

## Investigating Air Passengers' Spending Behaviour – a Survey at Hong Kong International Airport

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**Abstract:** The aim of this paper is to investigate passengers' spending behaviour at the Hong Kong International Airport (HKIA), as well as to identify whether social-demographic factors have an impact on passengers' spending. Primary data was collected at HKIA through surveys. The findings demonstrate that more than half the respondents have spent money at HKIA during the past 12 months, the majority of whom bought duty free goods, expending HK\$51-600. There are significant differences between the shoppers and non-shoppers regarding the price of goods at HKIA, and which aspects of HKIA retails need to improvement. The findings provide useful information for the airport authority when considering commercial activities as a means to improve passenger services and increase revenue.

**Keywords:** Hong Kong International Airport, Airport management, Airport commercial revenue, Airport non-aeronautical revenue

**JEL Classifications:** M190, M310, R410, Z320

### 1. Introduction

Little research has been carried out in the past regarding passengers' spending behaviours and the influence of socio-demographic variables on passengers' purchasing behaviours at an airport, although some researchers have given attention to the impact of socio-demographic characteristics on service satisfaction levels within the airline industry (Clemes, Ozanne, and Laurenson, 2001; Oyewole, 2001; Clemes, Gan, Kao, and Choog, 2008). Although consumer behaviours at several international airports have been studied, shopping behaviours at airports in Asia has been the subject of more limited study (Perng, Chow, and Liao, 2010).

Little is known about what products passengers' have purchased, the reasons behind their purchases and how much they spent at Kong Hong International airport (HKIA). Opened in July 1998, and costing more than US\$ 20 billion to build, the Hong Kong International Airport is the aviation hub in the region of Southeast Asia. In 2013, 59.9 million passengers used HKIA and some 4.12 million tonnes of air cargo passed through Hong Kong. HKIA is connected to about 180 destinations, including around 44 locations in the Mainland China (HKIA, 2013). Hong Kong international airport has a total of over 260 shops and 65 catering outlets located in both terminal 1 and 2. Over 160 shops are located in terminal 1 with 40 catering outlets, and over 100 shops and 25 catering outlets are located in terminal 2. The products offered at these stores include audio visual equipment, electronic products, designer's clothing stores, duty free products, health, beauty, and personal care products, jewellery and watches, books & magazines, clothing, convenience items (HKIA, 2010).

According to Echevarne (2008), in order for an airport to be able to develop a successful retail strategy, it needs to understand how hosting different groups of passengers affect the airport's commercial offerings. It is very important for the airport to understand passengers' needs from a socio-demographic perspective, taking into account factors such as gender, age, education, and nationality. It is also critical to identify the most popular kinds of products purchased, how much money passengers spend, their shopping purpose, and whether the prices of products is right for them. Oyewole (2001) conducted research regarding consumers' socio-demographic characteristics and their satisfaction with services in the airline industry, using six socio-demographic characteristics including age, gender, income, occupation, education and marital status for his work. He discovered that age and household income had no apparent effect on satisfaction, but gender, occupation, education and marital status tended to exert influence on passenger satisfaction with airlines.

This research paper investigates passengers' spending behaviours and whether socio-demographic variables influence passengers' buying behaviours at the Hong Kong International Airport (HKIA). It focuses on retail and food & beverage (F&B) at HKIA from passengers' perspectives, with findings that may bring extra revenue to the airport and satisfy customers' needs.

Freathy and O'Connell (1999) stated that the challenge in airport management is the optimisation of non-aeronautical revenue without compromising operational effectiveness. When airports plan space for car parking and shop numbers, they seldom consider passenger opinion on various aspects of commercial activities. This research paper constitutes the first attempt to gain some useful information on passenger perspectives on shop numbers and pricing, including how much an increase in shop numbers and pricing is considered reasonable and acceptable. It provides relevant information for the airport authority when considering commercial action as a means to improve passenger services and revenue. It also contributes to the field studies of airport planning and management by offering passengers' feedback for future consideration.

The remainder of the article is structured as follows: First, reports/articles on related topics were reviewed, followed by research methodology used for this research, and then results and discussion including testing on hypotheses, and finally a conclusion and directions for future research.

## **2. Literature Reviews**

This section reviewed literature related to the topic, and consists three parts: part I reviewed the importance of commercial revenue for airport industry; part II reviewed shopping motivations and terminal shopping behaviour; and the final part reviewed on topics involving relevant socio-demographic variables.

As shopping constitutes one of the most popular activities travellers engage in at airports, retail plays an important role in airport operations and act as a valuable source of revenue (Geuens Vantomme, & Brengman, 2004; Crawford & Melewar, 2003; Rowley & Slack, 1999). The most common commercial outlets and activities found at airports include convenience stores, specialty stores, duty-free shops, food and beverage services, passenger service facilities, leisure facilities and airport advertising or telephone services (Kim & Shin, 2001).

### **2.1 Airport commercial revenue**

Airport income is generated from both aeronautical or traffic-related activities and non-aeronautical or commercial sources (Doganis, 1992; Freathy, 2004). Airports have seen the income they derive from aeronautical activities decline as a result of intense competition within the airline industry (Freathy, 2004). The pressure from airlines on lowering airport charges has increased in

recent years, particularly from the low-cost carrier (LCC) sector (Graham, 2009). Airports have been under growing pressure from governments to be more financially self-sufficient and less reliant on government support (Zhang and Zhang, 1997).

The dramatic growth in demand for air travel brought by deregulation in the airline industry has led to airport congestion and requires airports to invest in additional capacity. To respond to the need for infrastructure development, airports around the world have moved toward commercialization, and adopted a business – like approach to management. An increase in airport commercial activities has made airports more self-efficient, more responsive to investment needs, and more likely to offer services at lower costs to their customers (Padova, 2007). According to Francis, Humphreys, & Ison (2004), the development of which has made airports more dependent on non-aeronautical revenues. An increase in non-aeronautical investment at modern international airports has generally achieved higher commercial productivity, generating more revenue (Perng, et al., 2010). For this reason, the airport industry has evolved by increasing its dependence on commercial revenues. For example, for a sample of over 20 European airports (ranging in size now from around two million annual passengers to over fifty million) way back in 1983, only 41% of revenues came from commercial sources. This increased steadily to 46% in 1993 and then to 50% in 1998 (Graham, 2008, 2009).

ACI (Airports Council International) Survey 2008 reports that airports in North America have increased their non-aeronautical revenue to around 53% of the total revenue. The trend is also visible in European and Asia Pacific airports where non-aeronautical revenues have been in the range of 47 to 50 percent (ACI, 2007). The bulk of revenue from commercial activities gives a broad indication of its importance as a source of revenue. The most significant commercial revenue is retail – accounting for over a fifth of all commercial revenues, followed by property (19%), and car parking (18%). Data from UK airports show that F&B accounts between 13% and 24% of total retail revenue. Similarly, LEK consulting identified three main non-commercial activities at an airport: car parking, retail and Food & Beverage (F&B).

## **2.2 Shopping motivations and terminal shopping behaviours**

Several authors believe that shopping is one of the most popular tourist activities at airports because it satisfies part of people's need for leisure and tourism (Kent, Shock, & Snow, 1983). Shopping is viewed as a form of recreation that provides enjoyment and relaxation (Bussey, 1987; Gratton & Taylor, 1987; Timothy & Butler, 1995). At an airport, passengers who travel for holiday or leisure purposes (contrary to business travellers) are especially motivated for recreation because they spend most of their time at an airport (Tosic, 1992; Wells, 1986). According to Timothy and Butler (1995), outbound shopping for passengers is one of the most popular tourist activities that can satisfy the human need for enjoyment and leisure, and it is closely linked to the terminal environment, facility, products, and atmosphere. Thomas (1997) found that once passengers have their boarding passes, their tension is relieved and replaced by excitement, in what is called the opponent-process theory of emotion. Scholvinck (2000) developed the "travel stress curve" for international passengers and depicted the unplanned shopping factor as one that is very significant for retailers in marketing promotion activities. Lamacraft (1998) also found that most business people are influenced by their colleagues and are unlikely to show extravagance when accompanied. Based on a study at the Brussels Airport, Geuens, Vantomme, and Brengman (2004) developed a typology of shoppers. Mood shoppers are mostly inspired by atmospheric and mood elements in terminals. Shopping lovers tended to browse and purchase in larger stores. Of passengers, 24% are shopping lovers and predominantly female, and had a slight preference for shops located near their departure gates. Male passengers are more likely to be influenced by mood or apathetic shoppers.

Results have shown by BAA survey that on average 53 per cent of passengers considered airport shopping to be important or very important. It was considered more important to certain

sub-segments such as eighteen to twenty-four year olds (64 per cent) and less important for others such as UK business travellers (34 per cent). Overall, 70 per cent of passengers considered catering to be important or very important. The UK leisure market gave it a higher rating (77 per cent) while the European business market gave it a much lower rating. For this reason, studies of the factors that help maximize commercial, or non-aeronautical revenues are becoming a major topic of interest for airport management (Huang & Kuai, 2006; Castillo-Manzano, 2010).

### **2.3 Socio-demographic variables**

Socio-demographic variables are well known in the literature as having significant effects on consumer behavior. Variables such as social class, income, age, and education have been the subject of research for a long time in studies of consumer behavior (Berelson and Steiner, 1964; Slocum and Mathews, 1970; Myers, Stanton, and Haug, 1971; Myers and Mount, 1973; Hisrich and Peters, 1974; Prasad, 1975; Bellenger, Tobertson and Hirschman, 1977; Lee, 2000; Lam & Tang, 2003; Pearce, 2001). For example, the more affluent and well educated tend to be more mobile (Gayler, 1998; Hanson & Hanson, 1981; Pas, 1984). Cooper (1981) indicated that “it is now generally recognized that recreation behavior varies along two dimensions: a life-cycle dimension and a social class dimension. It would, therefore, be expected that age, education, household income, and occupation act to discriminate between the spatial behavior patterns of tourists. These socio-demographic variables are easily subjected to statistical treatments. They are more easily collected, and are very useful for market segmentation (Lazer, 1994; Stafford, 1996). Thus, what is examined in this paper is whether socio-demographic variables influence passengers’ buying behavior in regards to the main non-aeronautical activities at the Hong Kong International Airport (HKIA).

## **3. Research Methods**

### **3.1 Research design**

Terminal retail activity has become a central feature of many airports, and it’s no different for HKIA. The airport provides a total of over 260 retail shops and 65 catering outlets; over 160 shops of which are located in terminal 1 and over 100 shops in terminal 2, with a total floor area of 710,000 m<sup>2</sup> for both terminals. Retail licences and advertising revenue has grown by 22.8% to HK\$3,583 million in 2011 (2009/10: HK\$2,918 million), mainly attributable to higher passenger volumes and the rising spending power of Mainland Chinese visitors. This category represented 33.8% of total turnover and contributed the largest increase in revenue this year. Retail businesses performed well, driven by sales of duty free merchandise, perfumes and cosmetics, luxury branded items, airside general merchandise and commercial catering. A strong recovery of the advertising business also contributed to the revenue increase in 2010/11 (HKIA, 2011).

It is important to study whether any differences exist between passengers of three questions: what products they buy, how much money they spent and their shopping reasons. The following hypotheses were developed based on three questions from passengers’ socio-demographic perspective.

Regarding what products they buy:

*H1a: There are no significant differences between male and female passengers.*

*H1b: There are no significant differences passengers from different age groups.*

*H1c: There are no significant differences between passengers with different income levels.*

*H1d: There are no significant differences between passengers who are Hong Kong residents and non-Hong Kong residents.*

*H1e: There are no significant differences between passengers with different educational backgrounds.*

*H1f: There are no significant differences between passengers with different travel purpose.*

Regarding how much money passengers spent:

*H2a: There are no significant differences between male and female passengers.*

*H2b: There are no significant differences passengers from different age groups.*

*H2c: There are no significant differences between passengers with different income levels.*

*H2d: There are no significant differences between passengers who are Hong Kong residents and non-Hong Kong residents.*

*H2e: There are no significant differences between passengers with different educational backgrounds.*

*H2f: There are no significant differences between passengers with different travel purpose.*

Regarding the purpose of shopping:

*H3a: There are no significant differences between male and female passengers.*

*H3b: There are no significant differences passengers from different age groups.*

*H3c: There are no significant differences between passengers with different income levels.*

*H3d: There are no significant differences between passengers who are Hong Kong residents and non-Hong Kong residents.*

*H3e: There are no significant differences between passengers with different educational backgrounds.*

*H3f: There are no significant differences between passengers with different travel purpose.*

It is also valuable to investigate whether there are any differences between the perspectives shoppers and non-shoppers on the price of goods at HKIA, which aspects of HKIA retails need to improve, and shop numbers increasing is good for shoppers, which leads to H4:

*H4: There are no significant differences between the perspectives of shoppers and non-shoppers on the price of goods at HKIA, which aspects of HKIA retails need to improve, and shop numbers increasing is good for shoppers.*

### **3.2 Sample and Data Collection**

A survey was conducted at HKIA from 1 Oct 2013 to 15 Oct 2013. 600 hundred questionnaires were randomly distributed to passengers both before and after security check at departure halls at two terminals at HKIA, and 556 were identified to be validated. This sample size should be considered adequate for exploratory analysis in discovering travelling behaviour (Bejou, Emnew, and Palmer, 1998; Chen & Chang, 2005). The survey was timed to coincide with the opening hours of the airports. It was conducted between Monday and Sunday from morning flights to night flights to minimise any biases of the results.

The questionnaires were broken down into three sections: personal information, retail and F&B (refer to Appendix). The first part of the questionnaires is concerned with personal information including gender, age, income, and travel purpose. The second part of the questionnaires collects information about retail, including what products they bought, how much money they spent and their purposes of shopping. The third part is concerned with passengers' opinion of F&B.

### **3.3 Statistical analysis method**

The SPSS 22 software package is used for data analysis in the study. Descriptive statistics are used to describe the mean, variance and the categories and characteristics of data. T-test and Analysis of Variance (ANOVA) is used to help understand the differences between the dimensions of airline passengers and to discuss the differences between these dimensions in this study.

## 4. Results

### 4.1 Sample characteristic

Table 1 shows the characteristics of the sample. Passengers are divided into seven different groups (gender, age, country of resident, income, education, and travel purpose). Among the data, 54% were male and 46% female, with around 32% passengers are travelling for holidays; 32.4% for business; and 19.45% for Visiting Friends/Relatives (VFR). The majority of passengers (73.4%) are Hong Kong residents and are between 18 to 40 years of age (64.7%), with 58.3% passengers earning less than HK\$25,000 per month.

**Table 1** Characteristics of the sample ( $N = 556$ )

	Frequency	Percent		Frequency	Percent
<b>Gender</b>			<b>Education</b>		
Male	300	54.0%	High school or lower	168	30.2%
Female	256	46.0%	Diploma	160	28.8%
<b>Age Group</b>			Bachelor Degree	168	30.2%
18 -	44	7.9%	Postgraduate Degree or higher	60	10.8%
18-30	188	33.8%	<b>Income Per Month (Hong Kong \$)</b>		
31-40	172	30.9%	less than 10,000	168	30.2%
41-50	104	18.7%	10,001-25,000	156	28.1%
50 +	48	8.6%	25,001-40,000	108	19.4%
<b>Ethnic</b>			Over 40,000	124	22.3%
Hong Kong resident	408	73.4%	<b>Purpose of Travel</b>		
Non-Hong Kong resident	148	26.6%	Business	180	32.4%
			Visiting friends or relatives	108	19.4%
			Tourism or holiday	176	31.7%
			Study	64	11.5%
			Others	28	5.0%

### 4.2 Descriptive statistic results

#### 4.2.1 Product categories purchased at the airport

Survey data shows that about 52.5% of respondents had made purchases from HKIA retail shops over the past 12 months, while 47.5% of passengers had never purchased anything. Within that 52.5% of respondents who had made purchases from the airport, 45% were male and 55% were female. Respondents between 18 to 40 years of age constitute the biggest group of customers (72% of the shoppers).

Analysis of the data reveals that the majority of the customers who made purchases at the airport prefer Duty Free Goods (52.1%), followed by fashion accessories including watches, glasses and jewellery (13.7%). 11% of respondents purchased clothing, 11% of respondents purchased books, magazines and newspapers, and 9.6% of respondents purchased electronic products. Table 2 shows the percentage of product categories purchased at the airport.

**Table 2** Percentage of product categories purchased at the airport

<b>Product category Purchased</b>	<b>Number of respondents</b>	<b>Percent(%)</b>
duty free goods	152	52.1
electronic products	28	9.6
clothing	32	11.0
books, magazines & newspapers	32	11.0
fashion accessories (watch, glasses or jewellery)	40	13.7
others	8	2.7
Total	292	100

Table 3 illustrates the money spent by passengers at HKIA Airport (HK\$). 31.5% passengers spent HK\$101-300, 19.2% passengers spent HK\$51-100 or HK\$ 301-600, and 17.8% passengers spent HK\$1-50.

**Table 3** How much money have you spent at HKIA Airport (HK\$)

<b>Money spent (HK\$)</b>	<b>Percent(%)</b>
1-50	17.8
51~100	19.2
101~300	31.5
301-600	19.2
601~1000	6.8
1001~2000	2.7
2001~5000	2.7
Total	100

Passengers' shopping purposes were divided into five categories: Occasion, Recreation, Gift, Commercial, and Tourism (Perng, Chow, and Liao, 2010). Table 4 shows the distribution of Purpose of Shopping. 37% of passengers shopped for gifts, 24.7% for recreation, 19.2% for occasion, 11% for tourism and 8.2% for commercial.

**Table 4** Purpose of shopping

<b>Purpose of shopping</b>	<b>Percent(%)</b>
Occasion	19.2
Recreation	24.7
Gift	37.0
Commercial	8.2
Tourism	11.0
Total	100

#### 4.2.2 Retails

##### ***Price of retail goods at HKIA***

Passengers were asked to rate the price of retail goods at Hong Kong International Airport. The results from the survey are: 6.5% of respondents believe that it is very cheap to shop at HKIA; 15.5% believe it is cheap to shop at the airport; 36% believe the prices of goods at HKIA are reasonable; 35% of respondents believe they are expensive, with only 7% of respondents claiming that they are very expensive.

##### ***Weakness of retail at HKIA***

Regarding which aspects of shopping are in need of improvement. The survey reveals that 20.1% of respondents believe there are not enough shopping outlets at the airport, 37.4% of respondents believe there are not enough variety of products, 18% believe shops at the airport are too concentrated in one area, and 24.5% of respondents claiming that the goods are overpriced.

### ***HKIA retail shop numbers***

67.6% of respondents view shopping at HKIA as convenient, with 32.4% arguing that it is inconvenient to shop at HKIA. The number of shops at the airport is a major concern for HKIA; while more shops can provide airport more commercial revenue, too many shops at the airport might cause obstruction to the passengers, and thus the airport should carefully consider the number of shops inside the terminals.

According to the survey, 37.4% of respondents say a 0-10% increase in shop numbers would be sufficient, 41% of respondents say a 11-20% increase in shop numbers would be sufficient, 19.4% of respondents vouch for a 21-30% increase, 1.4% of respondents say a 31-40% and only 0.7% of respondents say a 41-50% increase would be sufficient. This provides a guideline for the airport on deciding how many shops should be added in order to increase its commercial revenue without obstructing passengers.

### **4.2.3 Food & Beverage**

Hong Kong International Airport has a total of 65 food & beverage outlets, 40 of which are located in terminal 1, and 25 in terminal 2. These outlets provide a wide range of dining options for passengers and anyone who would like to eat at the airport, including choices between Asian restaurants, HK style coffee shop, fast food, food court options, western restaurant, café and more (HKIA, 2008). These outlets are located both before and after immigration control.

#### ***Who are eating and what do they eat at HKIA?***

Survey data indicates that 54% of respondents have used the food and beverage services at HKIA over the past 12 months, and 46% have never purchased anything from food and beverage outlets. Respondents between 18 to 40 years old are the biggest group of customers; they account for 61% of respondents who have used food and beverage outlets at HKIA. Respondents who are over 50 years old account for 9%, and respondents who are below 18 years old only account for 5%. The most popular food is western style cuisines (26.7%) followed by Asian food (22.7%), and the third most popular type of food is fast food (13.3%). It shows that young travellers prefer fast food (around 30%) over other options and only 18% passengers over 50 years old prefer fast food at HKIA.

#### ***Price of foods and beverages at HKIA***

Passengers were asked to rate the price of F&B at the airport. From the survey results, the majority of respondents (36.7%) view the prices of F&B at HKIA as expensive; with 30.9% respondents claiming the prices are reasonable; 22.3% claiming that prices are cheap; 7.2% very expensive; and only 2.9% who believes them to be very cheap.

#### ***Problems of F&B services at HKIA***

According to the survey, the main problems of F&B at HKIA are: 'not enough variety of food (40.3%)'; 'food and drinks are overpriced (27.3%)'; 'too few outlets (18.7%)'; and 'outlets are too difficult to find (8.6%)'. It shows that 71.9% of respondents say they prefer using food and beverage outlets that are closer to the departure gates.

#### ***HKIA F&B outlet numbers***

Data from the survey shows that 39.6% of respondents say a 0-10% increase in food and beverage outlet numbers is sufficient, 30.9% of respondents say a 11-20% increase is sufficient, 25.2% of respondents say a 21-30% increase is sufficient, 3.6% of respondents say a 31-40% is ok, and only 0.7% of respondents say a 41-50% increase is sufficient. It provides guidelines for the airport to decide how many food and beverage outlets they should add in order to increase their commercial revenue.

**4.3 Hypotheses tests**

ANOVA tests are used to test the hypotheses H1-H3 and T-Test is performed to test H4. Tables 5 shows the ANOVA testing results (the significant level is 0.05), and Table 6 summarises the result of Hypotheses tests H1-H3.

**Table 5** Test results of ANOVA

Survey Item	Gender			Age			Income		
	F	P-value	Significant difference	F	P-value	Significant difference	F	P-value	Significant difference
Purpose of shopping What do you buy at HKIA? How much do you spend at HKIA?	0.036	0.850	No	2.198	0.069	No	8.959	0.000	Yes
	1.727	0.190	No	8.130	0.000	Yes	2.055	0.106	No
	1.841	0.176	No	3.228	0.013	Yes	3.661	0.013	Yes
Survey Item	Nationality			Education			Travel Purpose		
	F	P-value	Significant difference	F	P-value	Significant difference	F	P-value	Significant difference
Purpose of shopping What do you buy at HKIA? How much do you spend at HKIA?	0.521	0.471	No	1.280	0.281	No	3.360	0.010	Yes
	0.901	0.343	No	16.049	0.000	Yes	2.161	0.074	No
	3.775	0.053	No	14.797	0.000	Yes	3.938	0.004	Yes

**Table 6** Summary of Hypotheses tests H1-H3

H1a	supported	H2a	supported	H3a	supported
H1b	supported	H2b	rejected	H3b	rejected
H1c	rejected	H2c	supported	H3c	rejected
H1d	supported	H2d	supported	H3d	supported
H1e	supported	H2e	rejected	H3e	rejected
H1f	rejected	H2f	supported	H3f	rejected

ANOVA tests in Table 5 suggest that there are no significant differences between gender, age, nationality and education for the purpose of shopping, but there are significant differences for income and travel purpose.

Regarding what passengers bought at HKIA, results show that there are no significant differences between what they purchased based on gender, income, nationality and travel purpose, but significant differences existed based on age and education.

For how much money passengers spent at HKIA, testing results indicate that there are no significant differences between gender and nationality, but there are significant differences for age, income, education and travel purpose.

T- value and P-value (0.000) between shoppers and non-shoppers in table 7 suggest that significant differences exist between shoppers and non-shoppers. Non-shoppers perceive the prices of goods at HKIA as higher than shoppers (mean is 3.50 for non-shoppers comparing 2.92 for shoppers).

Table 7 T-Test between shoppers and non-shoppers

	Shoppers (N=292)		Non-shoppers (N=264)		T- value	P- value
	Mean	SD	Mean	SD		
The price of goods at HKIA	2.92	0.934	3.50	0.927	7.365	0.000
What aspect of HKIA shopping need to improve	2.29	0.959	2.67	1.148	4.237	0.000
Shop numbers increase is good for shopping	2.04	0.731	1.68	0.875	-5.272	0.000

## 5. Conclusions

This study investigates passengers' buying behaviors based on three main questions: which products they purchased, how much money they spent and their shopping purpose from a socio-demographic perspective at the Hong Kong International Airport (HKIA).

Testing of hypotheses suggest that there are mixed results for shopping purpose, what passengers purchased and how much they spent. Between the shopping purposes of passengers, significant differences exist based on income and travel purpose, but not for other factors. Regarding what passengers brought at HKIA, significant differences exist for age and education. Significant differences in purchases exist between how much money was spent at HKIA based on age, income, education and travel purpose. Significant differences exist between shoppers and non-shoppers regarding their perception of the price of goods at HKIA, which aspects of HKIA retails need improving, and shop numbers increasing is good for shoppers.

Weakness of retails and F&B at HKIA were found in the study. It identifies the potential opportunities of these activities from passengers' perspective in order to increase service quality and revenue.

### *Practical implication for HKIA*

Retail: shopping at HKIA is convenient; there are not enough shopping outlets at the airport; there are not enough variety of products at the airport; prices of the products are reasonable; and shop outlets should be increased between 11 to 20 percent. Food & Beverage: the airport doesn't have enough variety of food; food prices are little bit overpriced; and F&B outlets should be increased between 11 to 20 percent.

### *Academic implication*

Little attention has been given to passengers' opinion regarding their spending behaviour in airport planning and management. This research is the first attempt to gain some useful information on passengers' perspectives on shop numbers and pricing, and how much an increase in shop numbers and pricing increase is considered reasonable and acceptable. It contributes to the field studies of airport planning and management offering passengers' feedback for future consideration.

### *Limitations and Direction for Future Research*

This study suffers from some limitations in relation to data collection and results interpretation. First, our survey respondents were chosen from Hong Kong International Airport, which was only one geographic region. The analysis and discussion based on the perceptions of the sample respondents may vary if the data was collected from a different region. Samples may be collected from more regions for future research. Second, this study was limited to retail and F&B only, and research may be extended to other commercial activities. The final limitation might be the omission of possibly important variables, for example, travel frequency and FFPs (frequent flyer programs). Future research may also investigate whether the identified questions and scale items in the paper are completely appropriate in measuring aspects of commercial activities at an airport.

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