developed by Csikszentmihalyi (1975, 1990, 2000), and is defined as: "A state in which people are so involved in an activity that nothing else seems to matter; the experience is so enjoyable that people will continue to do it even at great cost, for the sheer sake of doing it." (Csikszentmihalyi, 1990).

2. Literature Review and Research Questions

Several researchers have typified browsal search behavior as experiential, also known as hedonic, or link-dominant, and utilitarian, or search-dominant, (e.g., Assael, 1998, Hoffman & Novak, 1996, Holbrook & Hirschman, 1982, Mahfouz, Joonas, and Opara, 2020, Novak et al., 2000, Wolfinbarger & Gilly 2001). Koufaris (2002) likened the importance of different dimensions of human-computer interaction to that of other elements of brand strategy, given the behavior of online consumers, as regular searchers in decision-making, as well as computer users (Koufaris, 2002). Further, online search behavior and online interaction are important determinants of customer behavioral outcomes (Bolton & Saxena-Iyer, 2009). Besides efficiency, consumers seek fun and value entertainment in online search and shopping (Koufaris, 2002), particularly in the purchase of clothing (Kim and Neihm, 2009). Especially in the case of fashion brands, sensory, cognitive, and affective brand experiences online, affect the relational experience, and create brand awareness and loyalty in the retail environment (Huang, Lee, Kim, & Evans, 2015). McKinney et al. (2002) opined that site browsal and usability are key factors in the assessment of system quality and online customer satisfaction. Other authors associated website success with browsal, download time, content, site interactivity, and responsiveness (e.g., Palmer 2002). Site usability studies identified about 20 percent of web users as link-dominant, or experiential in their behavior; while more than 50 percent as utilitarian, and seek the "Search" button to identify particular information, or complete a particular task (Nielsen, 2000).

Experiential, hedonic, or link-dominant users experience enjoyment while shopping online (Assael, 1998, Novak et al., 2000), seek pleasure in finding online deals, as well as engaging in social interaction during search and purchase, and explore sites to feel joy in search and shopping for a product or service, being involved though emotions and fun, often using the site for enjoyment or chatting online (Novak et al., 2000). For these searchers, online sensory stimulation through interactivity is crucial, with a higher likelihood of using search engines (Wolfinbarger & Gilly, 2001). Repeat visits to enjoyable websites are common, and are the result of perceived usefulness accompanied by shopping enjoyment provided by a website (Koufaris, 2002). Conversely, a website's user-unfriendliness, coupled with limited browsal interferes with user control, causing unpleasant emotions and lower likelihood of repeat visits (Dailey, 2004).

In contrast, utilitarian or search-dominant searchers, look upon searching as a means; they are described as "task-oriented" and have a specific goal to look for practical benefits and information regarding product functions, whether browsing online or in a brick-and-mortar store (Assael, 1998, Novak et al., 2000). Instances for going online may include work, or job-hunting (Novak et al. 2000). However, online customers are not simply looking for efficiency in searching and shopping but value entertainment while shopping (Koufaris, 2002). Moreover, literature informs us that an interactive brand website results in cognitive, attitudinal, and

behavioral responses, which are explained by the flow experience (Van Noort, Voorveld, & Van Reijmersdal, 2012). As opposed to websites for use by not-for-profits and informational purposes, commercial websites need to be more interesting and engaging (Shneiderman, 1998).

Online interaction refers to the personalized interface or interaction between user and the system (Palmer, 2002). Websites possess the unique distinction of engagement of users through a high level of rich multimedia and interactive features (Agrawal & Venkatesh, 2002). Control through customization and personalization, in addition to multimedia potential, is greatly valued (Palmer, 2002). The user experience is made unique, accompanied by personalized welcome, user profile-driven offerings, and purchase advice. Features such as chat rooms and forums enable communication with seller personnel, and the availability of product ratings generate a feeling of community belonging, (Alba, Lynch, Weitz, Janiszewski, Lutz, Sawyer, & Wood, 1997). A higher level of dynamic or "active" online interaction features of a site creates a more positive user engagement (Schmitt, 1999). Online searchers find greater engagement in 3D visual simulation and images (Li, Daugherty, & Biocca, 2001). At least one study supported an increase in the enjoyment dimension within the flow search experience, resulting from a higher level of online interaction (Skadberg & Kimmel, 2004). Brick and mortar retail cannot match several of these dimensions associated with online interaction, which makes virtual search and shopping akin to reality. In addition, Huang (2003) reported a significant effect of online interaction on cognitive enjoyment, a construct from Webster et al. (1993).

Online search entails user capability in completing a specific task, be it search and purchase or entertainment. Both are accomplished with a user-controlled interface, in which the user is likely to lose track of time. The user experiences high engagement, complete concentration, deep immersion in the task, and a feeling of time distortion may result in a "flow search experience state", enabled by the Web (Chen, Wigand, & Nilan, 1999, Novak et al., 2000). Flow search experience or flow theory (Csikszentmihalyi 1975, 1990, 2000), states that individuals achieve a state of flow search experience when they are engrossed in an activity that they may lose awareness of their environment, time, and even self. This is exemplified in athletes "entering the zone", and video gamers "being lost in the experience".

During online interaction, experiential users enjoy browsing the website and its features, as opposed to utilitarian users who aim to complete a task with efficiency, and with the least search experience. Also, experiential users claim higher levels of engagement, and enjoyment on the website (Babin et al, 1994), while utilitarian users report disappointment at not completing the planned task (Babin et al, 1994). Therefore, as experiential users are highly engaged in their searching, we expect they will have a greater online flow search experience for products and services. Based on this, we state:

Research Question 1: In Taiwan, will experiential online behavior result in a greater flow search experience than utilitarian online behavior?

Further, online interaction is a crucial part of the online flow search experience, since it is encompassed in web interface dimensions of content and design (Wolfinbarger & Gilly, 2001). The web interface precedes search and selection of products and services. Higher levels of rich media are associated with higher levels of users' online flow search. Literature supports the impact of online interaction on online flow search experience (Chen et al., 1999, Novak et al., 2000). Based on this, we present:

Research Question 2: In Taiwan, will active online interaction websites create a higher degree of flow search experience compared to passive online interaction websites?

In our 2X2 experimental design, experiential search behavior and active interaction sites (or utilitarian users and passive sites) is expected to generate higher levels of flow search experience. More engaging sites have dimensions that create fun and enjoyment for users with experiential behavior, as opposed to simply-structured passive sites with fewer dimensions, appropriate for focused utilitarian users. Based on the above, we state:

Research Question 3: In Taiwan, will experiential online behavior with active online interaction websites, or utilitarian online behavior with passive online interaction websites, result in a greater flow search experience than experiential online behavior with passive online interaction websites, or utilitarian online behavior with active online interaction websites?

Since this is a block design, and following the assumption prescribed by Lentner and Bishop (1993), our model excludes interaction between the factors (i.e., no social media x learning style interaction).

This present exploratory descriptive study examines in a laboratory experiment on an online clothing website, the impact of two types of browsal search behavior - experiential and utilitarian, and two levels of online interaction - passive and active, on the flow search experience.

3. Methodology

As discussed above, we conducted an experiment among university students in a computer laboratory in Taiwan. The experimental design was a randomized complete block design (Keppel, 1991, Montgomery, 2001), with browsal search mode as the blocking factor. There were two independent variables or factors with two levels each: browsal search behavior (hedonic as opposed to utilitarian) and online interaction (passive opposed to dynamic). Hence, there were four treatments. The dependent variable was flow search experience. Subjects comprised business students in a university in Northern Taiwan, and were randomly assigned to the treatments. The sample consisted of 210 students in a Taiwanese university. Analysis was done with tabulation, frequencies, means and standard deviations, with the statistical model depicted in Figure 2 (Montgomery, 2001).

Table 1: Treatment combinations (Montgomery, 2001)

Factor		Treatment
A	B	Combination
-	-	Utilitarian browsal behavior, Passive online interaction
+	-	Experiential browsal behavior, Passive online interaction
-	+	Utilitarian browsal behavior, Active online interaction
+	+	Experiential browsal behavior, Active online interaction

Figure 2: Statistical Model

$$y_{ijk} = \mu + \tau_i + \beta_j + (\tau\beta)_{ij} + \varepsilon_{ijk}$$

$i = 1, 2$
$j = 1, 2$
$k = 1, 2, \ldots, n$

where

y_{ijk} = the overall effect of flow search experience of the kth subject
μ = the overall mean effect
τ_i = the effect of the ith level of browsal search behavior
β_j = the effect of the jth level of online interaction
$(\tau\beta)_{ij}$ = the effect of the interaction between the ith level of browsal search behavior and jth level of online interaction
ε_{ijk} = the random error component

Independent variable- online behavior: Participants were asked to complete a survey to ascertain the type of browsal behavior, based on Babin et al. (1994) personal searching value instrument, comprising six items, three each for experiential and utilitarian scales. Items were measured on a seven-point Likert scale, with anchors being 1 = strongly disagree, 4 = neutral, and 7 = strongly agree.

Independent variable – online interaction: Subjects were randomly assigned to either a passive online interaction level website or an active online interaction level website. Subjects assigned to the passive level were instructed to avoid using any of the site's active features.

Dependent variable – flow search experience: This variable was assessed using the six-item flow user experience instrument (Webster, Trevino, & Ryan, 1993), with each item measured on a seven-point Likert scale anchored by 1 = strongly disagree, 4 = neutral, and 7 = strongly agree (Table 2).

Table 2: Scale Items

Scale Items	Variable
Online Behavior Scale	
Online searching truly feels like an escape.	behvrExp1
During searching online, I feel the excitement of the hunt.	behvrExp2
While searching online, I feel a sense of adventure.	behvrExp3
I accomplish just what I want to while searching online.	behvrUtil1
I buy what I really need.	behvrUtil2
While searching online, I find just the items I am looking for.	behvrUtil3
Flow Experience Scale	
Interacting with the site made me curious.	flow1
Using the site was intrinsically interesting.	flow2
While using the website, I was in a state of concentration.	flow3
I felt that I had control over my interaction with the site.	flow4
Using the site heightened my enjoyment.	flow5
When using site, I was totally absorbed in what I was doing.	flow6

Experimental Laboratory Environment

As stated above, **t**he experiment was conducted in the controlled environment of a laboratory with computers having a fast Internet connection with Microsoft Internet Explorer. Subjects navigated one of two commercial apparel retailers' sites. Subjects comprised students in a Taiwanese university. Participation was voluntary, with an incentive of 15 points extra credit out of a possible 750 points in the course, or 2%. Non-participants were offered an equivalent homework assignment for extra credit that took approximately the same time and effort and awarded the same 15 points of extra credit, in the form of a one-page write-up on an Internet article in a trade journal in the business field on the subject of new emerging technology. The sample comprised 210 students, being randomly assigned between a passive online interaction and an active one.

Laboratory procedures: Subjects were given a session task packet in Taiwanese translation, comprising a consent form, personal searching value scale, online task requirement, and follow-up questionnaire. After signing a consent form, they completed the personal searching value scale (Babin et al., 1994) to classify browsal search behavior (experiential or utilitarian), access a randomly assigned treatment website (passive versus active online interaction), navigate the site, complete the online searching task, and fill a follow-up questionnaire about their searching experience (Webster at el., 1993). Each session was about 60 minutes' duration. The experiment set-up followed the process described in the literature (e.g., Mahfouz, Joonas, and Opara 2020).

As explained above, analysis was completed with the use of tabulation, means and standard deviations. In order to ensure reliability (Cronbach, 1951), we used previously validated and reliable scales as recommended in the literature (Straub 1989). To achieve construct validity (Cook & Campbell, 1979, Kerlinger & Lee, 2000), we based our experiment on validated scales from the literature (Straub, 1989).

4. Statistical Analysis

Sample Demographics

In the sample of 210 students, 43% were male, and 57% were female. Twenty-eight percent of the students were in the age group 19-21 years, 35% were 22-24 years old, and 36% were 25 years or older. About 71% of the sample comprised undergraduate students, while 29% comprised graduate students. Over half of the sample reported using the Internet for social media, followed by 20% for shopping, 11% for news, 10% for games, and only 7% for school learning purposes. The biggest proportion of the sample – 28% of respondents - were heavy users of the Internet at over 40 hours a week, only 13% stated being online 9 hours a week or less, while 60% reported being online between 10 and 39 hours a week (Table 3).

Table 3: Sample Demographics

Item	Frequency	Proportion (%)
Gender		
Male	91	43
Female	119	57
Age		
18	1	< 1
19-21	58	28
22-24	73	35
25-27	7	3
28 or more	70	33
Degree		
High School	22	11
Associate	2	< 1
Bachelor's	125	60
Master's	61	29
Ph.D.	0	0
Internet Usage		
School	15	7
Shopping	42	20
Games	21	10
News	24	11
Social Media	108	51
Hours Online (Weekly)		
9 and under	27	13
10-19	42	20
20-29	43	20
30-39	39	19
40+	59	28

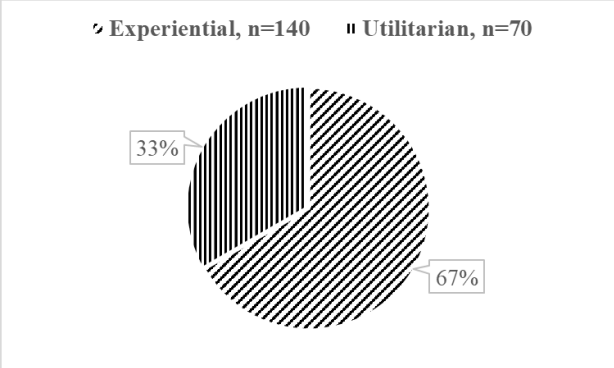
N= 210

Frequency Distribution of Variables

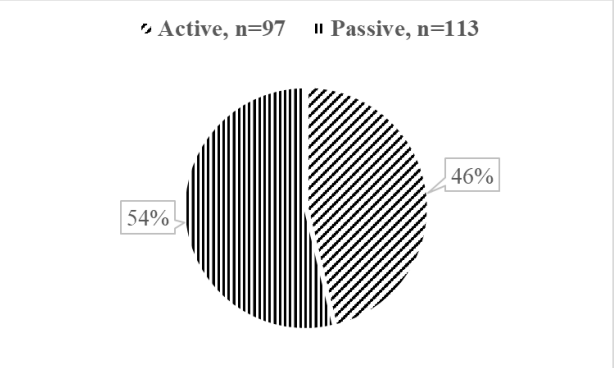
The largest proportion, 67% of the respondents were classified as having experiential online behavior, and only 13% showed utilitarian online behavior. Based on random assignment, 46% were assigned to an active online interaction website, and 54% were assigned to a passive online interaction website (Table 4).

Table 4: Frequency Distributions of Variables

Online Behavior



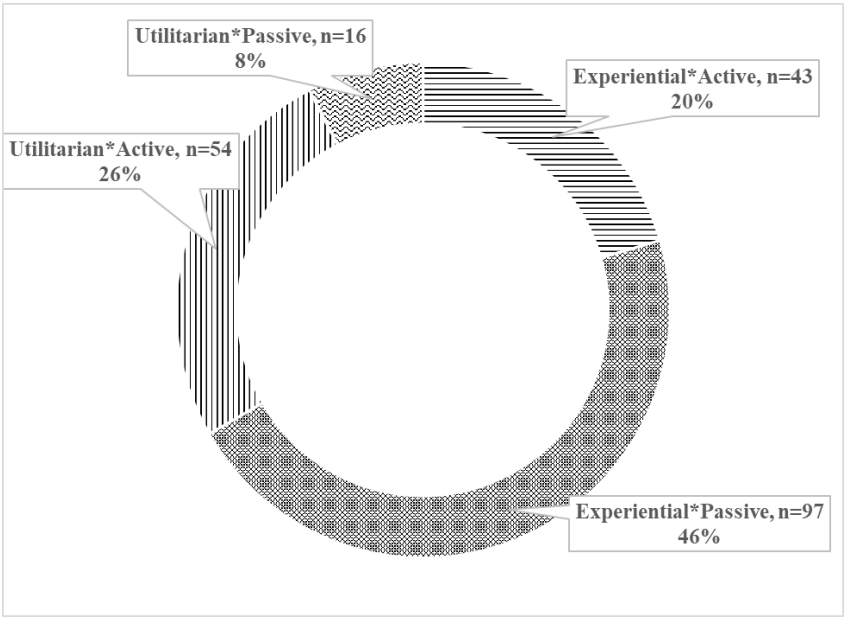
Online Interaction



Block Treatment Cells

Forty-six percent of respondents were found to have experiential online behavior assigned to a passive online interaction site, 26% had Utilitarian online behavior assigned to an Active online interaction site, 20% had experiential online behavior assigned to an Active Interaction site, and only 8% had Utilitarian online behavior assigned to a passive Interaction site (Table 5).

Table 5: Block Treatment Cells



Reliability

Reliability is the extent to which an item, scale, or instrument produces the same values when given at different times, places, or populations (Cronbach, 1951). Overall reliability on the flow search experience scale was found to be high, with Cronbach's alpha being .86 (Table 6).

Table 6: Reliability – Flow Search Experience Scale

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
flow1	210	4.68571	1.04276	984.00000	1.00000	7.00000
flow2	210	4.87143	1.08387	1023	1.00000	7.00000
flow3	210	4.67619	1.23347	982.00000	1.00000	7.00000
flow4	210	4.32381	1.06708	908.00000	1.00000	7.00000
flow5	210	4.69048	1.10865	985.00000	1.00000	7.00000
flow6	210	4.70952	1.23211	989.00000	1.00000	7.00000

Cronbach Coefficient Alpha	
Variables	**Alpha**
Raw	0.864231
Standardized	0.865004

Validity

The term validity answers the question, "Are we measuring what we claim to be measuring?" To satisfy construct validity, our study was based on a robust literature review, and we used previously validated and reliable instruments (Boudreau et al., 2001, Straub, 1989). Also, we used factor analysis with the principal factor method in SAS 9.4, with Equamax rotation. Variables / scale items were retained under a factor, as long as it fell on its corresponding factor from the original scales, and had a factor loading value >= | .50 | (See Table 7).

Factor Analysis

Interpretation of factors corresponds to two levels of online behavior, and flow. The first three items on the online behavior scale fell on Factor 1 - experiential online behavior, with factor loadings between .63 and .75. The next three items on the online behavior scale, fell on Factor 2 - Utilitarian online behavior, with loadings between .79 and .87. Finally, five items on the Flow Experience scale fell on Factor 3 – Flow, with loadings between .58 and .82. (Table 7).

Table 7: Construct validity - Factor Analysis

Variables	Factors and Factor Loadings		
	Factor 1	Factor 2	Factor 3
behvrExp1	.75		
behvrExp2	.76		
behvrExp3	.63		
behvrUtil1		.80	
behvrUtil2		.79	
behvrUtil3		.87	
flow1			.58
flow2			.76
flow3			.76
flow4			.65
flow5			.82

Internal validity involves the causation or existence of a relationship between the independent and dependent variables (Cook & Campbell, 1979). The use of a controlled lab experiment increases internal validity. Also, random assignment of treatments helps internal validity. We used 2 sites to assign treatments, thus differentiating the passive vs. active online interactions significantly. External validity refers to generalizability of results from a given sample to the entire population and other settings (Cook & Campbell, 1979). The homogeneity of the study's sample, comprising students at a university, helps satisfy external validity. Also, the study's random sample reflects online users, thus improving external validity. According to the literature, 25% of online shoppers are college-students (Park et al., 2017, Seock & Bailey, 2008), so the sample reflects online users. Statistical conclusion validity entails having findings and conclusions that are based on sound statistics (Cook & Campbell, 1979, Garson, 2012). A higher sample size increases power, and we had a robust sample of 210 respondents. In addition, the study sample was random, thus increasing statistical conclusion validity.

5. Results and Discussion

Online Behavior

Experiential online behavior, as discussed previously, is displayed by subjects who like the experience of shopping, and view it as a pleasurable event, and not just a means to an end. This variable was measured by a Likert scale (Babin et al., 1994 browsal search behavior scale) with anchors 1 = strongly disagree and 7 = strongly agree. Flow search experience was measured by a Likert scale (Webster at el., 1993 flow user experience instrument) anchored by 1= strongly disagree, and 7 = strongly agree. Online behavior with the greatest flow experience was

experiential (M = 4.68, SD = 0.86). This finding helps answer Research Question 1, and we conclude that in Taiwan, experiential online behavior will result in a greater flow search experience than utilitarian online behavior. This finding confirms and extends extant literature (e.g., Babin et al., 1994) (Table 8).

Table 8. Flow Search Experience Means and Standard Deviations

Online Behavior	N	Flow Search Experience*	
		Mean	SD
Experiential	140	4.68	0.86
Utilitarian	70	4.61	0.91
Online Interaction	**N**	**Flow Search Experience***	
		Mean	**SD**
Active	97	4.67	0.92
Passive	113	4.65	0.84

Treatment Combinations

Online Behavior	Online Interaction	N	Flow Search Experience*	
			Mean	SD
Experiential	Active	43	4.63	0.95
Experiential	Passive	97	4.71	0.82
Utilitarian	Active	54	4.70	0.90
Utilitarian	Passive	16	4.32	0.90

*Likert scale anchors: strongly disagree = 1, strongly agree = 7

Online Interaction

As discussed above, subjects were randomly assigned to either a passive online interaction level website or an active online interaction level website. Subjects assigned to the passive level were instructed to avoid using any of the site's active features. Flow search experience was measured by a Likert scale (Webster at el., 1993) anchored by 1= strongly disagree, and 7 = strongly agree. Online interaction with the greatest flow experience was Active (*M* = 4.67, *SD* = 0.92), compared to passive (M = 4.65, SD = 0.84). As explained earlier, Active online interaction refers to a site or app with rich, vivid, and engaging multimedia interactions and communications tools. This finding helps answer Research Question 2, and we conclude that in Taiwan, active online interaction websites will create a higher degree of flow search

experience compared to passive online interaction websites. Also, our finding supports and extends current research (e.g., Chen et al., 1999, Novak et al., 2000), Wolfinbarger & Gilly, 2001) (Table 8).

Treatment combinations

Contrary to our expectations, in terms of treatment combinations of online behavior and online interaction, the greatest flow search experience was for experiential online behavior and passive online interaction (M = 4.71, SD = 0.82). In terms of the four block*treatment cells, the greatest proportion of the sample was experiential and passive (n = 97, 46%). The second highest flow search experience was for Utilitarian online behavior with Active online interaction (M = 4.7, SD = .90). Flow search experience was lower for experiential online behavior with Active online interaction (M = 4.63, SD = .095), and the least was for Utilitarian online behavior with passive online interaction (M = 4.32, SD = .90) (Table 8). In answer to Research Question. 3, results show that in Taiwan, experiential users in this sample prefer simpler sites and apps, void of the distractions of interactive features. In this regard, literature describes the impact of culture on consumer behavior (e.g., Bhuian, Joonas, and Ruiz, 2010, Hofstede 1980, Hofstede 1987, Hofstede 2001, Hofstede 2010). These studies evidence the effects of a society's culture on the values, and the effects of these values on consumer behavior. Some cultural dimensions include individualism-collectivism; uncertainty avoidance; power distance, masculinity-femininity (task-orientation versus person-orientation, long-term orientation, and indulgence versus self-restraint. Profiles of western countries based on these dimensions are in stark contrast to those in the orient. The impact of culture on flow search experience would bear a closer scrutiny.

6. Future Research and Conclusions

It would be interesting to conduct a deeper investigation among a larger number of students in multiple universities. Further, an experimental setting may not accurately reflect actual behavioral processes, and a laboratory may not fully represent real-world scenarios, despite the fact that it does help with internal validity (tighter control). In addition, college students may not be generalizable to all populations, although college students are online users and do represent Internet users. Moreover, there might be differences between online search behavior between undergraduate and graduate students, and it may be interesting to study any differences between these two levels of students. Also, it is possible that the sample is overly homogenous, and a more diverse sample might yield richer results; in our research a homogenous sample helped establish external validity. It is interesting to note that the standard deviations of the sample for all variables in the model were < 1.0. It is the authors' experience that of many past samples using 7-point Likert scales, their standard deviations were > 1.0. This may imply more uniformity and conformity in the responses of the sample. This may imply more uniformity and conformity in the responses of the sample

The present exploratory descriptive study shed light on Taiwanese consumers' flow experience, on which there is not an abundance in the literature. For future research, given the study was conducted in Taiwan, it would be interesting in the future to explore cultural differences between samples in selected countries around the world and determine their level of flow experience, as well as their proportions in terms of online behavior classifications, as either experiential or utilitarian. Our study determined the effects of online behavior and online

interaction on flow among Taiwanese consumers. Overall, experiential Taiwanese consumers attained higher flow experience in comparison to utilitarian ones. Sixty-seven percent of the sample were classified as experiential, while 33%, were classified as utilitarian. Overall, active online interaction induced more flow experience. Specifically, experiential Taiwanese users using passive online interaction had slightly higher flow experience.

Although a vast majority of consumers plan their online purchases, for a significant proportion of consumers, browsing and navigating leads to actual purchases. (Wolfinbarger & Gilly, 2001). In view of this fact, it would be fruitful for online stores to cater to both hedonic and utilitarian needs of searchers and online consumers (Koufaris, 2002), as this may impact their intention to buy after browsal search and navigation. Higher interactive modality leads to positive consumer attitudes towards a website (Coyle & Thorson, 2001, Kim and Niehm, 2009, Teo et al., 2003), impacting purchase intent (Jee & Lee, 2002, Kim and Niehm, 2009).

Our research extends the body of knowledge in marketing, consumer behavior, digital marketing, information systems, ecommerce, marketing and business communications, and psychology. Our research investigates the impact of browsal search behavior and online interaction on flow search experience among Taiwanese consumers in the light of cultural patterns (e.g., Vuylsteke, Wen, Baesens, and Poelmans, 2010). Our results are useful to academia and practitioners alike. Specifically, human-computer interaction and website design researchers will benefit from knowing the effects of browsal search behavior and online interaction on user experiences and link them to flow experience or theory. Designers need to take into account the impact of flow search experience on website's interface design to match consumers' browsal search patterns and interactive needs. Developers will be able to build better websites to meet the interactive demands of consumers, offering consumers greater control, along with built-in customization, and personalization. Designers would tailor content and social media interface capabilities for hedonic consumers, and they would aspire toward accessibility and user-friendly interface for utilitarian searchers (Kim and Niehm, 2009, van Noort, Voorveld, and van Reijmersdal, 2012, Wolfinbarger & Gilly, 2001). In sum, the flow search experience during online shopping would be more satisfying, leading to increased repeat site visits (Koufaris, 2002, van Noort, Voorveld, and van Reijmersdal, 2012), and increased time spent on the website, the number of "hits" or visitors on the site, and increased brand recognition or awareness among target consumers (Creswell, 2011, van Noort, Voorveld, and van Reijmersdal, 2012).

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