

Online Shopping in Asia/Pacific— Patterns, Trends and Future Growth



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MasterCard Worldwide is widely recognized as a knowledge leader around the world. Over the years, the global payment solutions company has devoted extensive resources to developing a deeper understanding of the payments card markets and the business and economic environment through surveys and independent research studies. Some of these initiatives include the MasterCard Worldwide Index of Consumer Confidence, MasterCard Worldwide Index of Retail, MasterCard Worldwide Index of Travel & Asian Lifestyles, MasterCard Worldwide Index of Women's Advancement, MasterCard Worldwide Index of China's Affluent and MasterCard Worldwide Centers of Commerce. Today, these MasterCard offerings are much sought after by analysts, academics and decision makers in financial institutions, government agencies and multi-national organizations.

Launched in 1993, the MasterCard Worldwide Index of Consumer Confidence has proven to be an excellent barometer of the general consumer pulse in Asia/Pacific. The twice annual survey analyzes prevailing consumer perceptions of economic conditions for the next six months. Its insights into the dynamics of consumer sentiment, and the market paradigm deliver value to a variety of audiences, including customers and business partners.

In 2003, MasterCard established the Master-Intelligence Knowledge Panel comprising leading economists and business strategists from China, Hong Kong, India, Japan, Korea and South East Asia. In 2006, it was expanded to become a global knowledge panel, which now conducts research and provides insights on the economic and business environment globally. The panel is headed by Dr. Yuwa Hedrick-Wong, Economic Advisor (Asia/Pacific), MasterCard Worldwide.

Today, MasterCard continues to demonstrate its commitment by not only adding value with cutting edge research but also through sharing knowledge in new areas. Its knowledge leadership is well recognized and unrivaled.

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Executive Summary

This report examines e-commerce trends; and identifies the drivers and barriers to online purchases in key markets in the region. Both consumer behavior in relation to e-commerce, and e-commerce outlook in the region are analyzed. The role of credit cards in e-commerce and their importance in the online shopping regime is also examined. Both desk top research and an online survey were used in preparing this report.

The key findings are:

- Online shopping is a growing trend in the region, with 63% of survey respondents reporting that they shop online at least occasionally.
- The key drivers of online shopping growth are mainly internet penetration, income levels and cultural factors.
- Huge growth in online shopping is expected, led by China and India but with other countries such as Thailand also likely to exhibit strong growth— as incomes and internet penetration rise.
- The survey suggests a lower average tendency in the region for opportunistic purchases with online shopping compared to offline. But there are differences within countries which suggest that the degree of financial sophistication is a key in influencing the degree of opportunistic spending.¹
- Credit cards are a preferred mode of payment for online shopping. If security concerns were allayed, there would be substantially more online shopping and more of this online shopping would be paid for with credit cards.

Overview of Online Shopping

Online Shopping— Definitions and Processes

Online shopping can be defined as the process of purchasing goods or services over the inter-

net. Most online retailers use shopping cart software to allow consumers to accumulate multiple items of varying quantities, similar to an actual shopping cart in a real-world store. Once the customer has finished selection, payment and delivery information are provided to complete the transaction. Although credit cards are the most commonly accepted medium of payment, most vendors offer a variety of payment methods, including debit card, check, wire transfer, postal money order etc. Product delivery is accomplished through either shipping or in-store pickup, where the customer picks up the product from the closest store the business has. This is the method most often used by business with both a physical and online presence, the 'bricks-and-clicks' business model.

Online shopping has many distinct and unique advantages and disadvantages which separate it from traditional retail shopping:

- On the plus side, online stores are available 24/7, unlike traditional retailers, and can be accessed from the convenience of one's own home. Second, searching and browsing for products online is often quicker than in a physical store, although consumers with dial-up internet access may have trouble accessing content-rich websites quickly.
- On the minus side, the need to ship the product to the buyer often introduces a significant delay, not present in traditional retailing. Second, should the customer not be satisfied with the product, or should some unforeseen problem arise requiring the product to be returned, it may be more difficult for the customer to obtain compensation or a refund than if they had purchased the product from an actual store.

The shopping experience for online shoppers is also very different:

- In most cases, customers must be content with photographs and text for a description of the product, which in an actual store would be available for direct inspection.
- In the physical shopping experience, shop

employees are available to answer any questions the customer may have about the product, whereas online shoppers have to rely on email or telephone communications with a more anonymous and distant shop employee should they have any queries.

- On the other hand, online users have access to data such as supplemental product information and user reviews and comments which may not be available to bricks-and-mortar shoppers.
- The ability to compare prices between different stores quickly and easily is a big advantage for online shoppers, and they often have access to a wider selection of goods, made possible by avoiding the need to physically display them. The availability of unique goods, which may be hard or impossible to find offline, is also attractive to consumers.

The development of online shopping has been slowed by a number of factors. Chief among them has been online shoppers' concerns regarding fraud and security. Although Secure Sockets Layer (SSL) encryption has for the most part prevented interception of credit card numbers in transit between the consumer and merchant, identity theft is still a concern for consumers. Lax computer security can allow hackers to break into a vendor's website and steal names, addresses and credit card numbers. Phishing is also a concern, where consumers are fooled by a website crafted to resemble a legitimate online vendor into giving up their details. Indeed, our survey showed that the factor consumers considered of most importance when making an online purchase is a secure payment facility, with the majority of users (65%) listing it as extremely important, including a high percentage of Chinese (76%) and Singaporean (77%) consumers. Consumers who had been reluctant to make a purchase in the last three months also listed safety as their primary concern (65%), including 87% of Chinese and 73% of Indian consumers.

A Brief History

Online shopping is a major part of the overall

electronic commerce, or e-commerce, industry which consists of all the buying and selling of goods and services over electronic systems such as the internet and other computer networks by households, businesses and other agencies. With the spread of the internet, the amount of trade that is conducted electronically has seen extraordinary growth; and has led to innovations and development in areas such as electronic funds transfer, electronic data interchange and internet marketing.

Before the widespread introduction of the internet to the general public in 1994, the term electronic commerce referred to the use of technologies such as EDI and EFT, introduced in the late 1970's, to facilitate business practices. With the rise of the world wide web many predicted that e-commerce would soon become a major economic sector, but security protocols such as HTTPS did not become secure enough for widespread use of such transactions until 1998.

During the dotcom bubble, which saw the emergence of the internet as a new economic sector, companies catering to consumers seeking to make use of this new tool to buy and sell emerged, many of which collapsed when the bubble burst in 2000 and 2001. Despite this, many traditional, brick-and-mortar retailers recognized the valuable markets these companies had identified, and took steps to add e-commerce capabilities to their own websites. New methods of sending payments, such as e-shopping carts, electronic payment services and secured credit card payment authorizations became more widely used.

The emergence of e-commerce as a viable alternative to traditional retailing models has also had other effects. By significantly reducing the barriers of entry for the sale of many types of products, e-commerce has allowed sellers to enter the market who may not have had this ability prior to the advent of the internet. For example, online auction sites such as eBay, or large online retailers such as Amazon, have allowed small, home-based sellers to bypass much of the costs facing new entrants into the

market, and allowed them to take advantage of those companies' exposure.

In 2006, online sales in the US, excluding travel, rose 29% to reach \$146.4 billion,² representing 6% of overall retail sales³ and was expected to rise 19.1% to \$174.5 billion in 2007. Total sales including travel are expected to increase 18% to \$259.1 billion. According to a Forrester Research report in January,⁴ this slight deceleration in growth marks the beginning of a slower trend reflecting the maturing of e-commerce and online shopping in the US. The Forrester report predicts 17% growth in 2008, followed by further slowing to an average of 11% annual growth by 2012, at which time the market will be worth \$334.7 billion.

Growth, however, is poised to accelerate in the Asia/Pacific region. While business-to-consumer e-commerce sales for the five major markets in the region amounted to a little over \$59 billion in 2006, with Japan having the largest share, this situation is soon expected to change.⁵ E-commerce sales in Asia are expected to grow at an annual rate of 23.3%, reaching \$168.7 billion by 2011. Japan, currently the largest market in the region with 62% of online sales, is expected to lose this pre-eminence as the two large emerging markets of China and India develop. Although internet penetration in these countries is low, at 15.9% and 5.3% respectively, their large populations translate this into a huge number of internet users. China is poised to overtake the US in the sheer volume of internet transactions this year.

There are, however, still a number of constraints on the future growth of the e-commerce industry in Asia, such as immature online payment systems, poor delivery networks and distrust between buyers and sellers. Consumers in this region also continue to have issues with the security of the online retailers they frequent, as well as the convenience of the payment methods available. A tradition of cash-based transactions, common to developing countries, also results in distrust. The lack of a nationwide credit information system or an efficient delivery

network, both essential infrastructures which are vital for continued, sustainable growth in the e-commerce sector, also limit the ability of many Asia/Pacific markets to expand rapidly in this sector. Nevertheless, the overall potential of e-commerce is immense in Asia/Pacific.

The Online Survey and Key Findings⁶

Methodology

The survey was done between 18th December 2007 and 28th December 2007; with a total sample size of n = 4,157 in the Asia/Pacific region including:

Hong Kong	n= 541
China	n= 519
Australia	n= 517
Singapore	n= 515
South Korea	n= 520
Japan	n= 507
India	n= 517
Thailand	n= 521

The sample was restricted to individuals with bank accounts between the ages of 18 and 49 who accessed the internet at least once a week.

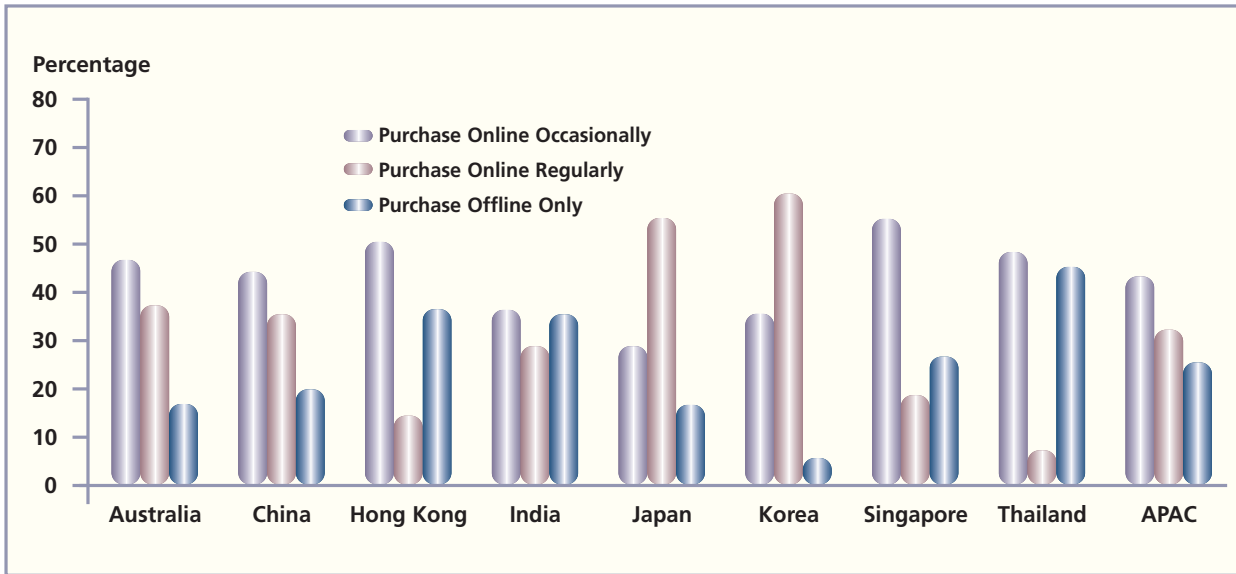
Key Findings: Frequency of Usage

The survey found that online shopping was conducted by 63% of all respondents in the region, with an especially high percentage from South Korea (83%) and Japan (83%). Although 43% of respondents claimed to only purchase online occasionally, and 19% browse online but purchase offline, a sizable percentage (32%) browsed and purchased online regularly, with 60% of South Korean and 55% of Japanese online shoppers claiming they did so (Chart 1).

An average of 3.1 purchases per person were made by online shoppers in the region over a period of three months (Table 1). Note the following:

- The most active shoppers were from South Korea (4.8) and Japan (3.7).

Chart 1. Purchase Behavior in Asia/Pacific



Source: MasterCard's Survey Findings conducted by IPSOS

- Online shoppers from Thailand and Hong Kong were the least active, with an average purchase of just 1.8 times and 2.1 times respectively.
- Most online shoppers (76%) in the region claim that they will make a purchase in the next six months, especially those from South Korea (93%) and China (87%).
- Online shoppers in the region spent an average of \$612.40 online over a period of three months, with the greatest spenders coming from Singapore (\$770.70) and South Korea (\$707.50); while online shoppers from China (\$506.10) and Thailand (\$406.30) spend the least.

Table 1. Frequency and Value of Online Purchases in Asia/Pacific

Country	Indicative Average Frequency of Online Purchases in Past 3 Months	Likely to Make Online Purchases in the Next 6 Months (Percentage of Respondents)	Total Spending on Shopping Online in the Past 3 Months (USD)
Australia	3.4	56	653.50
China	3.6	63	506.10
Hong Kong	2.1	31	561.10
India	2.5	39	629.20
Japan	3.7	60	581.00
Korea	4.8	56	707.50
Singapore	2.8	44	770.70
Thailand	1.8	31	406.30
Asia/Pacific	3.1	47	601.90

Source: MasterCard's Survey Findings conducted by IPSOS

Key Findings: Perceptions of Online Shopping

Generally, Asia/Pacific users perceive online shopping to be convenient (71%) and easy (66%), with 62% of the respondents claiming that online shopping is easier than shopping via offline catalogue and telephone. However, a number of respondents (33%) in the region do

not feel secure shopping online, with an especially high proportion (50%) among Thai shoppers. Table 2 reports that the factors that are most important to Asia/Pacific online shoppers include a secure payment facility (87%), price (87%), and convenient payment methods (85%).

Table 2. Important Factors Affecting Propensity of Online Shopping

	Tier I			Tier II			Tier III		
	Secure Payment Facility	Price/Value	Convenient Payment Methods	Reputation of Website	Good Customer Service	Low Delivery Charges	User-Friendly Website	Speedy Transaction	Promotional Offers
Australia	89	90	88	80	81	79	82	78	56
China	92	85	86	90	82	77	67	81	69
Hong Kong	83	79	78	82	77	80	71	73	73
India	87	84	83	77	84	72	79	81	57
Japan	78	86	78	61	66	82	66	58	70
Korea	82	83	84	92	77	83	84	80	77
Singapore	94	92	92	87	85	88	88	83	77
Thailand	90	86	90	74	81	79	80	81	69
Asia/Pacific	87	87	85	79	80	80	77	77	69

Source: MasterCard's Survey Findings conducted by IPSOS

Chart 2. Major Reasons for Not Making Online Purchases in Asia/Pacific



Source: MasterCard's Survey Findings conducted by IPSOS

Key Findings: Security a Major Concern

Security is the top concern for online shoppers in the Asia/Pacific region (Chart 2); 65% of internet users who are reluctant to shop online do not do so because they fear making online transactions is unsafe, and the figure jumps in China (87%), Thailand (75%), Hong Kong (74%) and India (73%). It seems that online shoppers in more developed nations such as South Korea (26%) and Japan (31%) are not as fearful as online shoppers from developing countries. When asked how online shopping could be improved in the future, the vast major-

ity (74%) of online shoppers wanted to see enhanced payment security and improved user confidence in online transactions.

Key Findings: Methods of Payment

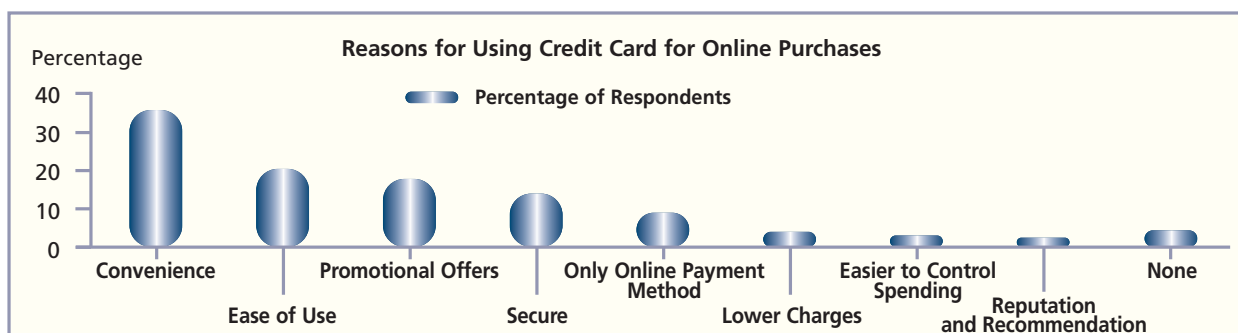
In general, the most preferred method of online payment for consumers in the Asia/Pacific region was found to be credit card (Table 3), with the exceptions of China and Thailand where the debit card is more preferred for online purchases. Meanwhile, convenience and ease of use are the main factors triggering the use of credit cards for online purchases in the Asia/Pacific region (Chart 3).

Table 3. Most Preferred Form of Online Payment Method in Asia/Pacific

Country	Credit Cards	Debit Card	Electronic Transfers	Others
Australia	52%	24%	3%	19%
China	25%	35%	32%	7%
Hong Kong	66%	20%	7%	5%
India	60%	24%	2%	4%
Japan	70%	17%	5%	6%
Korea	49%	28%	5%	16%
Singapore	63%	26%	8%	2%
Thailand	41%	46%	7%	4%
Asia/Pacific	53%	27%	9%	8%

Source: MasterCard's Survey Findings conducted by IPSOS
 Note: Others include PayPal, Cheque Card and Cash

Chart 3. Reasons for Using Credit Card for Online Purchases in Asia/Pacific



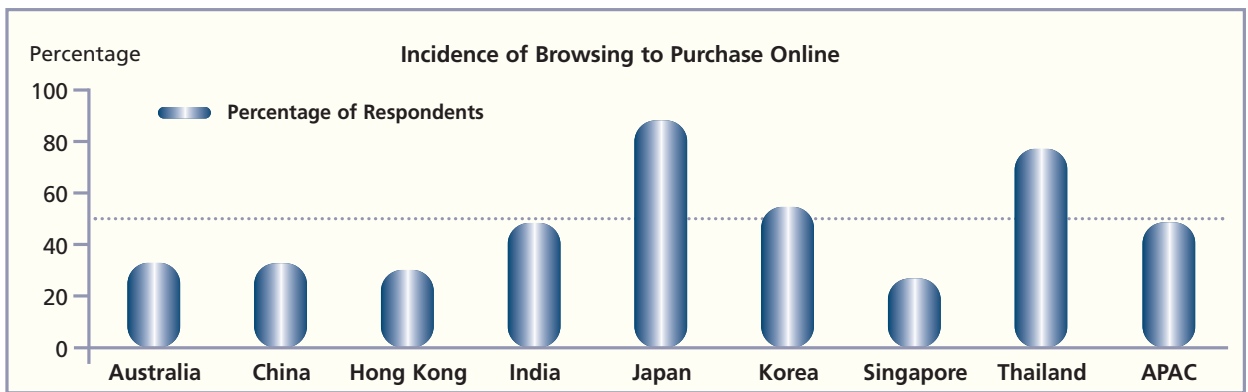
Source: MasterCard's Survey Findings conducted by IPSOS

Key Findings: Customer Behavior

The survey finds that 44% of online shoppers in Asia/Pacific have been shopping online for more than three years, with an especially high proportion noted among Koreans (62%) and Japanese shoppers (68%). A majority (84%) of online shoppers in the region tend to plan their shopping in advance and conduct research on their planned purchases, including browsing on the internet (87%) and the merchant's website (61%) and through recommendations (47%).

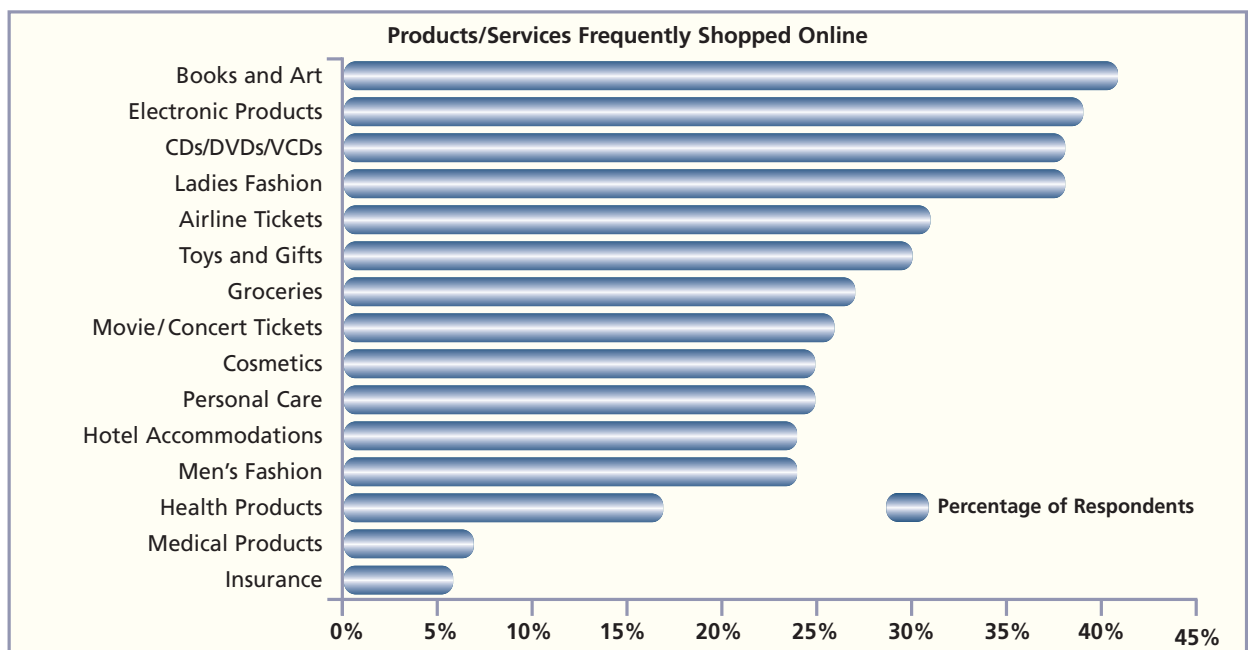
The survey also found that 43% of Asia/Pacific online shoppers tend to purchase online most of the time after browsing online, with significantly higher incidence rates of 89% and 78% reported among Japanese and Thai shoppers respectively (Chart 4). The products and services most frequently bought online (Chart 5) among Asia/Pacific online shoppers are books and art (41%), home appliances and electronic products (39%), CDs/DVDs/VCDs (38%) and ladies clothing/accessories (38%).

Chart 4. Incidence of Browsing to Purchase Online in Asia/Pacific



Source: MasterCard's Survey Findings conducted by IPSOS
 Note: The chart reports the proportion of respondents in each respective country that will purchase most of the time after browsing online.

Chart 5. Products and Services Frequently Shopped Online in Asia/Pacific



Source: MasterCard's Survey Findings conducted by IPSOS

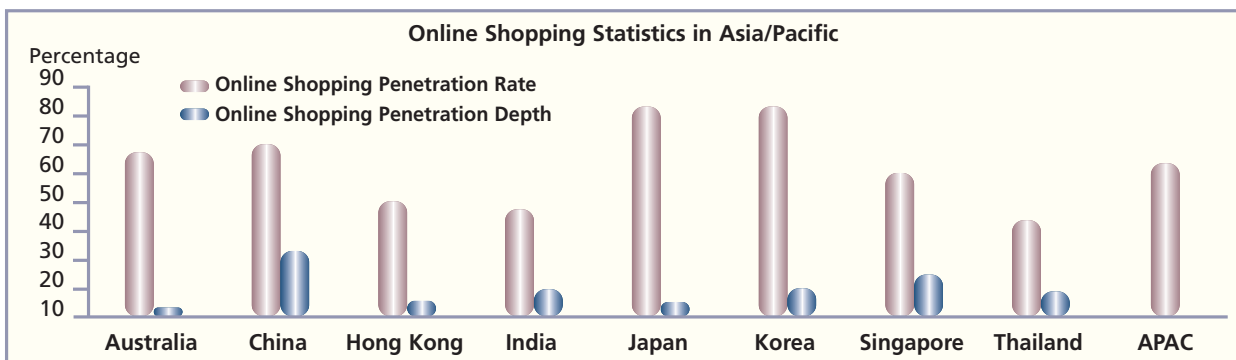
Opportunistic buying as a whole does not seem to be a major factor for many online shoppers: 41% bought on impulse just a couple of times, while 34% hardly ever bought on impulse. For those online shoppers that did make opportunistic purchases, the main trigger appeared to be low prices or substantial discounts compared to what was available offline, which 74% of online shoppers listed as a factor. Other factors include the availability of unique items that were available only online (48%) and advertisements and promotions (33%). Similar to the types of products frequently purchased online,

items most likely to result in opportunistic buying were ladies clothing and accessories, home appliances and electronic products and CDs/DVDs/VCDs.

Analysis of Survey Findings

In this section, survey findings are analyzed in conjunction with other data to drill down deeper into online customer behavior in the Asia/Pacific region. Chart 6 summarizes the key statistics highlights of online shopping in Asia/Pacific.

Chart 6. Japan and Korea have the Highest Online Shopping Penetration Rate



Source: MasterCard's Survey Findings conducted by IPSOS, EIU Database and Internet World Stats website (<http://www.internetworldstats.com/stats.htm>).
 Notes: 1. Online shopping penetration rate—defined as the proportion of online shoppers population among online population—is calculated using the probability of online purchases.
 2. Online shopping penetration depth is calculated using the proportion of online purchases over total personal consumption expenditure.

Table 4. Online Shopping Statistics in Asia/Pacific, 2007

Country	Probability of Online Purchases ¹ (Percentage)	Internet Penetration ² (Percentage of Population)	Online Purchases/Income ³ (Percentage)
Australia	67.0	75.9	7.4
China	70.0	15.9	11.8
Hong Kong	50.0	69.9	8.9
India	47.0	5.3	11.0
Japan	83.0	68.7	8.4
Korea	83.0	71.2	10.7
Singapore	60.0	53.2	9.8
Thailand	43.0	13.0	10.5
Asia/Pacific	62.9	46.6	9.8

Source: MasterCard's Survey Findings conducted by IPSOS, EIU Database and Internet World Stats website (<http://www.internetworldstats.com/stats.htm>).
 Notes: 1. From the survey, percentage of sample that have purchased online. 2. From Internet World Stats website. 3. Average amount of spending per year/annual income reported by survey respondents.

Online Shopping in Asia/Pacific

Market depth, being one of the key factors shaping strategic business development and planning, will be examined in detail in this section. Combining empirical findings from the survey and figures collated from economic databases and relevant websites, several indicators that affect online shopping in the Asia/Pacific are examined.

Table 4 reveals the following online shopping trends in the Asia/Pacific region:

- Japan and Korea have the highest online shopping penetration rates in the region, with an 83% probability each that the online population will purchase online.
- China has one of the lowest internet penetration rates (15.9% of population) in the region. But the online shopping penetration rate among this small group is unusually high at 70%—indicating that the online population has a high tendency to make online purchases.
- India and Thailand have the lowest online shopping penetration rates in the region, with a probability of less than 50% that the online population will purchase online.

Drilling further down through the data, we derived a measure of the intensity of online shoppers' spending by comparing the ratio of online shopping over income (Column 3 in Table 4) to the ratio of personal consumer expenditure to gross national income in each country.⁷ This brings out some interesting characteristics (Table 5):

- Surprisingly, developed countries in the region like Australia, Hong Kong and Japan tend to have relatively lower online shoppers' spending intensity—an indication that the extent of online shopping spending depends on more than the level of income in the country.
- Among the sampled online shoppers in China, a significant and extraordinarily large proportion (32.8%) of their personal consumption expenditure is estimated to be contributed by online purchases.

- Thailand and India: Online shoppers' spending intensity in both countries is slightly below the region's average.

Key factors Driving Online Shopping Penetration

An econometrical analysis was conducted to identify key factors driving online shopping penetration rates. The empirical evidence suggests that there is an 87.1% possibility that a strong relationship exists between the online shopping penetration rate and three factors; (i) internet penetration rate, (ii) income level and (iii) culture in each of the countries analysed. While it is true that the sample of eight countries is inadequate to make a strong inference, plotting the

Table 5. Online Shoppers' Spending Intensity

Country	Estimated Online Purchases/ Total Personal Expenditure ¹ (Percentage) of Sample
China	32.8
Singapore	24.5
Korea	20.0
India	19.4
Thailand	18.7
Hong Kong	15.2
Japan	14.7
Australia	13.1
Asia/Pacific	19.8

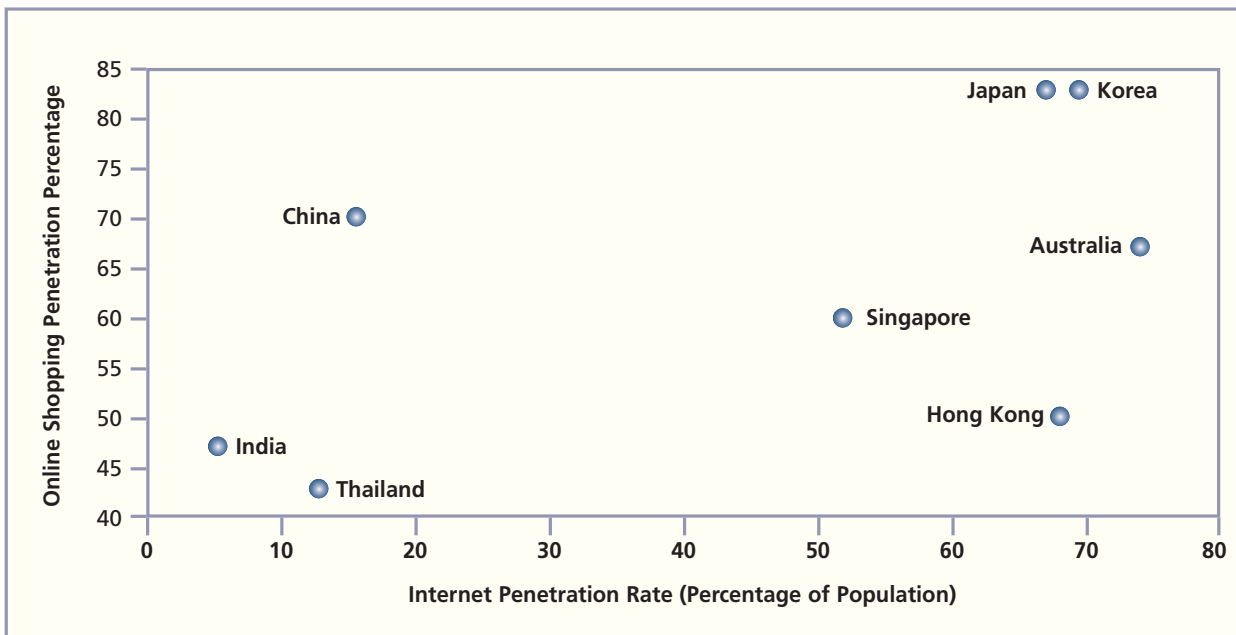
Source: MasterCard's Survey Findings conducted by IPSOS, EIU Database and Internet World Stats website (<http://www.internetworldstats.com/stats.htm>).
Notes: 1. Calculated as the ratio of Online Purchases/Income (Column 3) to the ratio of personal consumer expenditure/GDP in each country.

charts 7 to 8 does show a distinct relationship between these variables.

The widespread usage of internet in a country will tend to result in a more favorable attitude towards online shopping among the population. Countries with higher internet

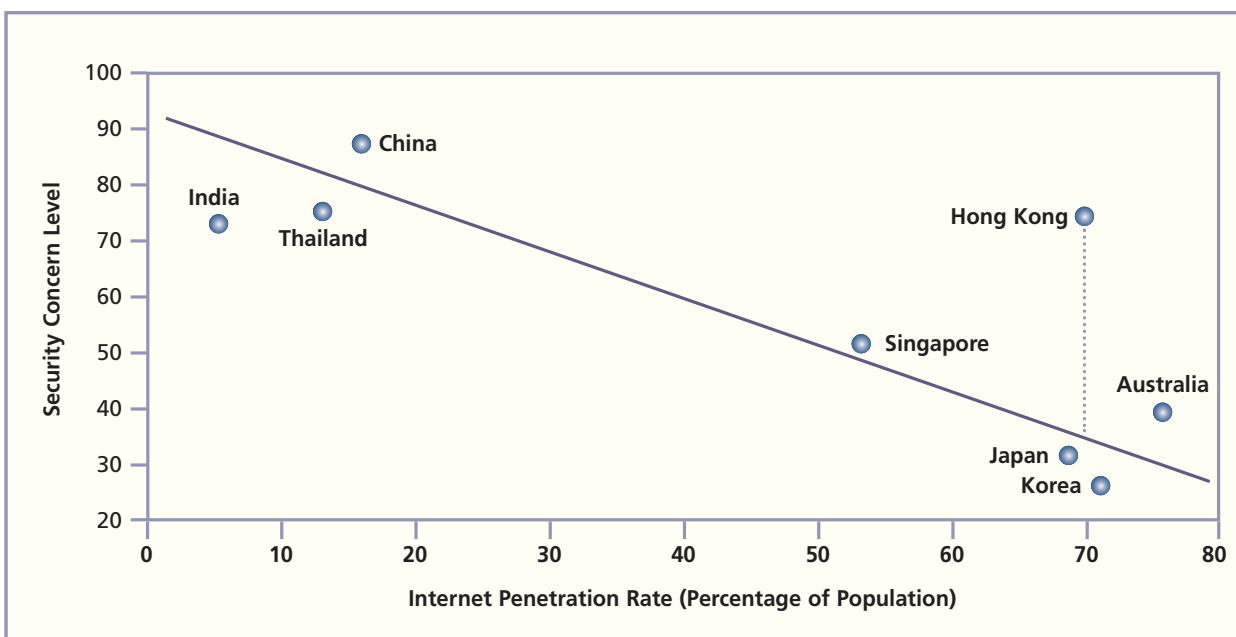
penetration rates in the Asia/Pacific are reported to have higher online shopping penetration rates (Chart 7). Indeed, security concerns—the top factor deterring online shopping activity in the region— tends to be low in countries with high internet penetration rates, and vice versa (Chart 8).

Chart 7. Internet Penetration and Online Penetration Rate



Source: MasterCard's Survey Findings conducted by IPSOS, EIU Database and Internet World Stats website (<http://www.internetworldstats.com/stats.htm>).

Chart 8. Security Concerns Inversely Correlated with Internet Penetration Rate...



Source: MasterCard's Survey Findings conducted by IPSOS, EIU Database and Internet World Stats website (<http://www.internetworldstats.com/stats.htm>).

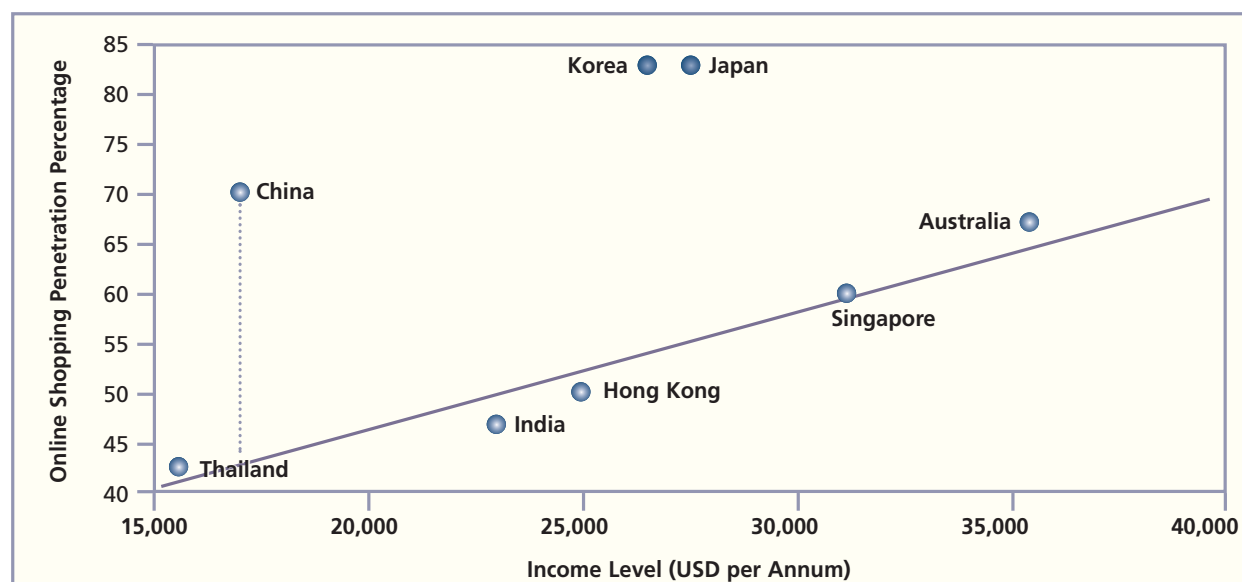
Higher Income Countries Tend to Have Higher Online Shopping Penetration

Chart 9 brings out the relationship between income and online shopping penetration rates. Divergence from the trend in the case of Japan and Korea can be attributed to positive contributions from high internet penetration rates and a culture favorable towards online shopping in these countries. The positive divergence of China is a result of sample bias in the survey. In China, the sampled population is biased towards the higher income group, with the sampled average annual income at US\$17,090 compared to the country's per capita GDP of US\$2,510 in 2007 (Table 6). With internet pen-

etration rate at merely 15.9% in China, it is clear that a majority of the sampled population belongs to the upper income end of the income distribution.

Note that such a sample bias towards the higher income group is largest in India, which has the lowest internet penetration rate of 5.3% in the region: it is the top income earners who constitute the majority of the online population in less developed countries with low internet penetration rates. Meanwhile, the negative divergence observed in the case of Hong Kong is attributable to the negative effect from cultural factors.

Chart 9. Higher Income Countries Tend to Have Higher Online Shopping Penetration



Source: MasterCard's Survey Findings conducted by IPSOS

Table 6. Sampled Income versus GDP per Capita

Country	Sampled Annual Income (USD)	GDP per Capita (USD)	Sampled Annual Income / GDP per Capita
Australia	35,496	43,820	0.8
China	17,090	2,510	6.8
Hong Kong	25,078	29,060	0.9
India	22,977	1,020	22.5
Japan	27,661	34,400	0.8
Korea	26,510	19,830	1.3
Singapore	31,322	33,600	0.9
Thailand	15,525	3,680	4.2

Source: MasterCard's Survey Findings conducted by IPSOS and EIU Database.

Cultural Factors Play a Big Role

Focusing on the survey where respondents were asked their reasons for not making purchase online allows for a quantitative assessment of the effects of a cultural disposition to not shop online. Percentages of the sample that gave specific reasons such as concerns over security or dislike of additional administrative and delivery charges are excluded, and, instead the percentage of sample in each country that simply preferred going into a shop and physically inspecting the goods is analyzed. The reciprocal of this ratio is taken as an index of the cultural propensity for online shopping. Chart 10 presents the results of this analysis. Clearly, cultur-

al factors in Hong Kong tend to be less favorable towards online shopping activity compared to other developed countries such as Australia, Japan and Korea.

Growth Potential of Online Shopping

China offers the largest potential online shopping market in Asia/Pacific with India's market poised to expand rapidly in coming years. As of 2007, China offers the largest online shopping market in the region with an estimated online population of 147.1 million which represents 49.9% of the total e-commerce population in the region (Table 7).

Chart 10. Australia, Japan, Korea: Most Favorable Cultural Affinity for Online Shopping



Source: Calculated by Centennial Group using MasterCard's Survey Findings conducted by IPSOS. Note: The cultural factor is calculated using the reciprocal of the proportion of online population who prefer to shop offline in each country.

Table 7. Online Shopping Market Outlook

Country	Internet Penetration Rate (Percentage of Population)		Online Shopping Penetration Rate (Percentage of Online Population)		Online Shopping Population (Millions)	
	2007	2010	2007	2010	2007	2010
Australia	75.9	78.2	67.0	72.1	10.4	12.0
China	15.9	47.5	70.0	74.8	147.1	480.4
Hong Kong	69.9	76.5	50.0	62.5	2.4	3.5
India	5.3	28.1	47.0	59.2	28.1	203.1
Japan	68.7	70.8	83.0	83.1	72.7	75.1
Korea	71.2	77.6	83.0	88.9	29.0	33.0
Singapore	53.2	57.0	60.0	67.7	1.5	1.8
Thailand	13.0	27.9	43.0	57.5	3.6	10.5

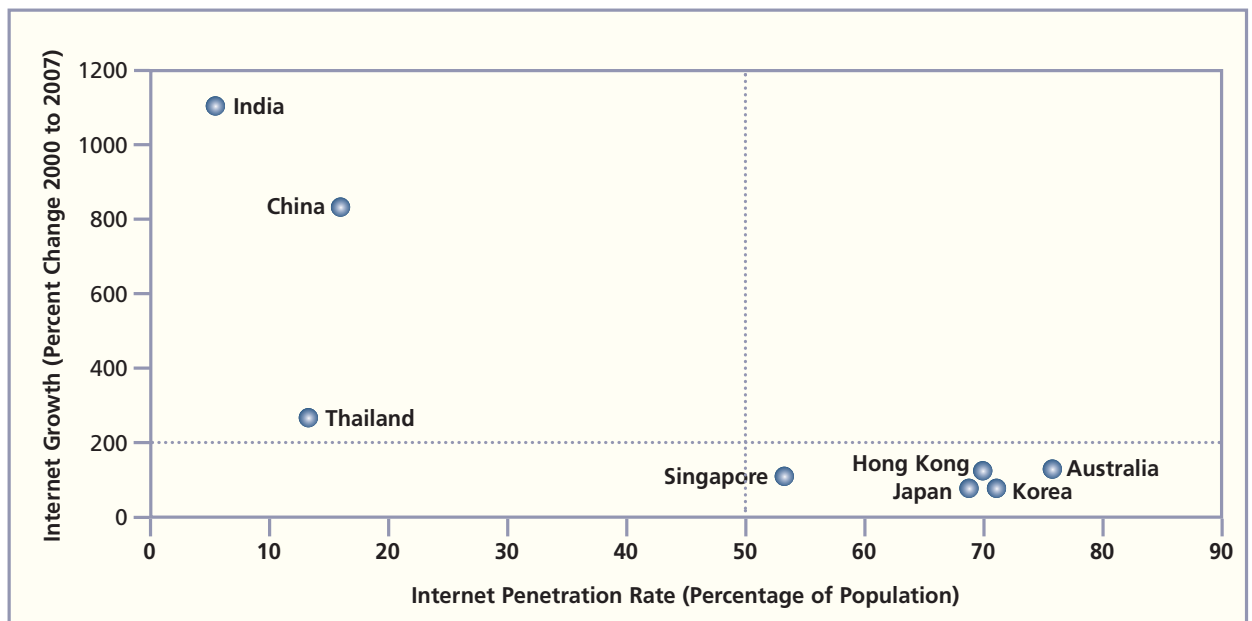
Source: MasterCard's Survey Findings conducted by IPSOS, UN Population Census and Internet World Stats website (<http://www.internetworldstats.com/stats.htm>).
 Notes: 1. For countries with low internet penetration rates like China, India and Thailand, we will extrapolate the average annual growth rate in 2000 to 2007 forward to 2010. The projected proportion of urbanized population in the country in 2010 will be employed as a cap in this case. For more developed countries with higher internet penetration rates, we noted that the internet penetration rate tends to tie intuitively to the proportion of certain demographic age group in the country. Therefore, we will project the internet penetration rates using demographic estimations by UN Population Census in 2010.
 2. Online shopping penetration rate in 2010 is projected using an econometrical model with income level, internet penetration rate and the cultural factor as the independent variables. The cultural factor is assumed to remain constant in coming years.

The following developments in the e-commerce industry in Asia/Pacific in coming years are expected:

- Internet penetration rates of less developed countries are likely to rapidly increase: Countries with low internet penetration rates, especially China and India have seen significantly higher

online population growth during 2000-07 (Chart 11). Along with the increase in domestic infrastructure spending in the coming years, internet penetration rates in less developed countries are poised to increase at an accelerating pace and catch up with more developed countries in the region.

Chart 11: Countries with Low Internet Penetration Saw Stronger Internet Growth



Source: Internet World Stats website (<http://www.internetworldstats.com/stats.htm>).

Chart 12: China to Lead the Region in Market Size While India Will Rise Rapidly



Source: Calculated by Centennial Group using MasterCard's Survey Findings conducted by IPSOS.

Table 8. Online Shopping Market Revenue Turnover in Asia/Pacific

Country	Online Shopping Market Revenue Turnover (USD Billion)	
	2007	2010
Australia	27.2	37.3
China	297.8	1415.7
Hong Kong	5.5	10.0
India	70.8	734.3
Japan	168.9	185.3
Korea	82.0	114.7
Singapore	4.5	6.6
Thailand	5.9	20.8

Source: Calculated by Centennial Group using MasterCard's Survey Findings conducted by IPSOS.
 Note: The projection is based on the assumption that the ratio of online purchases to income for the respective country to hold constant during 2007-2010.

• The rising population of upper-middle-income urban elites will probably boost the online shopping markets in China and India significantly: Domestic consumption spending in China and India is poised to pick up strongly, underpinned by a rapid pace of urbanization and robust economic expansion in these two countries. An increase in income level and a rapidly growing population of upper-middle-income urban elites will contribute positively to the online shopping penetration rate.

By 2010, China's online shopping population is projected to increase to 480.4 million and contribute 58.6% of the total online shopping population in the region (Chart 12). Meanwhile, India's online shopping population is poised to increase rapidly and overtake Japan and Korea in terms of share of the online shopping population in the region.

In addition, China also offers the largest market in Asia/Pacific in terms of online shopping revenue turnover. As of 2007, revenue turnover in China's online shopping market was estimated at a significant \$297.8 billion which contributed to 44.9% of total online shopping revenue turnover in the region (Table 8). Meanwhile, India will rise strongly to emerge as the

Chart 13. Online Shopping Market Revenue Shares in Asia/Pacific



Source: Calculated by Centennial Group using MasterCard's Survey Findings conducted by IPSOS.

second largest online shopping market in the region in terms of revenue turnover by 2010 (Chart 13), underpinned by accelerating internet growth, rapid pace of urbanization and rising spending power of urban elites in the country.

Usage of Credit Cards in Online Shopping

There are several conclusions that can be drawn about credit card usage in the context of online shopping in the Asia/Pacific region. First, the credit card is the dominant and most preferred form of online payment method in most of Asia/Pacific except in China and Thailand.

Credit card penetration rate for online shopping is estimated using the proportion of online shoppers who deem credit cards as their most preferred mode of payment for online purchases. According to the survey findings, credit cards are by far the most preferred form of payment method for online purchases in the Asia/Pacific (Chart 14).

- About 53% of Asia/Pacific shoppers prefer using credit cards— almost double the 27%

who prefer using debit cards or direct debit from bank accounts.

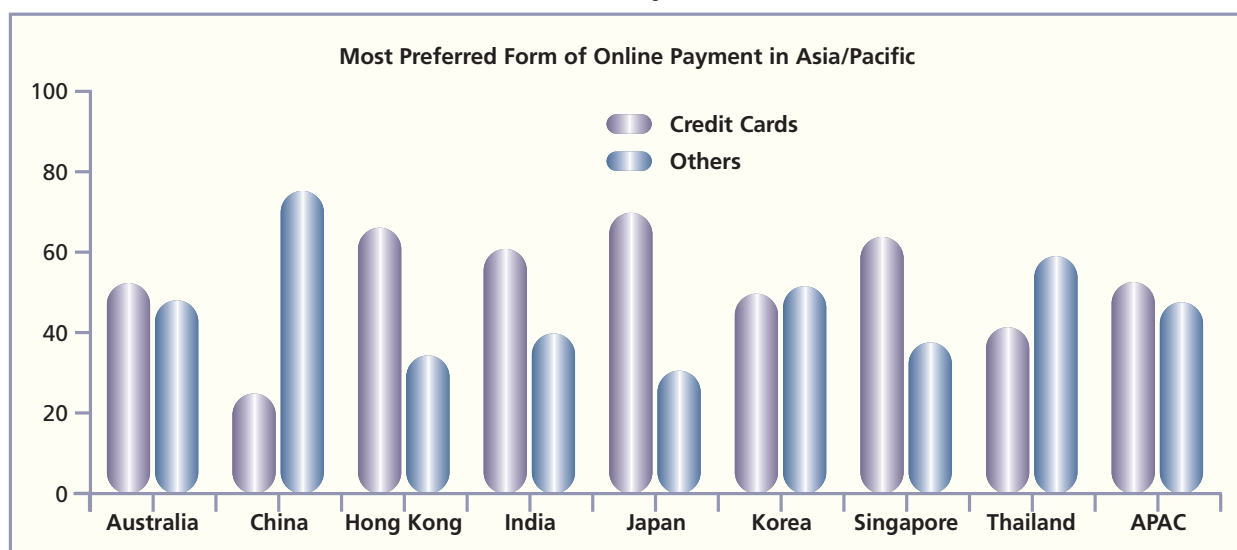
- Direct debit from electronic transfers (9%), PayPal (3%), check card (3%) and cash (2%) are the other payment options that online shoppers use.

- China and Thailand are the only countries where direct debit is more popular, with only 25% of Chinese and 41% of Thai online shoppers preferring credit cards as a payment method.

- It is also interesting to note that convenience stands in marked contrast as a critical factor in determining the online population's choice of preferred payment method in China and Thailand. In the Asia/Pacific region, credit card penetration rate in online shopping is reported to be slightly higher at 53% compared to 47% in offline shopping.

Note that the credit card penetration rate in China has some unique features among Asia/Pacific countries, with only Thailand in a similar situation, though to a lesser extent. There are several factors that could explain this phenomenon, not least of all the lack of an effi-

Chart 14. Credit Cards Most Preferred for Online Payment in Asia/Pacific



Source: MasterCard's Survey Findings conducted by IPSOS.
 Notes: 1. Others include all non-credit payment methods; namely debit cards, direct debit from bank accounts and electronic transfers, PayPal, Cheque card and cash.
 2. The proportion of online shoppers choosing credit card as their most preferred payment method as show in the chart is also defined as the credit card penetration rate in e-commerce in the respective countries.

cient, reliable and widespread credit system in China. Despite some recent attempts by authorities to expand and modernize credit markets, the Chinese economy remains cash-centric, which our results reflect. The lack of a national credit bureau, as well as restrictions on the ability of foreign companies to issue cards in China, continue to hinder the growth of the credit industry. A lack of merchant acceptance, especially outside major cities, and poor infrastructure mean that consumer use of this payment system remains sporadic at best. However, with plans by the Chinese government to establish a nationwide credit bureau, along with ongoing deregulation and increasing infrastructure in preparation for events such as the 2008 Beijing Olympics and the 2010 World Expo in Shanghai, it is reasonable to assume that the credit card will see increasing acceptance as a form of payment among Chinese consumers.

Second, concerns over the security and safety of online transactions are the main factors preventing greater card usage. Increasing internet penetration rates, and the attendant rise in more positive attitudes towards e-commerce security, is likely to mitigate this problem somewhat.

Table 9 shows in detail why online shoppers choose credit cards as their most preferred form of payment. While convenience tends to be the main reason, security remains weak as a reason for the use of credit card in e-commerce. Therefore, consumer concerns about the security and safety of their online payment transactions are one of the primary barriers to further adoption of the credit card as a payment medium for online shopping. As shown earlier, security concerns tend to be negatively correlated with internet penetration rates in the country. Indeed, countries with high internet penetration rates report higher credit card penetration rates in e-commerce compared to countries with low internet penetration rates (Chart 15). Countries with lower internet penetration rates tend to have a more wary attitude towards the online shopping process. It is logical to assume that as the internet penetration of a country increases, and the perception of its users towards the security of online shopping improves, their disposition towards card usage will likewise be more positive. India is reported as the exception in this case which is partly attributable to the high level of impulsive spending in the country— discussed later.

Table 9. Reasons for Using Credit Cards for Payment Online

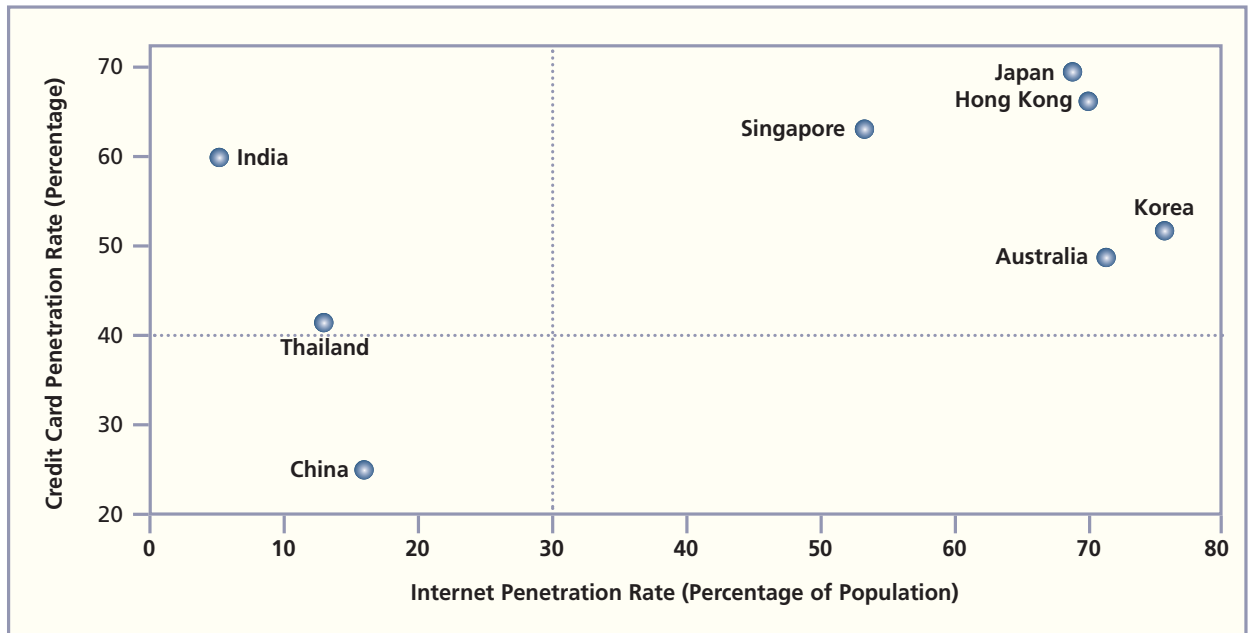
Country	Convenience (Percentage)	Ease of Use (Percentage)	Promotional Offers (Percentage)	Security (Percentage)
Australia	26	29	15	25
China	70	3	14	16
Hong Kong	41	19	16	14
India	29	21	8	23
Japan	30	11	37	6
Korea	42	21	15	7
Singapore	27	34	19	11
Thailand	69	26	8	22
Asia/Pacific	37	21	18	14

Source: MasterCard's Survey Findings conducted by IPSOS.

Third, higher income levels tend to lead to a higher credit card penetration rate in e-commerce in Asia/Pacific. A positive relationship between income level and credit card penetration rate in e-commerce is observed in Asia/Pacific (Chart 16). In other words, average

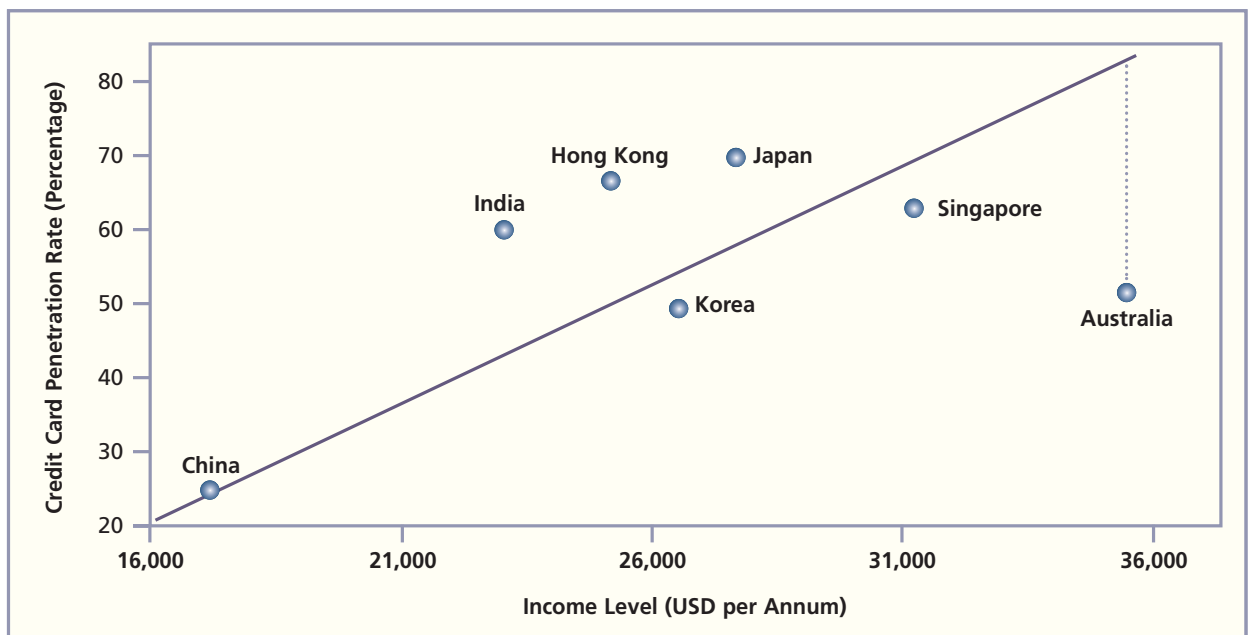
income seems to be a good indicator of the likelihood of the credit card being used as a payment method for online shopping, simply because higher incomes in and of themselves enable greater credit card usage.

Chart 15. High Internet Penetration High Credit Card Penetration Rates Go Together



Source: MasterCard's Survey Findings conducted by IPSOS and Internet World Stats website (<http://www.internetworldstats.com/stats.htm>).

Chart 16. High Incomes Coincide With High Credit Card Penetration Rates



Source: MasterCard's Survey Findings conducted by IPSOS and EIU Database.

On average, 74% of the online shoppers in Asia/Pacific feel that payment security can be improved and increase the confidence of users in online transactions. This proportion is especially high amongst shoppers in China and Thailand, with 84% reported in both countries respectively.

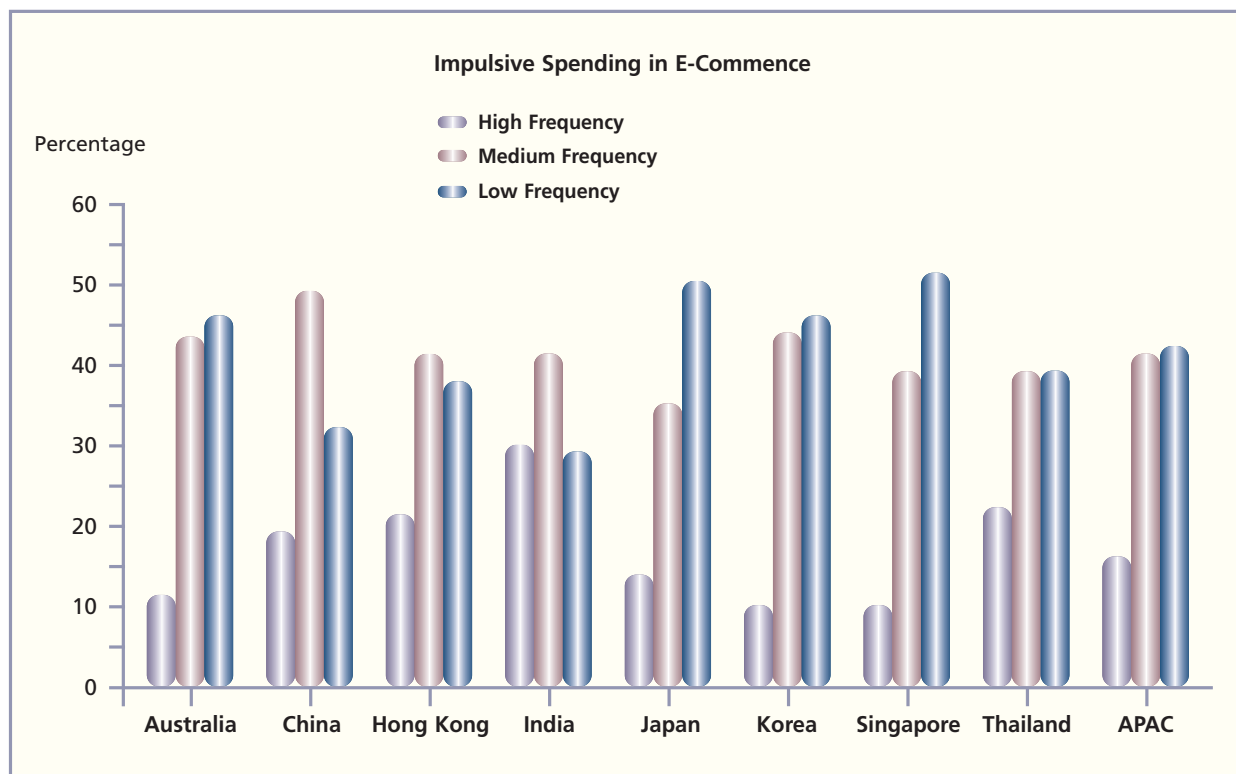
Opportunistic Spending in the Online Shopping Context

The level of opportunistic spending online varies widely among countries in the Asia/Pacific region. In countries which are somewhat more mature financially such as Singapore, South Korea and Australia, only about 10% of shoppers have made opportunistic purchases frequently. This proportion jumps drastically in less financially sophisticated India, where about 30% of shoppers do the same. Chart 17 illustrates the frequency of opportunistic purchases

among shoppers in the various Asia/Pacific countries. Despite the fact that the frequency of Chinese opportunistic buying remains low, with only 19% claiming to regularly make purchases opportunistically, compared to 21% for Hong Kong, 22% for Thailand and 30% for India, in sheer numbers it is rivaled only by the latter.

First, online shopping does not trigger a greater tendency for opportunistic spending in most of Asia/Pacific. For most of the region, the tendency to make opportunistic purchases online is either similar or lesser compared to offline shopping (Chart 18). This indicates that the online medium has little effect on the consumer's tendency to buy opportunistically. However, there is a significantly greater tendency to shop opportunistically online than offline in China, India and Thailand relative to other countries in the region. A higher tendency to spend opportunistically online will tend to boost credit card usage in online shopping in

Chart 17. Frequency of Impulsive Purchases in Asia/Pacific



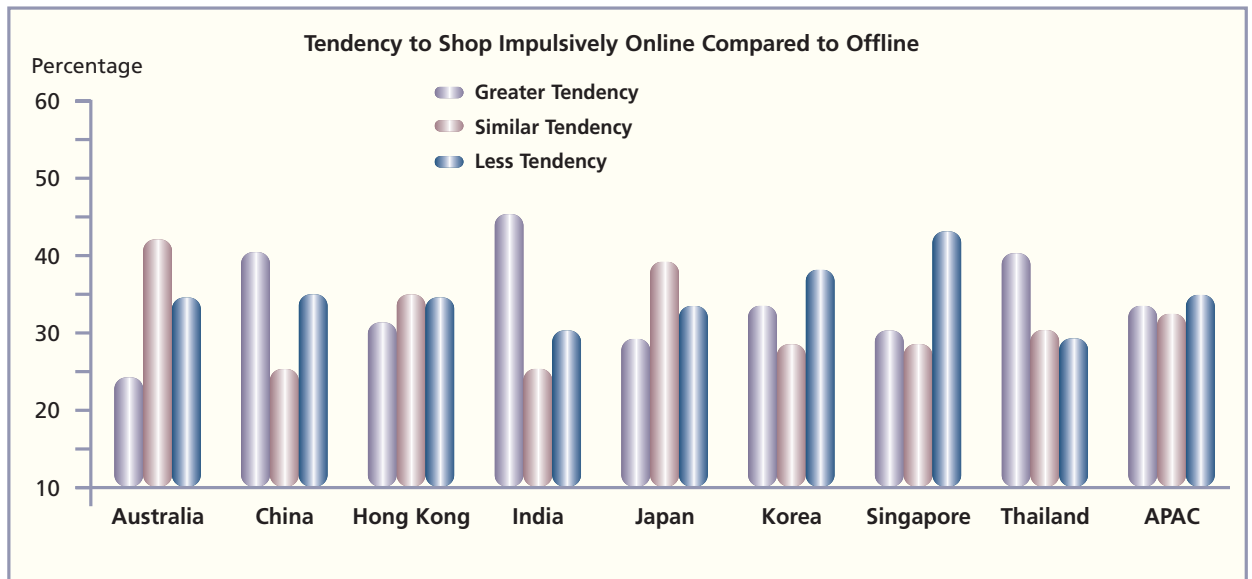
Source: MasterCard's Survey Findings conducted by IPSOS.
 Note: High frequency denotes most of the time or more; medium frequency denotes just a couple of times while low frequency denotes hardly ever or never. APAC refers to Asia/Pacific.

these countries as unplanned spending is often funded by credit cards.

Second, lower price compared to offline channels is the key factor prompting opportunistic spending in e-commerce in Asia/Pacific. Across the region, lower prices and discounts compared to offline channels play the key role in encouraging

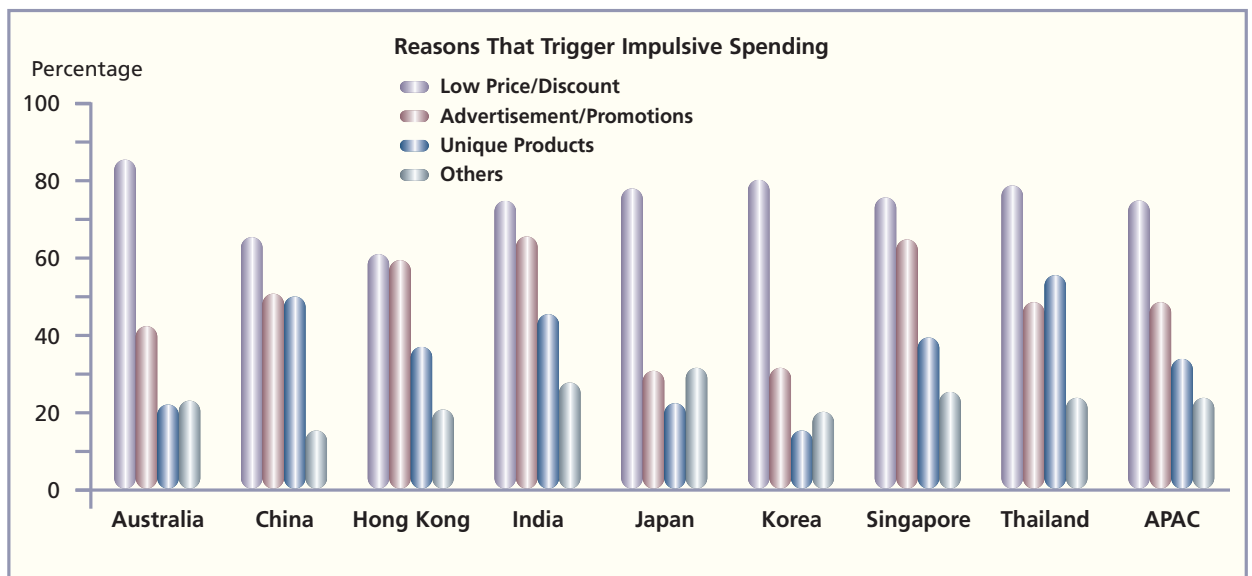
opportunistic spending online (Chart 19). The availability of unique products online is also another major factor that boosts opportunistic spending in online shopping in the region. However, advertisement and promotions do not seem to contribute significantly in increasing opportunistic spending in Asia/Pacific.

Chart 18. Tendency to Shop Impulsively While Browsing Online



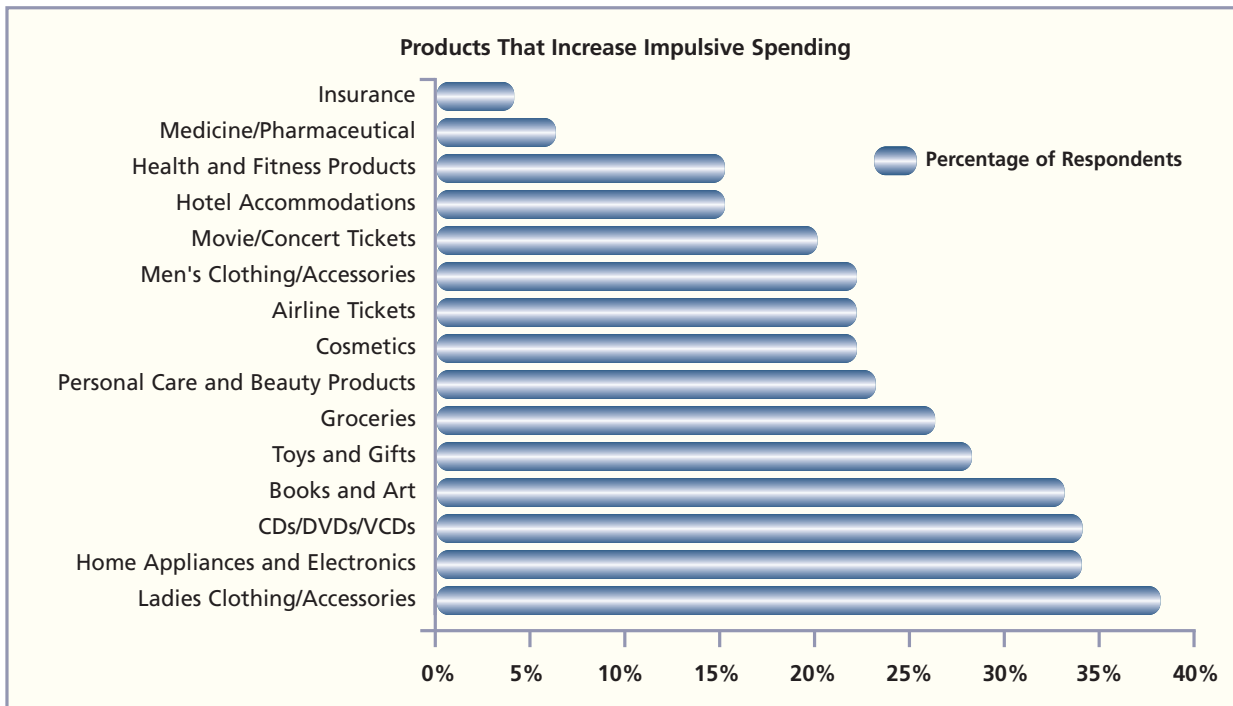
Source: MasterCard's Survey Findings conducted by IPSOS

Chart 19. Lower Price/Discount Emerges as Key Trigger for Opportunistic Spending



Source: MasterCard's Survey Findings conducted by IPSOS

Chart 20. Products That Increase Impulsive Spending in Asia/Pacific Online Shoppers



Source: MasterCard's Survey Findings conducted by IPSOS

Third, the products that propel opportunistic spending in online shopping are mainly small-ticket items. Chart 20 shows that the products that trigger opportunistic spending listed by the surveyed respondents are mainly small to medium ticket items and services such as movies,

airline tickets and hotel accommodations. However, note that big-ticket items like electronic appliances are listed by the respondents as the second most common product which they tend to purchase on impulse.

Case Study: India

Although only 47% of Indian internet users shop online, they tend to be avid shoppers. The sheer size of the Indian population means that despite an extremely low internet penetration rate of 5.3% and a relatively small portion of internet users shopping online, the Indian online shopping community still numbers around 28 million, on par with South Korea, behind only China and Japan, and far ahead of

affluent nations such as Australia, Hong Kong and Singapore.

The Indian online shopping market is worth about \$71 billion. Indian online shoppers spend an average of \$2,517 a year on online shopping, the fourth-highest amount in the Asia/Pacific region, ahead of traditional big spenders such as Japan. In general, Indian online shoppers spend about 11.0% of their personal income in online shops; a significant number as it is far higher than the regional average of 9.8%.

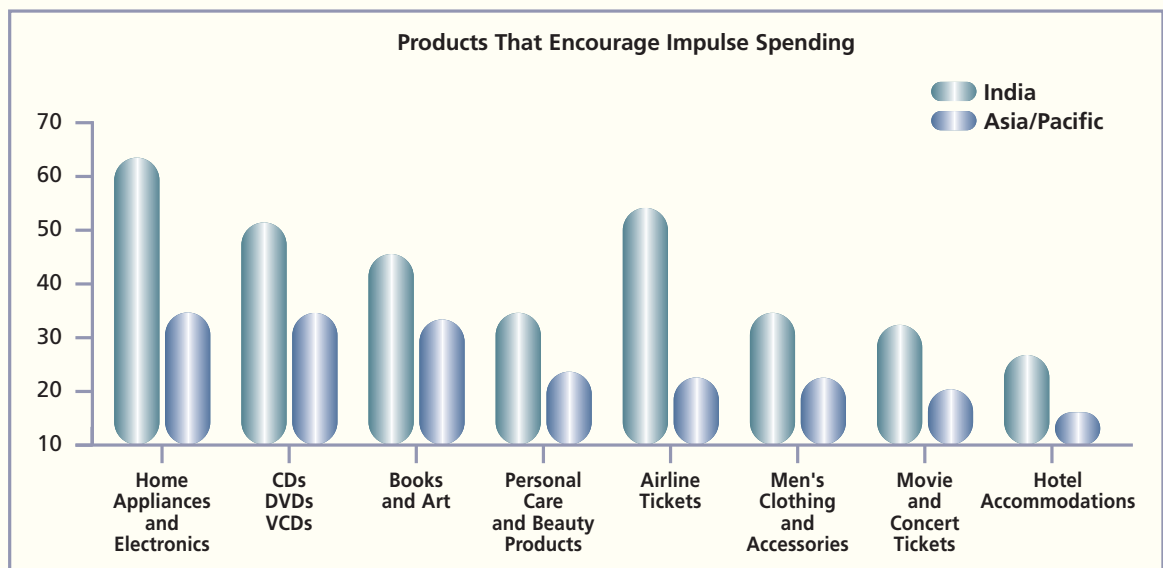
Online shoppers in India have a higher tendency to indulge in opportunistic shopping online than through traditional offline means. About 12.7 million Indian online shoppers feel that they are more likely to make an impulse purchase when browsing online than when browsing offline. This equates to 45% of all online shoppers in India, a figure that is much higher than the regional average of 33%. It is also significantly more than the 30% who feel that they are less likely to shop opportunistically online than offline.

Online shoppers in India also make opportunistic purchases more frequently. Around 30% of online shoppers, or 8.5 million people, make opportunistic purchases most of the time. This is the third-highest number of people in the region, and is only slightly less than the 10 million Japanese online shoppers who frequently buy opportunistically. 30% of the online shopping population is also a very high figure when compared to the regional average of 17% of online shoppers who frequently make online purchases. Indeed, Indian online shoppers have a significantly higher tendency to opportunistic spend online across most

products compared to the rest of Asia/Pacific (Chart 21). Interestingly, online shoppers in India are most likely to make opportunistic purchases of high value items. Home appliances, electronic products (63%) and airline tickets (54%) are the most significant triggers for opportunistic shopping. Therefore, the values of the products that prompt opportunistic buying in Indian shoppers are much higher compared to shoppers in Asia/Pacific.

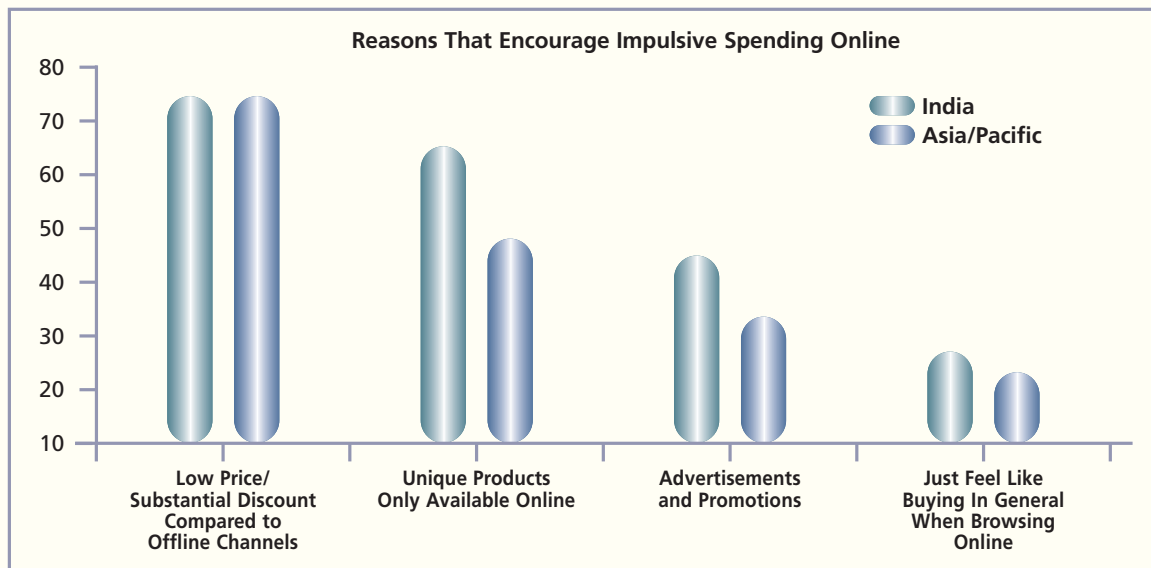
Along the online shopping trend in the Asia/Pacific, Indian online shoppers are most likely to make an opportunistic purchase when they encounter low prices or substantial discounts on prices compared to prices in offline channels. 74% of shoppers who have made opportunistic purchase list this reason as an impetus for opportunistic shopping, the same proportion as in Asia/Pacific. Indian online shoppers are also more attracted to unique products only available online than shoppers in the rest of Asia/Pacific (Chart 21). In other words, Indian online shoppers are more easily prompted to make online purchases than their Asia/Pacific counterparts (Chart 22).

Chart 21. Indian Shoppers' Higher Opportunistic Spending Across Most Products



Source: MasterCard's Survey Findings conducted by IPSOS

Chart 22. Indian Shoppers are More Easily Triggered to Opportunistically Spend Online



Source: MasterCard's Survey Findings conducted by IPSOS

Conclusion

Online shopping in the Asia/Pacific region is set to expand rapidly in coming years, underpinned by rapid economic growth, with China and India to lead the region. In addition, internet penetration rates in less-developed countries like China, India and Thailand are poised to improve significantly as internet usage grows and associated infrastructure is developed in the region: this will also boost online shopping rates.

Credit cards are the most preferred method of payment in the region for online shopping. Credit card penetration rate in online shopping will increase along with the increase in online shopping penetration in the region. Security remains the main factor hindering the growth of both credit card and online shopping penetration rates in the Asia/Pacific. But as appropriate infrastructure is put in place and customers become more comfortable with online shopping in the region, this concern will be mitigated in coming years.

1. Opportunistic spending is defined as making an unplanned purchase or a purchase at higher value than previously planned.
2. Figures refer to US dollars unless otherwise stated.
3. From "State of Retailing Online 2007" report from the National Retail Federation (NRF) and Shop.org, quoted in CNNMoney.com 14 May 2007
4. See US E-commerce Forecast: 2008 to 2012 by Forrester Research January 2008 quoted in e-marketer,

7 February 2008.

5. Source: E-marketer 16 January 2008, quoting Jeffrey Grau, eMarketer Senior Analyst.
6. The survey was conducted by IPSOS Asia through online panels.
7. If Online purchases = OLP, income = INC, personal consumer expenditure = PCE and GDP is taken as a proxy for income = INC, then (OLP/INC) divided by $PCE/INC = OLP/PCE =$ intensity of online shopping spending.

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