

Passengers' shopping motivations and commercial activities at airports – The moderating effects of time pressure and impulse buying tendency

Yi-Hsin Lin ^{a,1}, Ching-Fu Chen ^{b,*}

^a Department of Leisure and Recreation Management, Asia University, Taiwan, 500, Lioufeng Road, Wufeng, Taichung, 41354, Taiwan

^b Department of Transportation and Communication Management Science, National Cheng Kung University, 1, University Road, Tainan 701, Taiwan

H I G H L I G H T S

- ▶ The paper examines shoppers motives and their impacts on airport commercial activities.
- ▶ Data are derived from a sample of shoppers at Taiwan's Taoyuan International Airport.
- ▶ Three key factors were found impacting airport commercial activities.
- ▶ Two moderating variables of time pressure and predisposition to impulse buying were found.

A R T I C L E I N F O

Article history:

Received 28 November 2011

Accepted 29 September 2012

Keywords:

Shopping motivations
Time pressure
Impulse buying tendency
Commercial activities
Airport

A B S T R A C T

The contribution of retailing to total airport revenue is becoming more important. This study examines the relationship between passengers' shopping motivations and their commercial activities at airports, as well as the moderating effects of time pressure and impulse buying on this relationship. A sample of passenger survey data was collected at Taiwan's Taoyuan International Airport. Three shopping motivations, namely, "favorable price and quality", "environment and communication", and "culture and atmosphere," are identified based on the results of factor analysis. The results reveal that passenger shopping motivations have positive impacts on commercial activities at the airport, and furthermore both time pressure and impulse buying tendency moderate the relationship between shopping motivations and commercial activities.

© 2012 Elsevier Ltd. All rights reserved.

1. Introduction

As shopping is one of the most popular activities that travelers engage in at airports, retailing thus plays an important role in airport operations (Crawford & Melewar, 2003), and is a valuable source of revenue (Geuens, Vantomme, & Brengman, 2004; Rowley & Slack, 1999). Many airports are thus engaging in initiatives to enlarge and enhance their commercial offerings, with some reporting that non-aviation revenues account for as much as 53 percent of total revenues (Castillo-Manzano, 2009; Graham, 2009; Painvin, 2011; Zhang & Zhang, 1997). Such non-aviation revenues come not only from air passengers, but also from airport employees and visitors, due to the growth of airport-linked business (Kasarda, 2008). A better understanding of the relationship between

travelers' shopping motivations and their commercial activities within an airport could provide airport operators with useful operational and strategic insights, and this is one of the reasons for the current study.

Airports are unique retailing environments in which travelers experience feelings of anxiety, stress and excitement, which can make them react in unusual ways, and thus they are unlike general shoppers in a high street situation. Many travelers suffer from a certain degree of anxiety and/or have certain expectations about their journeys (Crawford & Melewar, 2003; Newman & Lloyd-Jones, 1999), and while waiting for their flights are able to engage in various activities, with the two most popular being shopping and eating (Geuens et al., 2004; Kim & Shin, 2001). Passengers are likely to feel time pressure in an airport for several reasons, such as the security checks, the often long distances between passport control and the gates, and the generally non-familiar environment, which can be very disorienting. To avoid this, many people now arrive very early for their flights, and thus there has been an increase in passenger "dwell time", the time spent within the terminal building prior to departure, and identified as a 'happy hour' by

* Corresponding author. Tel.: +886 6 2757575x53230.

E-mail addresses: yhlin1218@asia.edu.tw (Y.-H. Lin), cfchen99@mail.ncku.edu.tw (C.-F. Chen).

¹ Tel.: +886 4 23323456x20056.

Thomas (1997). In addition, airports provide an environment that can trigger passengers' impulsive buying behaviors, with highly impulsive shoppers being especially receptive to sudden, unexpected buying ideas (Omar & Kent, 2001). Geuens et al. (2004) argue that almost 60 percent of air travelers can be categorized as impulsive buyers, while Topping (2010) estimates that 27 percent of airport purchases are made on impulse. This environment has attracted the interest of many major retailers (Grant, 2006). Therefore, we postulate time pressure and the impulse buying tendency act as salient two personal characteristics of passengers in their commercial activities in an airport context.

In this study we investigate the relationship between passengers' shopping motivations and commercial activities within an airport environment. Furthermore, the moderating effects of passengers' time pressure and impulse buying tendency on the motivation–activity relationship are also examined to provide more insights into air passengers' shopping behavior.

2. Conceptual background and hypothesis development

2.1. Shopping motivation

When contrasted with daily shopping routines and venues, the exotic stimuli and situations provided by an airport may evoke shopping motivations that differ from those for general shopping. Geuens et al. (2004) categorize four different types of airport shopping motivations: (1) functional motivation (such as a good price, convenience and quality shopping); (2) experiential motivation (such as promotions and buying to indulge oneself); (3) airport-atmosphere-related motivation (such as impulse purchasing, pre-planned purchases and purchasing out of boredom); and (4) airport-infrastructure-related motivation (such as service in the shops, and multilingual staff and promotional materials). Their results show that 35 percent of airport users are converted to purchasers, reflecting the influences of the airport environment and the psychological factors of air travel in passenger purchasing behavior. In addition, gift buying, either for a friend or to take advantage of duty-free offers (Omar & Kent, 2001) is one dominant shopping aim in the airport retailing context (Perng, Chow, & Liao, 2010). Therefore, we propose our first hypothesis, as follows:

H1. Passengers' shopping motivations have a positive effect on their commercial activities within an airport.

2.2. Time pressure

Time pressure is widely viewed and treated as a situational variable affecting consumers' decision-making within a store environment (Herrington & Capella, 1995; Iyer, 1989; Vermeir & Van Kenhove, 2005). Bowes (2002) identifies time and emotion as two of the key factors affecting passengers' shopping behaviors within an international airport terminal. In particular, after arriving at the airport and receiving their boarding passes, the passengers' excitement remains high while their stress levels are reduced (Thomas, 1997). According to the "travel stress curve", passengers' stress levels vary during the time spent at the airport (Scholvinck, 2000). The curve identifies the period between 'immigration' and 'pre-flight security' as the 'captive customer segment,' because the stress level decreases significantly during this period and encourages passengers to engage in commercial activities. According to Kim and Kim (2008), the level of time pressure significantly moderates the influence of shopping enjoyment on the browsing mode. Holiday and leisure travelers are found to spend more of their time in the terminal compared to business travelers, who

usually experience higher levels of time pressure (Tosic, 1992). In addition, Torres, Domínguez, Valdés, and Aza (2005) find out that business travelers tend to consume more than vacation travelers when the boarding time is less than 45 min. Therefore, we propose our second hypothesis, as follows:

H2. Passengers' time pressure moderates the relationship between shopping motivations and commercial activities within an airport.

2.3. Impulse buying tendency

Impulse buying behavior refers to an unplanned and spur-of-the-moment decision to purchase (McGoldrick, 1990). Non-economic reasons, such as fun, fantasy and social or emotional gratification, may trigger consumers to purchase impulsively (Hausman, 2000). Consumer shopping behavior may change due to the exciting and non-home atmosphere of travel. Thomas (1997) examines how emotional shifts in terms of the level of stress and excitement affect travelers' impulsive buying behavior in an airport environment. After receiving their boarding passes, passengers experience lower stress levels, but experience a period of high excitement, referred to as a 'happy hour' (Scholvinck, 2000; Thomas, 1997). Due to the different psychological effects of travelers' varied travel experiences and normative traits, impulse shopping behavior is expected to vary significantly among customer segments. Therefore, understanding and manipulating passengers' impulse buying tendencies are two ways to enhance the financial performance of airports (Omar & Kent, 2001). Therefore, we propose our third hypothesis, as follows:

H3. Passengers' impulse buying tendency moderates the relationship between shopping motivations and commercial activities within an airport.

Fig. 1 presents the model of our hypotheses.

3. Method

3.1. Participants and procedure

A self-administered questionnaire was used as an instrument to collect data from air passengers at Taiwan's Taoyuan International Airport from January 20 to February 12, 2011. Due to the unavailability of an air passenger population, we employed the convenience sampling method to collect survey data. The questionnaire was distributed to potential respondents after their willingness to take part in the survey was ascertained. A total of 630 questionnaires were distributed, and 600 usable samples were obtained after deleting incomplete ones, yielding a response rate of 95.2%.

The sample consisted of 45.7% males and 54.3% females. The majority of respondents (55.3%) were aged between 21 and 40.

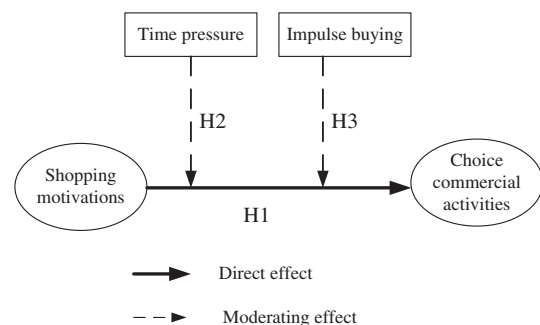


Fig. 1. Conceptual model.

Table 1
Demographic profile of respondents ($n = 600$).

Variables	Frequency	Percent
Gender		
Male	274	45.7
Female	326	54.3
Age (years)		
≤ 20	35	5.8
21–30	198	33.0
31–40	134	22.3
41–50	58	9.7
51–60	15	2.5
≥ 61	35	5.8
Purpose of this trip		
Business	130	21.7
Tourism	470	78.3
Type of travel		
Group	269	44.8
Individual	331	55.2
Annual flight trip frequency		
≥ 3	424	70.7
4–6	113	18.8
7–9	23	3.8
10–12	10	1.7
≥ 13	30	5.0
Monthly income (US\$)		
≤ 1000	159	26.5
1001–2000	213	35.5
2001–3000	106	17.7
3001–4000	49	8.2
≥ 4001	73	12.2
Nationality		
Taiwanese	420	70.0
Chinese (including Hong Kong and Macau)	85	14.2
Other	95	15.8

Regarding travel purpose, 78.3% of the respondents traveled for tourism purposes and 21.7% for business. 55.2% of the respondents chose to participate in foreign individual travel (FIT) in contrast to 44.8% who were engaged in group package travel. In terms of the frequency of overseas travel in the past 12 months, those who traveled three times or less accounted for 70.7% of the respondents, while those who traveled between four and 12 times accounted for 24.3%. Around 62% of respondents reported monthly incomes of under US\$2000, followed by 20.4% and 17.7% who reported US\$3001 and more, and US\$2001 to US\$3,000, respectively. Table 1 gives details of the respondents' profiles.

3.2. Measures

We developed the measurement items for the constructs of the study by drawing on prior research, and reworded them to reflect the international airport context. A pilot sample included 30 Taiwanese students and 20 foreign students of Asia University located in Central Taiwan who had visited international airports within the past six months. Therefore, the content validity of the survey instrument was deemed to be adequate. The results of the pilot test showed that the scale reliability using Cronbach's α coefficients for all constructs were higher than 0.7. A final questionnaire was created after revisions based on the results of the pilot test.

Question items for each construct were measured using a five-point Likert type scale, anchored by the level of agreement, ranging from "1 = strongly disagree" to "5 = strongly agree". Shopping motivations were assessed based on fourteen items adapted from previous studies (Aalto-Setälä & Halonen, 2004;

Table 2
Factor analysis of shopping motivation.

Factors	Factor loading	Eigenvalues	Percentage variance	Cronbach's α
SM1: Environment and communication		3.61	25.81%	0.87
There is good access	0.83			
One feels comfortable	0.82			
The customers can trust the staff	0.72			
The staff speak various languages	0.69			
The staff answer customers' questions in a nice way	0.68			
SM2: Favorable price and quality		2.79	19.95%	0.80
There are significant discounts on the prices of products	0.81			
There are good exchange rates when buying products	0.80			
There are many duty-free products	0.75			
Products are of high quality	0.57			
SM3: Culture and atmosphere		2.73	19.50%	0.84
There are products with local characteristics	0.80			
There are souvenirs	0.80			
The goods are like those in foreign countries	0.63			
The atmosphere is pleasant	0.57			
There are newly released products	0.51			
Total Variance Explained			65.26%	

Chang, Yang, & Yu, 2006; Geuens et al., 2004; Guo, Vasquez-Parrag, & Wang, 2006; Kim & Shin, 2001; Roth & Romeo, 1992; Tomlinson, 2009; Yuksel, 2004). A sample item is "There are many duty-free products". The Cronbach's α coefficient for this scale was 0.92.

Commercial activities in the airport were measured based on six items, including leisure facilities, luxuries, travel products, branded products, local products, and restaurants (Abeyratne, 2007; Castillo-Manzano, 2009; Chang et al., 2006; Geuens et al., 2004; Kim & Shin, 2001; Martel, 2009). A sample item is "I will pay to use leisure facilities at the airport". The Cronbach's α coefficient for this scale was 0.72.

The impulse buying tendency was assessed by nine items adapted from Hoch and Loewenstein (1991), Omar and Kent (2001), Rook and Fisher (1995), and Thomas (1997). A sample item is "I often buy things spontaneously". The Cronbach's α coefficient for this scale is 0.88.

Time pressure was measured with three items based on Herrington and Capella (1995) and Oppewal and Holyoake (2004). A sample item is "I must hurry if I am to complete my shopping trip on time". The Cronbach's α coefficient for this scale was 0.75.

3.3. Data analysis

To examine the dimensionalities and psychometric properties of the constructs of shopping motivations and commercial activities, we first conducted exploratory factor analyses (EFA) using the principal components method with varimax rotation. One-way analysis of variance (ANOVA) was used to examine the

Table 3
Factor analysis results of airport commercial activities.

Factors	Factor loading	Eigenvalues	Percentage variance	Cronbach's α value
CA1: Luxuries and travel products		2.70	31.54%	0.63
I will buy luxuries at the airport	0.87			
I will buy brand name products at the airport	0.85			
I will buy travel products at the airport	0.52			
CA2: Dining and recreation		1.04	30.73%	0.75
I will eat and drink at the airport	0.77			
I will pay to use leisure facilities at the airport	0.75			
I will buy local products at the airport	0.67			
Total Variance Explained			62.27%	

differences in the constructs of interest based on demographic characteristics. Finally, hierarchical regression analysis was used to examine the effects of shopping motivation on commercial activities and the moderating effects of impulse buying tendency and time pressure. All analyses were conducted using SPSS 17.0 and AMOS software.

4. Empirical results and analysis

4.1. Exploratory factor analysis

Exploratory factor analysis was used to reduce the questionnaire items to a smaller and manageable set of underlying factors. The values of the Kaiser–Meyer–Olkin measure of shopping motivations and commercial activities were 0.89 and 0.75, respectively, and their Bartlett's chi-squares were both significant, indicating that it was appropriate to apply the factor analytical technique.

Three factors were extracted from fourteen items of shopping motivation (see Table 2). The Cronbach's α reliability scores of the three factors were found to range from 0.80 to 0.87, denoting acceptable internal consistency. Based on the representative items, the three factors were named as follows. The first factor is “*environment and communication motivation*”, which evaluates the airport environment and service quality of staff, and is loaded heavily with five items. The second factor is “*favorable price and quality motivation*”, which assesses the price discounts, exchange rates, duty-free goods and high-quality products available in the

airport, and is loaded with four items. The final factor is “*culture and atmosphere motivation*” which is loaded with five items and examines the local characteristics, culture and atmosphere around the airport. The three-factor solution accounts for 65.25% of the total explained variance.

Two factors of commercial activities within the airport were obtained from the six measurement items (see Table 3), and their Cronbach's α reliability scores were 0.63 and 0.75, respectively. Factor one is loaded with three items pertaining to the respondent's view about shopping and buying in the airport, and thus named the “*luxuries and travel products*” commercial activity. Factor two is called “*dining and recreation*”, and is loaded with three variables, which express the traveler's eating, drinking and leisure-related actions in the airport. The two-factor solution analysis accounts for 62.27% of the total explained variance.

Only one factor of impulse buying with eight measurement items was extracted, after deleting one item due to its factor loading being less than 0.5 (the deleted item was *I carefully plan most of the purchases*). This factor is called “*impulse shopping behavior*”, with a Cronbach's alpha value of 0.89.

4.2. ANOVA analysis

Table 4 summarizes the ANOVA analysis results for the differences in constructs with respect to respondents' characteristics. Both the environment and communication shopping motivation and the favorable price and quality shopping motivation were found to be significantly different only in terms of nationality. The culture and atmosphere shopping motivation was found to differ significantly in terms of gender. Commercial activities involving luxuries and travel products were found to differ significantly among respondents with respect to age, income and nationality, while commercial activities pertaining to dining and recreation was found to differ significantly only among respondents with different reasons for their trips. Time pressure was found to differ significantly among respondents with respect to age and nationality, while impulse buying was found to differ significantly among respondents with respect to age and income. These results provide highlight the need to control for the effects of individual demographic and trip-related variables in the subsequent regression analyses.

4.3. Hierarchical regression analysis results

We used hierarchical regression analysis to explore the effects of shopping motivations as well as the moderating effects of both time pressure and the tourists' impulse buying tendency on the relationship between shopping motivations and commercial activities in the airport. Three steps were followed in the hierarchical regression analysis. Step one started with putting control variables into the regression. Step two involved adding independent variables (shopping motivations) and moderating variables (time

Table 4
Comparisons of differences in shopping motivations, commercial activities in the airport, time pressure by demographic characteristics.

	Shopping motivations			Commercial activities		Time pressure	Impulse buying tendency
	Environment and communication	Favorable price and quality	Culture and atmosphere	Luxuries and Travel products	Dining and recreation		
Gender			*				
Trip purpose					**		
Age			*	*		**	**
Personal monthly income				*			**
Nationality	**	**		**	*	**	

Note: * $p < 0.05$; ** $p < 0.01$.

Table 5
Hierarchical regression of commercial activities on shopping motivation and time pressure.

	Luxuries and travel products			Dining and recreation		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Step 1: Control variables						
Sex	0.072	0.058	0.054	0.027	0.016	0.010
Age	-0.029	-0.013	-0.006	-0.011	-0.022	-0.015
Purpose	0.003	-0.012	-0.003	0.050	0.023	0.032
Mode	-0.041	-0.005	0.003	0.030	0.078*	0.078*
Frequency	0.017	0.000	-0.004	-0.004	-0.007	-0.008
Income	0.139**	0.154**	0.159**	0.117*	0.125**	0.130**
Nationality	-0.224**	-0.231**	-0.225**	-0.068	-0.082	-0.078*
Step 2: Independent variables						
Environment and communication motivation (SM1)		0.083	-0.542**		0.188**	0.477**
Favorable price and quality motivation (SM2)		0.148**	0.152		0.046	0.088
Culture and atmosphere motivation (SM3)		0.093	-0.078		0.256**	0.277
Time pressure		0.310**	0.834**		0.208**	0.786**
Step 3: Interactive effect						
SM1* Time pressure			-0.981**			-0.617
SM2* Time pressure			-0.004			-0.075
SM3* Time pressure			-0.336			-0.042
F-value	6.483**	20.675**	17.024**	1.377	21.093**	17.208**
Adj R ²	0.060	0.266	0.273	0.004	0.270	0.275
R ²	0.071	0.279	0.290	0.016	0.283	0.292
ΔR ²		0.208	0.011		0.267	0.022

Note: * $p < 0.05$; ** $p < 0.01$.

pressure and impulse buying tendency) to this regression. Step three then assessed the interactive effect of combining independent and moderating variables.

Tables 5 and 6 report the results with time pressure and impulse buying tendency as moderators, respectively, and include three steps from Models 1 to 3 and Models 4 to 6, with a significance level of $p < 0.01$. As shown in the results for Models 2 and 5 in Tables 5 and 6, the favorable price and quality motivation (SM2) ($\beta = 0.148$, $p < 0.01$; $\beta = 0.150$, $p < 0.01$) significantly affected purchases of luxuries and travel products. In addition, the environment and

communication motivation (SM1) ($\beta = 0.188$, $p < 0.01$; $\beta = 0.185$, $p < 0.01$) and culture and atmosphere motivation (SM3) ($\beta = 0.256$, $p < 0.01$; $\beta = 0.259$, $p < 0.01$) were also found to significantly affect purchases of food, drink and leisure activities in the airport. Collectively, these above results lend support to Hypothesis 1.

The results regarding the moderating effects of time pressure are presented in Table 5. In this step, we added the interaction term of shopping motivations and time pressure to the regression analysis. Based on Model 3, the findings show that luxuries and travel products were negatively affected by the environment and

Table 6
Hierarchical regression of commercial activities on shopping motivation and impulse buying tendency.

	Luxuries and travel products			Dining and recreation		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Step 1: Control variables						
Sex	0.072	0.058	0.054	0.027	0.015	0.009
Age	-0.029	-0.014	-0.007	-0.011	-0.022	-0.014
Purpose	0.003	-0.013	-0.003	0.050	0.022	0.033
Mode	-0.041	0.007	0.007	0.030	0.079*	0.080*
Frequency	0.017	0.003	-0.001	-0.004	-0.005	-0.007
Income	0.139**	0.150**	0.155**	0.117*	0.122**	0.126**
Nationality	-0.224**	-0.223**	-0.217**	-0.068	-0.076*	-0.072*
Step 2: Independent variables						
Environment and communication motivation (SM1)		0.078	0.559**		0.185**	0.490**
Favorable price and quality motivation (SM2)		0.150**	0.157		0.047	0.134
Culture and atmosphere motivation (SM3)		0.099	-0.080		0.259**	0.276
Impulse buying tendency		0.302**	0.831**		0.206**	0.842**
Step 3: Interactive effect						
SM1* Impulse buying tendency			-0.997**			-0.633
SM2* Impulse buying tendency			-0.003			-0.161
SM3* Impulse buying tendency			0.343			-0.028
F-value	6.483**	20.284**	16.748**	1.377	21.040**	17.296**
Adj R ²	0.060	0.262	0.269	0.004	0.269	0.276
R ²	0.071	0.275	0.286	0.016	0.282	0.293
ΔR ²		0.204	0.011		0.266	0.011

Note: * $p < 0.05$; ** $p < 0.01$.

communication motivation (SM1) ($\beta = -0.542$, $p < 0.01$), and significantly positively affected by time pressure ($\beta = 0.834$, $p < 0.01$). In addition, significantly negative interaction effects were found to exist between the environment and communication motivation and luxuries and travel products ($\beta = -0.981$, $F = 17.024$, $p < 0.01$, $\Delta R^2 = 0.011$). That is, the high time pressure and environment and communication motivation had significantly negative effects on commercial activities involving luxuries and travel products in the airport. Evidently, time pressure is a moderating variable between luxuries and travel products and the environment and communication shopping motivation. The results of Model 6 show that the coefficients for the environment and communication motivation (SM1) and time pressure were positive and significant. However, no moderating effects of time pressure could be found for the dining and recreation and shopping motivations. The moderating role of time pressure is summarized in graphical form in Fig. 2. According to these results, Hypothesis 2 is partially supported.

As regards the moderating effects of the impulse buying tendency in Table 6, the results in Model 3 show that the environment and communication motivation (SM1) ($\beta = 0.559$, $p < 0.01$) and the impulse buying tendency ($\beta = 0.831$, $p < 0.01$) both significantly and positively affected luxuries and travel products. Moreover, a significantly negative moderating effect was found to exist for luxuries and travel products and the environment and communication shopping motivation ($\beta = -0.997$, $p < 0.01$, $F = 16.748$, $\Delta R^2 = 0.011$). That is to say, a high degree of impulse buying tendency and environment and communication motivation has significantly negative effects on commercial activities involving luxuries and travel products in the airport. This finding highlights the importance of the impulse buying tendency in the context of shopping motivations and commercial activities involving luxuries and travel products in this context. In addition, even though the results shown in Model 6 reveal significantly positive effects between the environment and communication motivation (SM1) ($\beta = 0.490$, $p < 0.01$) and impulse buying tendency ($\beta = 0.842$, $p < 0.01$) and commercial activities involving dining and recreation, the impulse buying tendency had no moderating effect on dining and recreation. The moderating role of the impulse buying tendency is outlined in graphical form in Fig. 3. These results partially support Hypothesis 3).

5. Discussion and conclusion

Traveler shopping and dining are the primary sources of airport commercial revenues, and shopping is a way for air travelers to use their dwell time to reduce anxiety and boredom. Airport operators should thus maximize the utility of travelers' happy hour by employing various retail strategies to trigger travelers' shopping behaviors, and ultimately increase retailing revenue. Although the shopping behavior of travelers at the airport has been studied in other works, ours is the first attempt to integrate time pressure and impulse buying tendency with shopping motivations to study commercial activities in the airport context. Therefore, the results of this study can provide useful information for airport and retail planning and management. Consistent with previous studies, such as Crawford and Melewar (2003), Hausman (2000), Omar and Kent (2001), and Thomas (1997), travelers' engagement in commercial activities at airports is influenced by various shopping motivations. Specifically, we find that travelers' motivation in terms of favorable price and quality would affect their purchases of luxuries and travel products within an airport, while dining and leisure activities are driven by their environment and communication motivation and culture and atmosphere motivation. This provides an important opportunity to airports and retailers, in that they could increase their revenues by building an atmosphere and environment to enhance travelers' shopping motivations. In addition, the shopping motivations highlighted by this study can enable airport operators to segment the airport shopper market and design more effective marketing strategies. Omar and Kent (2001) identify three main groups of airport shopping travelers: the shopping traveler, the browser traveler and the fast-track traveler. By carefully marketing the airport environment, airport operators can effectively convert travelers' "dwell time" into shopping time.

Furthermore, the impulse buying tendency has a moderating effect on the relationship between shopping motivations and commercial activities at the airport, especially for luxuries and travel products. Luxuries provide consumers with a sense of indulgence and monetary value (Anderson & Littrell, 1995; Nueno & Quelch, 1998), while travel products are usually necessities, such as travel guides, device chargers and camera. According to this view, in addition to providing meaningful, familiar and comfortable brand name products to raise travelers' shopping motivations,

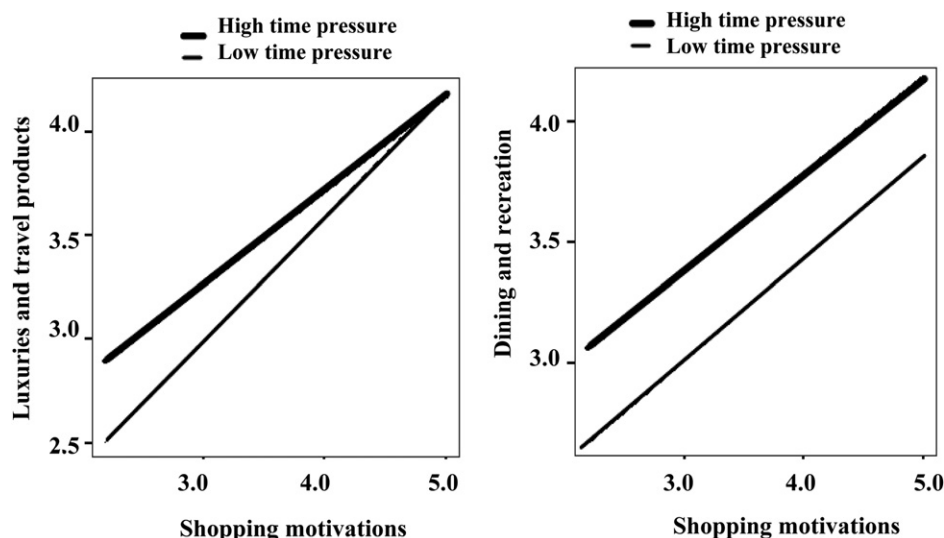


Fig. 2. Time pressure as a moderator of the relationships between shopping motivations and luxuries and travel products, as well as dining and recreation.

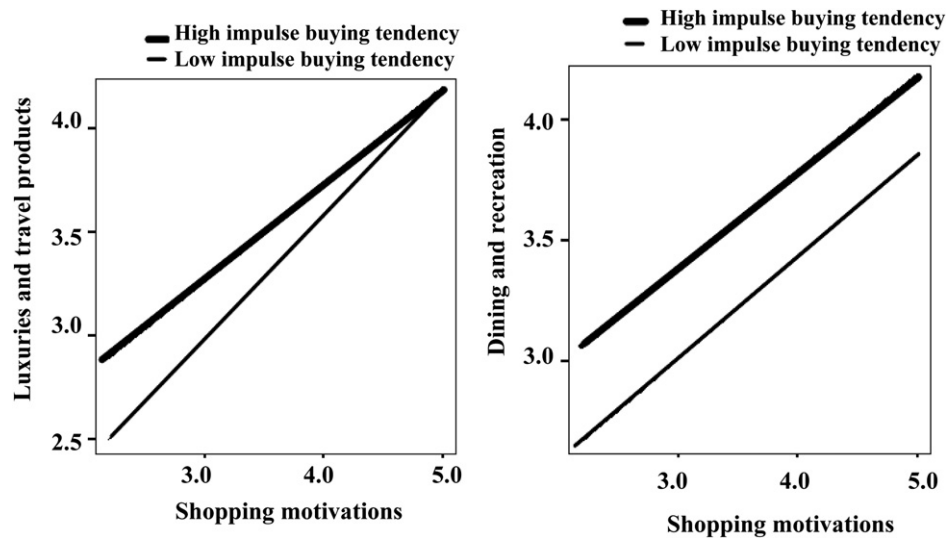


Fig. 3. Impulse buying tendency as a moderator of the relationships between shopping motivations and luxuries and travel products, as well as dining and recreation.

airports and retailers should also offer more special prices and high-quality products to meet the needs of various travelers. In addition, travelers who stay in a crowded store that has limited quantities of the items on sale may also experience a stronger impulse buying tendency. [Bian and Forsythe \(2012\)](#) also state that retailers can convey feelings of pleasure and deliver a fun experience to shoppers by offering a well-organized assortment of products and upscale ambience, or through remarkable service quality that generates an enjoyable, fun experience with the brand. It is thus reasonable that our findings showed that the purchase of luxuries and travel products within an airport is often due to the interaction between impulse buying tendency and environment and communication motivation.

Consistent with previous studies ([Bowes, 2002](#); [Kim & Kim, 2008](#); [Thomas, 1997](#)), our study found that time pressure also moderates the effects of shopping motivation on travelers' decisions whether or not to buy luxuries and travel products in an airport. Luxury is a subjective concept ([Phau & Prendergast, 2000](#)) that depends on each consumer's perceptions of indulgent value, and luxury items are relatively unique due to their high prices and restricted distribution ([Bian & Forsythe, 2012](#)). Retailers who make significant use of promotions while offering limited quantities of product may thus be able to encourage travelers to make a purchase decision at an airport. In addition, retailers can also emphasize the risk-free purchasing, such as by offering guarantees and warranties, and well-trained sales staff, in order to maximize in-store shopping. By adopting these strategies, retailers may be able to speed up passengers' decision-making processes under the high time pressure environment of an airport. Airport operators should thus not lose sight of the importance of time-related factors (i.e., check-in time, security process and pre-flight waiting time) when catering to travelers' shopping motivations. Therefore, the airport and retailers should not only focus on atmospherics, but should also pay equal attention to the efficiency of transaction time, traffic flow and sales personnel assistance, all of which may reduce the passengers' time pressure. If possible, operators should collaborate with the government and airlines to reduce the time needed to process passengers into the "dwell time", without causing airport security concerns. Finally, the results of this study show that neither time pressure nor the impulse buying tendency have a moderating effect on dining and recreational commercial activities.

Meanwhile, [Grimsley \(2012\)](#) points out that food and beverages accounted for 2% of total airport industry revenue in 2010. A possible reason for this may be that eating and drinking within an airport is a very common activity that travelers often do when waiting for their flight.

Overall, this study establishes both time pressure and the impulse buying tendency as theoretically relevant constructs for understanding traveler's shopping behaviors within an airport. However, as in most studies, there are some limitations that can provide directions for future research. First, we acknowledge that different types of products might influence passengers' airport shopping behaviors in different ways. Passengers may well spend their time at airports looking closely at products, touching, trying and appraising them, before actually making purchases elsewhere – either from retail outlets nears their home or online. This may be particularly true for consumer electronics, such as tablet computers or cameras, where the purchaser may have some concerns about after sales services if there are any problems with the product. However, such concerns are less significant when purchasing a book or souvenirs. Future research can take into account the moderating effects of products types when investigating passengers' airport shopping behaviors. Second, airports may offer passengers the opportunity to have extended interactions with products ([Weaver, 2007](#)), and thus affect passengers' purchasing behaviors in this way ([Reed, 2004](#)). However, this study did not examine this issue, and thus future researchers are encouraged to investigate the longer-term effects of physical product placement and demonstration in airports, and to examine whether airports are suitable locations to promote products that will be purchased elsewhere. Third, since 70% of the respondents in this study were Taiwanese citizens, and the data was collected at one airport, generalization of our results should be undertaken with caution. More research efforts in other regions and cultural contexts are thus recommended. Last but not least, the effects of in-store atmosphere on shopping behaviors, which have been studied in other retailing contexts, can be extended to the airport retailing environment. Due to the unique characteristics that arise when combining air travel and retailing in this context, it is likely that further investigations of this issue will lead to new insights with regard to the related shopping behaviors.

Acknowledgments

We would like to thank the National Science Council of Taiwan, ROC for financial support received under grant NSC 99-2410-H-468-018, and Dr. Yu Hern Chang, Dr. Chris Ryan and three anonymous reviewers for helpful comments on this paper.

Appendix A. Measurement Scales

Scales

Shopping motivation (1 = Strongly Disagree and 5 = Strongly Agree)

In the airport, to what extent do the following reasons make you wish to buy something?

- There are many duty-free products
- There are good exchange rates when buying products
- There are significant discounts on the prices of products
- Products are of high quality
- There are newly released products
- There are products with local characteristics
- There are souvenirs
- The staff answer customers' questions in a nice way
- The customers can trust the staff
- The staff speak various languages
- There is good access
- One feels comfortable
- The goods are like those in foreign countries
- The atmosphere is pleasant

Commercial activities at airport (1 = Strongly Disagree and 5 = Strongly Agree)

In the airport, how likely are you to spend money on leisure facilities or shopping?

- I will pay to use leisure facilities at the airport.
- I will eat and drink at the airport.
- I will buy local products at the airport.
- I will buy brand name products at the airport.
- I will buy luxuries at the airport.
- I will buy travel products at the airport.

Impulse buying behavior (1 = Strongly Disagree and 5 = Strongly Agree)

- I often buy things spontaneously
- "Just do it" describes the way I buy things
- "I see it, I buy it" describes me
- "Buy now, think about it later" describes me
- Sometimes I feel like buying things on the spur-of-the-moment
- I buy things according to how I feel at the moment
- I carefully plan most purchases
- Sometimes I am a bit reckless about what I buy
- I don't care what anyone thinks when I am buying

Time pressure (1 = Strongly Disagree and 5 = Strongly Agree)

- I must hurry if I am to complete my shopping trip on time
- I feel pressured to complete my shopping quickly
- I do not have enough time to shop

References

- Aalto-Setälä, V., & Halonen, M. (2004). Attractive prices in grocery and automobile markets—why is such pricing used? *Journal of Retailing and Consumer Services*, 11(5), 299–306.
- Abeyratne, R. (2007). Bustling aerotropolis has arisen at many leading airports. *ICAO Journal*, 3, 22–23.
- Anderson, L. F. A., & Littrell, M. A. (1995). Souvenir-purchase behavior of women tourists. *Annals of Tourism Research*, 22(2), 328–348.
- Bian, Q., & Forsythe, S. (2012). Purchase intention for luxury brands: a cross cultural comparison. *Journal of Business Research*, 65(10), 1443–1451.
- Bowes, B. (2002). The effects of emotion and time to shop on shopping behaviour in an international airport terminal. Paper presented at the Association of Consumer Research Conference, Columbus, Ohio.
- Castillo-Manzano, J. I. (2009). Determinants of commercial revenues at airports: lessons learned from Spanish regional airports. *Tourism Management*, 31(1), 788–796.
- Chang, J., Yang, B. T., & Yu, C. G. (2006). The moderating effect of salespersons' selling behaviour on shopping motivation and satisfaction: Taiwan tourists in China. *Tourism Management*, 27(5), 934–942.
- Crawford, G., & Melewar, T. C. (2003). The importance of impulse purchasing behaviour in the international airport environment. *Journal of Consumer Behaviour*, 3(1), 85–98.
- Geuens, M., Vantomme, D., & Brengman, M. (2004). Developing a typology of airport shoppers. *Tourism Management*, 25(4), 615–622.
- Graham, A. (2009). How important are commercial revenues to today's airports? *Journal of Air Transport Management*, 15(3), 106–111.
- Grant, L. (2006). Upscale retailers latch on to captive airport audiences. *USA Today*, 14 February.
- Grimsley, S. (2012). *Commercial activities to support airport growth*. 21st Airports Council International (ACI) Africa regional annual assembly, conference and exhibition. 27–29 August. Zambia: Livingstone. <http://www.aci-africa.aero/aci/ACI%20AFR/Events/assembly2012/Speeches%20and%20Presentations/Commercial-Activities-to-Support-Airport-Growth-Selwyn-Grimsley.pdf>.
- Guo, C., Vasquez-Parrag, Z. A., & Wang, Y. (2006). An exploratory study of motives for Mexican nationals to shop in the US: more than meets the eye. *Journal of Retailing and Consumer Services*, 13(5), 351–362.
- Hausman, A. (2000). A multi-method investigation of consumer motivations in impulse buying behavior. *Journal of Consumer Marketing*, 17(5), 403–419.
- Herrington, J. D., & Capella, L. M. (1995). Shopper reactions to perceived time pressure. *International Journal of Retail & Distribution Management*, 23(12), 13–20.
- Hoch, S., & Loewenstein, G. (1991). Time inconsistent preferences and consumer self-control. *Journal of Consumer Research*, 17(4), 497–507.
- Iyer, E. S. (1989). Unplanned purchasing: knowledge of shopping environment and time pressure. *Journal of Retailing*, 65(1), 40–57.
- Kasarda, J. D. (2008). Shopping in the airport city and aerotropolis. *Research Review*, 15(2), 50–56.
- Kim, H. Y., & Kim, Y. K. (2008). Shopping enjoyment and store shopping modes: the moderating influence of chronic time pressure. *Journal of Retailing and Consumer Services*, 15(5), 410–419.
- Kim, H.-b., & Shin, J. H. (2001). A contextual investigation of the operation and management of airport concessions. *Tourism Management*, 22(2), 149–155.
- Martel, F. (2009). External factors and their impacts on non-aeronautical revenue. *Journal of Airport Management*, 3(4), 337–344.
- McGoldrick, P. J. (1990). *Retail marketing*. London: McGraw-Hill International (UK) Limited.
- Newman, S., & Lloyd-Jones, T. (1999). *Airport and travel terminal retailing: Strategies, trends and market dynamics*. London: Raven Fox Publishing.
- Nueno, J. L., & Quelch, J. A. (1998). The mass marketing of luxury. *Business Horizons*, 41(6), 61–68.
- Omar, O., & Kent, A. (2001). International airport influences on impulsive shopping: trait and normative approach. *International Journal of Retail & Distribution Management*, 29(5), 226–235.
- Oppewal, H., & Holyoake, B. (2004). Bundling and retail agglomeration effects on shopping behavior. *Journal of Retailing and Consumer Services*, 11(2), 61–74.
- Painvin, N. (2011). Airport performance: a rating agency perspective. *Journal of Airport Management*, 5(4), 298–305.
- Perng, S. W., Chow, C. C., & Liao, W. C. (2010). Analysis of shopping preference and satisfaction with airport retailing products. *Journal of Air Transport Management*, 16(5), 279–283.
- Phau, I., & Prendergast, G. (2000). Consuming luxury brands: the relevance of the 'rarity principle'. *Journal of Brand Management*, 8(2), 122–138.
- Reed, K. (2004). Stopover and shop: Airport malls turning idle passengers into spenders. *The Boston Globe*, September 6. <http://www.highbeam.com/doc/1P2-7863916.html>.
- Rook, D. W., & Fisher, R. J. (1995). Normative influences on impulsive buying behavior. *Journal of Consumer Research*, 22(3), 305–313.
- Roth, M. S., & Romeo, J. B. (1992). Matching product category and country image perceptions: a framework for managing country-of-origin effects. *Journal of International Business Studies*, 23(3), 477–497.
- Rowley, J., & Slack, F. (1999). The retail experience in airport departure lounges: reaching for timelessness and placelessness. *International Marketing Review*, 16(4/5), 363–375.
- Scholvinck, J. (2000). *The travel stress curve*. Amsterdam: Market Square Consulting.
- Thomas, D. (1997). *Retail and leisure developments at London Gatwick*. Commercial Airport, British Airport Authority, August, 38–41.
- Tomlinson, P. (2009). Retail therapy. *Asia-Pacific Airports*, 3(3), 24–26.
- Topping, P. (2010). Promotions and incentives in airport retailing. *Journal of Airport Management*, 4(3), 208–210.
- Torres, E., Domínguez, J. S., Valdés, L., & Aza, R. (2005). Passenger waiting time in an airport and expenditure carried out in the commercial area. *Journal of Air Transport Management*, 11(6), 363–367.
- Tosic, V. (1992). A review of airport passenger terminal operation analysis and modelling. *Transportation Research*, 26(1), 3–26.
- Vermeir, I., & Van Kenhove, P. (2005). The influence of need for closure and perceived time pressure on search effort for price and promotional information in a grocery shopping context. *Psychology & Marketing*, 22(1), 71–95.
- Weaver, A. (2007). Product placement and tourism-oriented environments: an exploratory introduction. *Tourism Research*, 9(4), 275–284.
- Yuksel, A. (2004). Shopping experience evaluation: a case of domestic and international visitors. *Tourism Management*, 25(6), 751–759.
- Zhang, A., & Zhang, Y. (1997). Concession revenue and optimal airport pricing. *Transportation Research Part E: Logistics and Transportation Review*, 33(8–9), 287–296.



Yi Hsin Lin is an assistant professor in the Department of Leisure and Recreation Management, Asia University, Taiwan. Her research interests include the transportation and tourism management, risk management, traveler behavior and customer relationship management. She has published in *Risk Analysis*, *Management Decision*, *Journal of Air Transport Management*, *Journal of Modelling in Management* and *Tourism Management Perspectives*.



Ching Fu Chen is a professor in the Department of Transportation and Communication Management Science, National Cheng Kung University, Taiwan. He has published numerous scholarly articles in, among others, *Tourism Management*, *Journal of Travel Research*, *Tourism Economics*, *Accident Analysis and Prevention*, *Transportation Research Part A*, *Transportation Research Part F*, *Transport Policy*, and *Journal of Air Transport Management*.