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eCommerce Consumer Behavior in Southeast Asia

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Declaration of Authenticity

I hereby declare that the Master´s Thesis presented herein is my own work, or fully and specifically acknowledged wherever adapted from other sources. This work has not been published or submitted elsewhere for the requirement of a degree programme.

Prague, May 10, 2018   Signature

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eCommerce Consumer Behavior in Southeast Asia

Abstract:

This master's thesis aims to investigate e-commerce consumer behavior in Southeast Asia, with a focus on identifying online purchase behavior, assessing how different factors could influence online consumer's perception about perceived risk and trust and proposing possible causes and reasons behind it.

To fulfill these goals, the research is constituted of data mining, a quantitative survey and content analysis. The dataset contains half a million transaction records from 385 e-merchants in the ASEAN-6. Secondly, perceived risk and trust towards online shopping in Malaysia, Singapore, and the Philippines were examined by a survey method, with a sample of 124 post-adoption respondents. Lastly, Content analysis on the top 50 online stores in the ASEAN-6 (300 online stores in total) was conducted to study parity and differentiation in terms of service and function offerings.

The analysis reveals that conversion rate, average order value, coupon usage and order distribution differs in countries, devices and time. Besides, a positive correlation between purchase intention and attitudes towards online shopping is detected. In contrast, there is a negative correlation between purchase intention and perceived risk. Lastly, recommendations are given to e-commerce companies in the region.

ACKNOWLEDGEMENT

List of abbreviations

ASEAN – Association of Southeast Asian Nations

ASEAN-6 – ASEAN's top six economies, including Indonesia, Malaysia, Philippines, Thailand, Singapore and Vietnam

SEA – Southeast Asia

APAC – Asia-Pacific

GDP – Gross Domestic Product

CAGR – Compound Annual Growth Rate

TAM – Technology Acceptance Model

TRA – Theory of Reasoned Action

CPS – Cost Per Sale

SEMs – Small and Medium Enterprises

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Introduction

One of the most popular Internet applications nowadays is online shopping. It has evolved greatly in the past decades, from selling durable, non-food items such as books, CDs to almost any kind of products. The development of e-commerce is volatile in the global arena; consumers in most developed countries have embraced the commercialization of the internet and as a result, online retail is becoming more and more vibrant. However, the development of e-commerce in Southeast Asia still lags behind the global average. Online retailing accounted for less than 1% of total retail sales in the six largest Southeast Asian countries – Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam, whereas in Europe, China and the US the rates are between 5.8% and 7.8%, suggesting a strong potential for growth in the ASEAN market (Olsen, Gergele, Chua, & Bartolucci, 2015). Moreover, there are significant whitespaces in online retail for both local and international players to cover. In the coming years, as purchasing power increases, Internet penetration spreads and online offerings improve, the online market in ASEAN markets could grow as much as 25% annually (Olsen et al., 2015). The digital economy in Southeast Asia is booming; but to realize its full potential, several challenges in funding, logistics and payment methods still need to be conquered.

There is an extensive body of research emanating from studies in developed countries related to factors that influence or inhibit consumers' online purchase behavior (Bianchi & Andrews, 2012). Meanwhile, the academic attention in the field of e-commerce development is rather limited in Southeast Asia. Even though the online retail market in the ASEAN-6 is worth an estimated $7 billion with 536.5 million inhabitants and 87.2 million digital buyers, this area of study has been neglected (Olsen et al., 2015). Most of the available research about e-commerce in Southeast Asia was published by consulting firms around the year 2015. These reports are mainly focused on macro-level phenomena and often over-aggregated. To fill such a gap in literature, this study mainly focuses on post-adoption consumers' usage of online shopping as well as consumers' perceptions of risk and trust in Southeast Asia.

The main objectives of this master's thesis are to identify purchasing behavior concerning online shopping in Southeast Asia, to assess how different factors could influence online consumer's perception about perceived risk and trust and to investigate the causes and reasons behind it.

To achieve this, the author firstly analyzed a dataset containing half a million transaction records from 385 e-merchants in the ASEAN-6 to identify insightful patterns of consumer's purchasing behavior. Secondly, the author examined perceived risk and trust towards online shopping in Malaysia, Singapore and the Philippines, using a survey method with a sample of 124 post-adoption respondents. Lastly, the author conducted a content analysis on the top 50 online stores in the ASEAN-6 (300 online stores in total) to study parity and differentiation in terms of offered services and functions.

Chapter 1 provides necessary background on eCommerce in Southeast Asia, especially the most recent progressions and trends in the ASEAN-6. We can conclude that around two-thirds of digital consumers who searched for a product online made the actual purchase in the ASEAN-6. Studies on continuance behavior are becoming increasingly important in this era of heavy interactive communication device usage; particularly for companies seeking to achieve profitability and sustainable competitive advantage through the online environment (Bianchi & Andrews, 2012). It is critical to understand different factors that influence continuance behavior in e-commerce. Thus, the primary focus of the empirical study is post-adoption consumer behavior.

Chapter 2 starts by illustrating the past and current research trends of e-commerce consumer behavior in the academic field. It then highlights the main differences between offline and online shopping behavior. Following that, the author introduces the TRA and TAM models, as well as their application in path-to-purchase and e-commerce trust. Lastly, the author summarizes relevant research about eCommerce consumer behavior in Southeast Asia and concludes that there is a lack of academic attention at the regional level.

Chapter 3 acts as the bridge between the theoretical part and research findings. It explains the methodology used in the research, including structure of the research, contents of the dataset and data modeling method, survey components and sample composition, as well as aspects of content analysis.

It has been found that differing cultural dimensions may influence consumers' perception of risk and trust, that in turn will impact their purchasing behavior on the internet (Bianchi & Andrews, 2012). Chapter 4 reports key findings of the research, both from the regional and from the country-specific level. Based on these findings, Chapter 5 gives a set of recommendations to e-commerce players who plan to enter the market.

1 E-commerce in Southeast Asia

The wave of digitalization has arrived in Southeast Asia. According to Bain & Company (Hoppe & Lamy, 2017), the base of online consumers grew by 50% in 2017, reaching a total of 200 million individuals across the ASEAN's top six economies (ASEAN-6, including Indonesia, Malaysia, Philippines, Thailand, Singapore and Vietnam). It is a highly fragmented and diverse market regarding geographic, infrastructure, regulations, religions and languages. For example, the population of Indonesia spread amongst 17,500 islands covering a distance of over 5,000 kilometers while Singapore is only 719 square kilometers. Thus, the cost of shipment and the time of delivery could vary a lot across the region. Filled with opportunities and challenges, the competitive landscape in the region is changing rapidly. With Amazon's grand entry to Singapore and Alibaba's US$ 1 billion stock purchase of Lazada in 2017, it is becoming a battlefield among western internet giants (Amazon, Google, Facebook), Chinese industry leaders BAT (Baidu, Alibaba, Tencent), and local players.

1.1 Digital Infrastructure in Southeast Asia

Based on the World Economic Forum's Networked Readiness Index, except in Singapore, Malaysia, and Brunei, most of ASEAN countries' digital infrastructure is rather weak (World Economic Forum, 2016). However, e-commerce is built on the connectivity between buyer and seller via the internet. Thus, it has a fundamental effect on the industry. From Table 1, we can observe that the internet accessibility varies a lot within the ASEAN-6, where Singapore and Malaysia are leading the internet penetration rate. Nevertheless, even with half of the population in Indonesia having access to the internet, it is the biggest slice of the pie, contributing 42% of the online population in the ASEAN-6.

Table 1 ASEAN-6 Digital Population in 2017

Country	Indonesia	Malaysia	Philippines	Thailand	Singapore	Vietnam
Population(Million)	262.00	30.96	103.00	68.22	5.74	94.93
Internet Users(Million)	132.70	22.00	60.00	46.00	4.71	50.05
Penetration	51%	71%	58%	67%	82%	53%

Source: We Are Social, Hootsuite, Jan 2017

Thanks to the rapid development of technological infrastructures, especially mobilization, the internet is getting more accessible in the region. According to Table 2, from 2016 to 2017 there is a general inclining trend of the online population across the region; the mobile user is also

increasing except in Vietnam and Malaysia. Such growth is expected to continue on a similar trend for some more years to come (ASEAN Up, 2018). Meanwhile, urbanization in ASEAN will assure this growth trend; today just over one-third of ASEAN's population lives in cities; more than 90 million people are expected to move to cities by 2030, bringing the urban share to almost 45 percent of the population and 76 percent of GDP (McKinsey&Company, 2014). Another noticeable fact is the dominance of using a smartphone, compared with the use of a laptop or desktop. Most countries across the region had low penetration of landline phones and the fixed-line broadband Internet, for instance—but now they are bypassing these stages altogether to leap directly onto the mobile Internet (McKinsey&Company, 2014). This is probably due to the introduction of more affordable smartphones and better coverage of mobile networks.

Table 2 Online Population Growth from 2016 to 2017 and Device Preference in 2017

Country	Internet User Growth 2016-2017	Mobile Subscriptions Growth 2016-2017	Smartphone/ PC Usage
Indonesia	51%	14%	47%/21%
Malaysia	7%	-1%	81%/37%
Philippines	27%	9%	61%/39%
Singapore	1%	3%	91%/70%
Thailand	21%	10%	70%/26%
Vietnam	6%	-13%	72%/44%

Source: We Are Social, Hootsuite, Jan 2017

Besides connectivity, the speed of internet also matters in the ecosystem. From a survey conducted by the University of Southern California in APAC region, 75% of respondents indicated that internet reliability was a problem for their business (University of Southern California, 2015). There are several possible influences of internet speed on e-commerce: firstly, low-speed limits the format of content when communicating with online consumers. As a result, many websites allow its users to switch to a quicker version by compromising the quality of contents; secondly, it will affect e-commerce business model. For instance, Gojek, an Indonesian O2O (online to offline) platform, provides an additional SMS order service for food delivery due to slow internet speed in some regions. As suggested in Table 3, there is a significant gap of internet speed between landline network and mobile network; in the Philippines, the speed of the mobile network is almost two times more than the fixed network.

Moreover, the difference between the countries is also tremendous. Singapore has the best internet connection in general, whereas Vietnam has the poorest one.

Table 3 Internet Speed in ASEAN-6

Country	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Landline Network Speed (kbps)	6398	7471	4196	18159	11677	6270
Mobile Network Speed (kbps)	10899	3516	13881	8521	6084	3419

Source: We Are Social, Hootsuite, Jan 2017

Social media users in Southeast Asia also grew by 31 percent over the past year, with 72 million people using social platforms for the first time (We Are Social & Hootsuite, 2017). In fact, the overall active social media user is Southeast Asia is globally competitive. From Figure 1, we can conclude all the ASEAN-6 countries have higher social media penetration rate than global average, while the average social media penetration in Southeast Asia is 10% higher than the global average. Leading by Singapore and Malaysia, almost three-quarters of the population in the region use social media on a monthly basis. Apart from growing social media user, they tend to spend much time on social media as well. Based on the research by We Are Social and Hootsuite, Filipino averagely spent four hours and seventeen minutes daily on social media in 2017, which almost doubled the time Singaporean spent (We Are Social & Hootsuite, 2017).

Figure 1 Social Media Penetration in the ASEAN-6
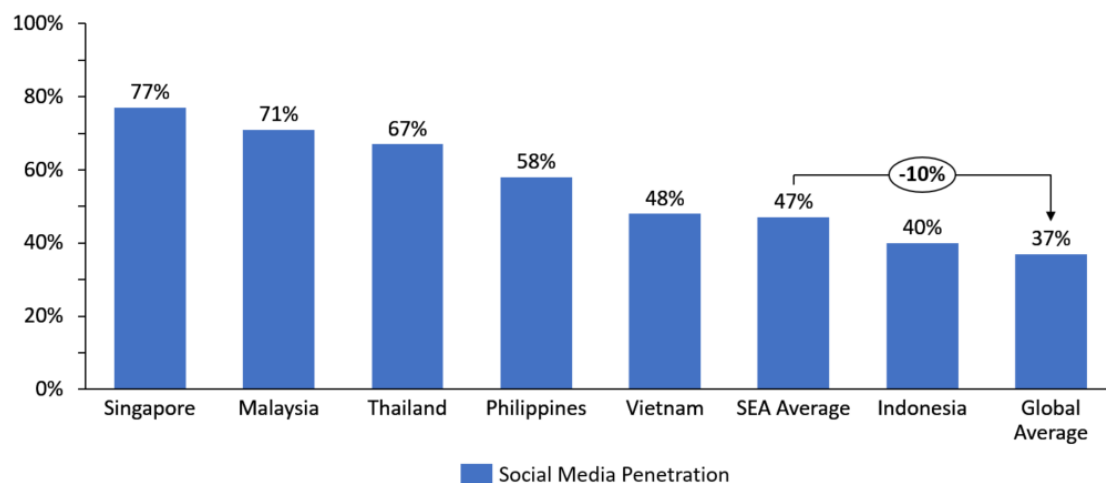
Source: We Are Social, Hootsuite, Jan 2017

At a platform level, Facebook has the highest number of monthly active users (MAUs) across all 11 countries in the region, but people use a wide range of platforms from country to country (We Are Social & Hootsuite, 2017). Besides, mobile messaging applications are trendy, and user's preference differs a lot across the region. According to the same study by We Are Social and Hootsuite, LINE is extremely popular in Thailand, while Facebook Messenger successfully surpassed Zalo in Vietnam and Viber in the Philippines and became the most popular messaging application in these two countries. In Singapore, Malaysia, and Indonesia, WhatsApp leads the ranking, while WeChat and LINE have a substantial user base there.

Figure 2 Payment Options Offered by Top 50 E-merchants in the ASEAN-6
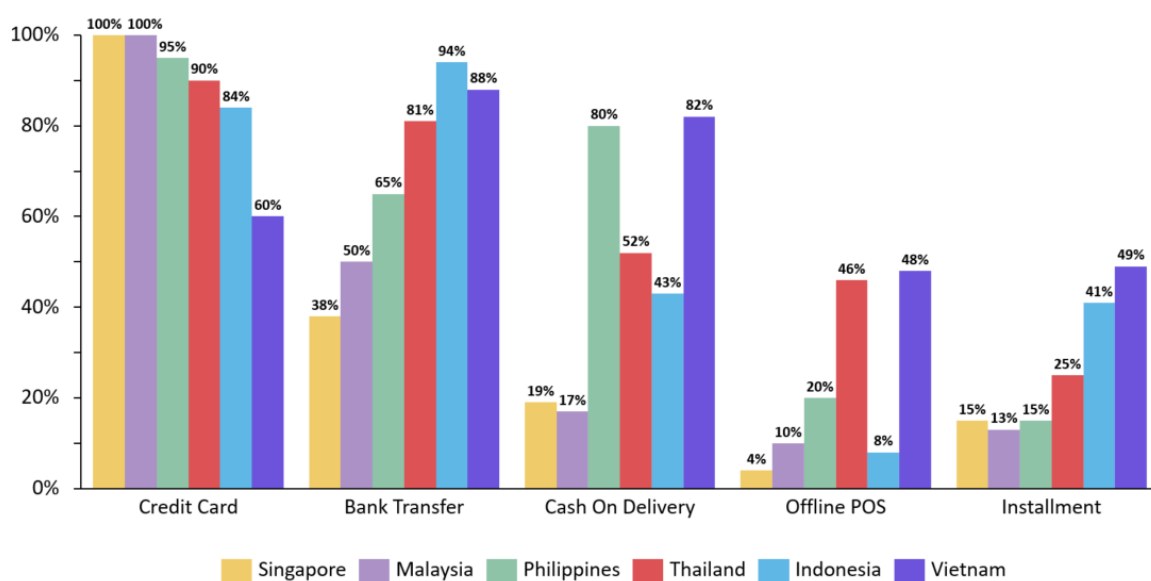
Source: Author & iPrice, July 2017

Payment is still one of the most significant barriers to boost e-commerce in ASEAN, even though there is a booming of Fintech start-ups. Unlike the growth of online population, the spread of e-payment is rather slow. Promoting e-payment is crucial for the growth of e-commerce market since it is safer and more cost-efficient, as compared to offline payment. Moreover, economies with developed e-commerce have a high level of electronic payments penetration, primarily attributed to robust consumer protection mechanisms and a more conducive payment regulations environment (University of Southern California, 2015). Across the region, e-commerce player is focusing on solving local payment challenges only with limited success. PromotPay, a mobile app facilitated by the Thai government for cashless society, has to shut down when ATMs become a victim of cybercriminals. Meanwhile, international players such as PayPal and Alipay are not successful because of a large number of the unbanked population: in the Philippines, Vietnam, and Indonesia, between 70 to 80 percent of citizens are unbanked (Olsen et al., 2015). So far no single e-payment option has become dominant. Low e-payment usage forces e-commerce players to be flexible and innovative. For example, Uber is always proud of their cashless payment system and the

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convenience it created. However, it is the opposite case in Southeast Asia. When its strongest competitor Grab introduced cash payment option to the driver, Uber followed as well.

For e-merchants to adopt e-payment, the implementation cost is one of the leading obstacles. Besides, low-credit card penetration also slows down the adoption process; credit card ownership covers less than 10% of the population in the region (Wu, Hui, Sim, & Tan, 2015). To make it even more challenging, those who possess a credit card prefer not using it for online shopping due to fear of fraud. According to a 2014 survey conducted by PayPal, 58 percent of Malaysians say they are concerned about their financial information being stolen by cybercriminals (Olsen et al., 2015). From Figure 2, we can conclude the most popular payment offering in emerging economies is still offline, especially Cash On Delivery and Bank Transfer. However, Cash-on-delivery is not flawless: the partnership with logistic companies can be extremely complicated with extra cost; it is only possible for the domestic customer; potential cash-counting error and less efficiency do exist.

Figure 3 Delivery Options Offered by Top 50 E-merchants in the ASEAN-6
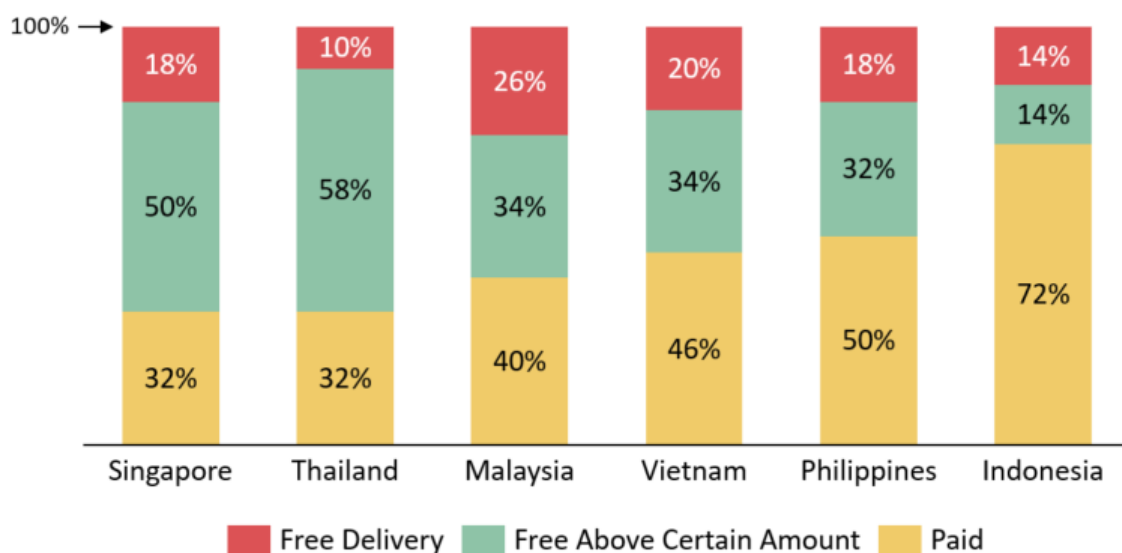
Source: Author & iPrice, July 2017

Logistic and trade is an ongoing problem still waiting to be addressed in the region. Except for Singapore, postal services are often unreliable, and local logistics firms are still unprepared to handle high volumes of small packages (Wu et al., 2015). From an e-merchants' point of view, the high logistic cost will reduce the margin significantly, also inhibit the growth of e-commerce market. Thus, as can be seen in Figure 3, most of the merchants in Indonesia do not provide free deliveries; even if they do, a minimum amount of spending is required. The Philippines also experience challenges in logistics due to a large number of islands. To justify the difficulty in shipping, merchants charge for delivery much more often than in other countries. From the consumer's point of view, even in countries like Singapore, almost half of its inhabitants say delivery is the main reason why they do not buy online, according to a study by the tech blog SGE (Olsen et al., 2015). The causes include poor transport infrastructure and

inconsistent customs. According to a qualitative assessment of the ASEAN-6 transport infrastructure by real estate firm Jones Lang LaSalle, only Malaysia, Thailand and Singapore have a reasonably good rating for road and rail network, port quality and air transport (Olsen et al., 2015). Underdeveloped transport infrastructure, especially road network, leads to inefficient last mile delivery. As we learned from the last paragraph, cash-on-delivery is the most popular payment method in the region, which relies heavily on last mile delivery. Besides, custom rules differ widely within the region. For a $100 dress purchase from an ASEAN country, a digital buyer would have to pay an additional one-third of the dress price in duties and taxes in Thailand, Indonesia, Vietnam, and the Philippines (Olsen et al., 2015). Even if the buyer decided to return the merchandise, reclaiming tax is impossible or extremely pricey. Some categories of product are strictly controlled and require special permits.

1.2 Market Situation and Competitive Landscape

The percentage of online sales in the composition of total retail sales is relatively low in the SEA. According to research firm Euromonitor, online retailing accounted for less than 1% of total retail sales in the six largest Southeast Asia countries – Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam (Wu et al., 2015), whereas e-commerce contributed 14% of China's total retail sales in 2015. Nevertheless, online retail penetration maybe small but the potential of e-commerce market is enormous. The newest Google-Temasek report in 2017 suggested the internet economy is growing at a compound annual growth rate (CAGR) of 27%, soaring 7% up than the previous projection in 2016 (Cheok, 2017). Based on the same research, the internet economy is expected to exceed US$200 billion by 2025. Moreover, Gross Merchandise Value of first-hand goods surpassing $10B, up from $5.5B in 2015, with a stunning 41% CAGR over the past couple of years (Cheok, 2017). Apart from Google-Temasek's research, We Are Social and Hootsuite released "Digital in 2018 in Southeast Asia" report, suggesting a solid growth in all sectors and categories across the region, where Fashion & Beauty, Food & Personal Care, and Travel & Accommodation ranked top on the list of annual growth rate (We Are Social & Hootsuite, 2018). Besides, some categories have already established a core foundation: fully 24% of all clothing and footwear and 18% of all travel is now purchased online (Lamy, Cannarsi, & Hoppe, 2016).

Figure 4 shows the final output of a survey by Bain & Company in 2015, which concluded that more than one-third of the region's population (150 million) have at least tried searching information about products or contacting with seller online. Within one-third of the population, two thirds (100 million) of them have made a digital purchase; one third (50 million) of them are based in Indonesia. Furthermore, the e-consumer in Southeast Asia is more likely influenced by digital contents. For example, penetration is a mere 1.2% in the Philippines, but 34% of those who have made a purchase online in that country reported they were influenced by online content prior to making their purchase (Lamy et al., 2016).

Figure 4 Digital Consumers' Composition in the ASEAN-6
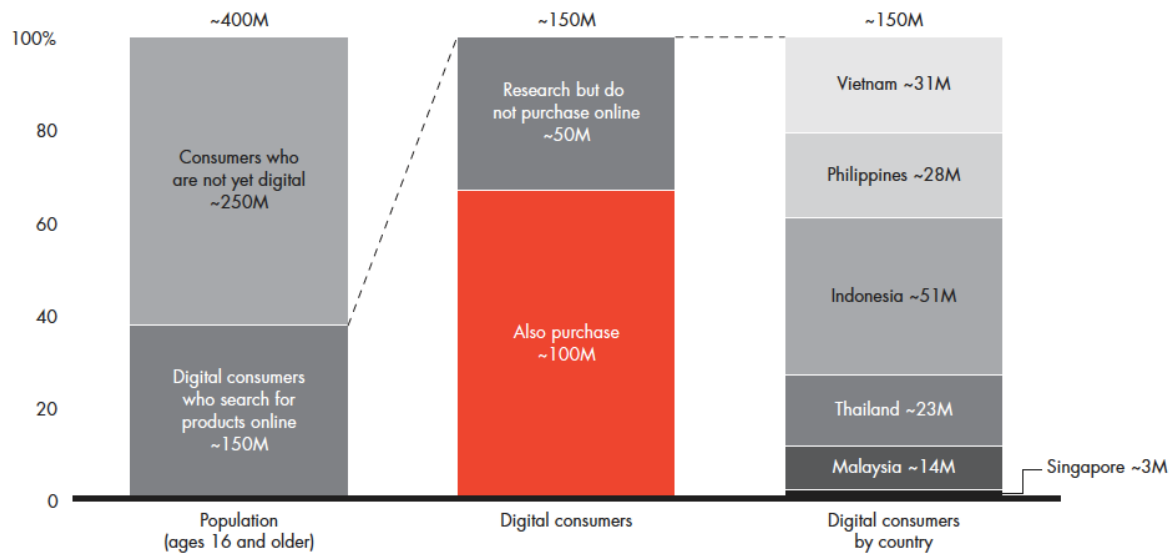
Source: Bain Southeast Asia Digital Consumer Survey, November 2015 (n=6,278); Bain analysis; Euromonitor

Besides challenges described in Chapter 1.1, a lack of homegrown technology talent and high occurrence of fraud are bottlenecks potentially jeopardizing the growth of the e-commerce market. From Google and Temasek's 2017 report. "There remain areas where continual focus and investments are needed for the region to realize its full potential. In particular, the talent challenge remains largely unsolved (Cheok, 2017)." Most successful start-ups in the region have to acquire human resources from China and the U.S; there is a strong demand for senior-level talent, especially within the C-Suite. Fraud incidents would cause low customer confidence in transactions. With 58% of citizens in Southeast Asia have expressed concerns over financial information being shared online (global average is 49%), Indonesia, Philippines and Malaysia see high levels of fraud and cyber attacks (Google & TEMASEK, 2015). Poor government regulation also leads to lack of consumer trust. At a regional level, there is no official entity to fight with cybercriminals and settle international disputes. The good news is, e-commerce in Southeast Asia is still behind well-developed markets like U.S and China for around five years. Thus, many strategies worked in other markets before can be used here. Under the same framework of strategies, innovation and adaptation are needed for different archetypes of the user and their unique taste.

Compared with other markets, e-shoppers in Southeast Asia usually buy products from different websites. As evidence of the market fragmentation, consider that no retail platform is the preferred platform for more than 20% of consumers in any country. In Singapore, no fewer than 12 platforms serve 90% of the market (Lamy et al., 2016). However, this situation has changed swiftly. In 2017, one player in the region has successfully spread its fame, which is Lazada. Established by Rocket Internet in 2012, Lazada has dominated monthly web traffic by

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millions in almost every country in the region (aCommerce, 2017). As a symbol to step into the Southeast Asian e-commerce market, Amazon entered Singapore earlier in 2017. Simultaneously, Lazada has received US$1 billion from Alibaba, raising its share from 51% to 83%. Since then, Alibaba started to integrate Lazada into its ecosystem. For example, Lazada's helloPay now is merged as a part of Alipay. Alibaba also invested into Tokopedia, a leading local marketplace only operating in Indonesia. It is uncommon to observe giants competing intensively in such a niche market. With such tremendous competition, international giants battling head to head and local players serving as intermediaries of these foreign giants.

Furthermore, fragmented market pushes online consumers to search information for the products instead of going to official company websites. Also, social commerce is highly influential in Southeast Asia, which means consumers prefer to shop via social media. Among digital consumers, more than 80% use social media options to research products or otherwise connect with sellers; social sales comprise up to 30% of the volume of all transactions (Lamy et al., 2016). It is common for a consumer to decide to buy products while browsing Instagram or Facebook. The trust between seller and consumer is stronger since they have already known each personally. Even in cases where seller and buyer do not know each other in prior, the personal touch and one-to-one communication that social commerce brings cannot be ignored.

Figure 5 Distribution of Top 50 E-commerce Players by Categories
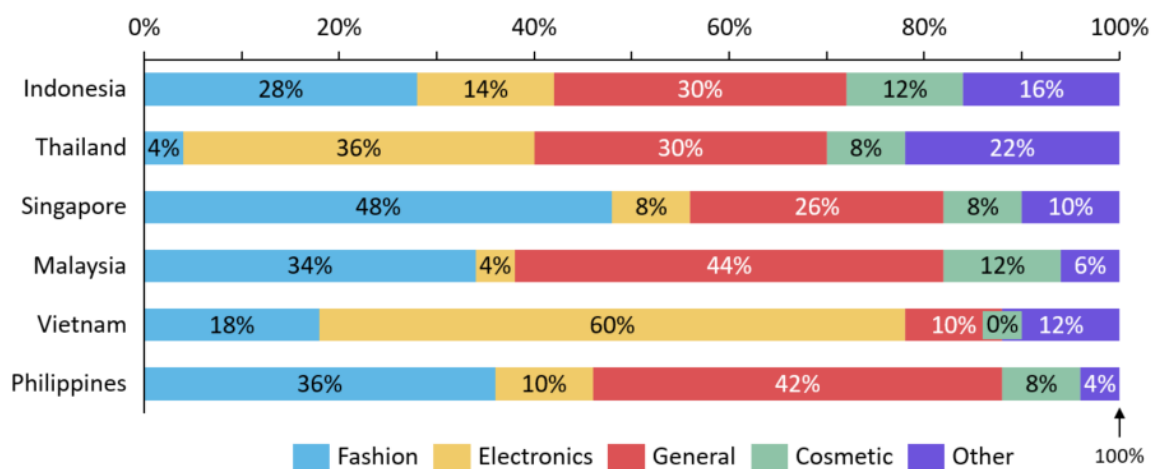
Source: Author & iPrice, July 2017

Figure 5 explains how e-commerce play distributes across five categories: Fashion, Electronics, General, Cosmetic, and Other. Vietnam's online shopping is dominated by electronics (60%), while completely lacking in cosmetics. Malaysia is the opposite with only 4% of merchants operating in electronics, and a hefty 20% are in cosmetics. Almost no merchants operating in Thailand are fashion based, showing that they prefer to shop for clothes in physical stores or via social commerce.

More funding is desperately needed in the region. According to 2015 Google-Temasek report, venture capital (VC) investment in the SEA is made up for 0.04% of the region's GDP in 2014;

that number is lagging China (0.15%), India (0.25%) and the US (0.30%). In the same report, it also pointed out that investment between US$40 billion to US$50 billion will be required over the next ten years for the South-east Asian Internet economy to reach US$200 billion by 2025 (Google & TEMASEK, 2015). However, between 2016 and third-quarter 2017, South-east Asian Internet companies were able to raise more than US$12 billion capital, up from just US$1 billion in 2015, setting the region well on track to meet the estimated 10-year requirements (Cheok, 2017). Singapore is the home base for many international giants in the region with fame in banking and financing, which gives the start-ups there better access to funding than anywhere else. This city-based state received 72% of the region's estimated US$1.1 billion VC funding, and it is home to the only four unicorns (Garena, GrabTaxi, Lazada, Razer) in Southeast Asia.

2 E-commerce Consumer Behavior

The increasing usage of internet has shifted the field of marketing upside down. As a subset of the broader Internet marketing literature, consumer behavior research, including that addressing social network issues, represents 44 percent of all Internet articles over the past five years (Pomirleanu, Schibrowsky, Peltier, & Nill, 2013). This chapter is aiming at reviewing relevant consumer behavior theories and models in detail, providing a solid foundation for further empirical study in Southeast Asia.

2.1 Literature Review

Internet and social media have revolutionized how consumers interact with companies and each other (Solomon, 2017). E-commerce allows people to get various products regardless of the distance, while social media provides a free place for people to share opinions after consumption and recommend products. Online shopping is growing in importance, and this new way to acquire products has both good (e.g., convenience) and bad (e.g., security) aspects (Solomon, 2017). On the one side, companies can reach customers all over the world even from a remote physical location. On the other hand, sellers now are facing fierce competitions from thousands of e-vendors globally instead of a few shops across the street. Also, when consumers obtain products directly from the manufacturer or wholesaler, this eliminates the intermediary—the loyal, store-based retailers that carry the firm's products and sell them at a marked-up price (Solomon, 2017). Finally, there are huge concerns about privacy and security from consumers.

Table 4 Online consumer behavior articles' distribution by category, era and overall

Category	Incubation Era 1993-2004		Exploration Era 2005-2008		Explosion Era 2009-2012		Total 1993-2012	
	n	%	n	%	n	%	n	%
1. Cognitive Issues	65	30.0	86	29.6	103	23.7	254	27.0
2. User-generated Content	6	2.8	41	14.1	95	21.9	142	15.1
3. Internet Segmentation and Demographics	27	12.4	44	15.1	51	11.8	122	12.9
4. Online Usage	37	17.1	32	11.0	32	7.4	101	10.7
5. Cross Cultural	28	12.9	29	10.0	37	8.5	94	10.0
6. Online Communities and Networks	17	7.8	21	7.2	42	9.7	80	8.5
7. Strategic Use and Outcomes	15	6.9	27	9.3	35	8.1	77	8.2
8. Consumer Internet Search	22	10.1	11	3.8	39	9.0	72	7.6
Total	217	100.0	291	100.0	434	100.0	942	100.0

Source: Cummins, W. Peltier, A. Schibrowsky, & Nill, 2014

E-commerce is still proliferating, contributing significantly to the global retail industry. Total retail e-commerce is predicted to grow by 20% combined annual growth rate (CAGR) to become a $4 trillion market by 2020 (P. Singh, 2017). Meanwhile, the study of e-commerce consumer behavior has attracted much attention both from theoretical and empirical sides over the last two decades. A research team in the USA reviewed literature related to online consumer behavior, from which they drew a sample of 942 articles published from 1993 to 2012 (Cummins et al., 2014). As demonstrated in Table 4, the research identified eight categories of articles related to online consumer behavior, ranking based the on the size of the sample (1. Cognitive Issues) to smallest sample size (8. Consumer Internet Search).

Firstly, we can observe inclining research activities in the field of online consumer behavior during the last 20 years. Although hot topics vary among different eras, there are research interests in all the areas. Because even with some fluctuation between eras, the research interest across different categories is somewhat steady. The percentage of "cognitive issues" dominated across time, but we can still notice a shift in research focus as the percentage was constantly dropping. Besides, interests in "online usage" and "cross-cultural" were decreasing as well. In contrast, social network topic, such as "user-generated content" and "online communities and networks" is very trendy. As would be expected, the field has moved away from more descriptive-based research to how consumer behavior issues interact with advancing media technologies, social and community networks and user-generated content (Cummins et al., 2014).

Many articles in the sample are about consumer cognitions when interacting with e-commerce. With an increasing number of articles in this category published, the percentage across three eras declined. This category represents a broad swath of the broader consumer behavior literature including psychological approaches to information processing, learning and memory; attitudinal studies; and decision models including other cognitive variables related to e-commerce engagement and enjoyment (Cummins et al., 2014). Cheema and Bagchi's research in 2011 is an example of a study in this field: they claimed the inclusion of online visual cues could motivate consumers to achieve goals that align with those of the firm, such as persisting through a delay to resolve a customer service issue (Cheema & Bagchi, 2011).

Traditionally, online consumers were perceived purely as receivers of information. With the introduction of social media and networks, consumers gradually became the creator of contents, such as their feedback about products and services, sharing their mood and endorsing other online contents. The age when power rested in the hands of few content creators and media distributors were gone; the age when marketers controlled the communication and path between consumer and advertisement were gone; today, the content creation model is collaborative, collective and customized (Interactive Advertising Bureau, 2008). 77 percent of articles published in the last five years are about "user-generated content", including: the generation of online content such as reviews, recommendations, blogs, opinions, instructions, facts and experiences using platforms such as Facebook, YouTube, Twitter, LinkedIn, Instagram and Yelp; recommendation engines used by firms to recommend or suggest products;

trust in online content and processes; and the impact of online trust on consumer behavior (Cummins et al., 2014).

Thirteen percent of articles in the sample discussed demographic characteristics of the Internet and social network adopters and non-adopters; or market and consumer segmentation and targeting in online channels (Cummins et al., 2014). These studies were mainly focused on traditional demographics and segmentation criteria, such as age, social-economic status, gender, geographic; only a few of them were discussing interconnection with lifestyles of values, such as segmentation by web-usage scale (Brengman, Geuens, Weijters, Smith, & Swinyard, 2005).

"Online usage research" mainly focus on understanding consumers' usage of, and engagement in, online activities with respect to four subcategories: anthropologies of consumer use; usage behavior studies across platforms and product categories; consumer adoption and usage profiles; and profiles of unique user groups (Cummins et al., 2014). Study concerning this topic is usually descriptive because of its nature in profiling consumers. Across different eras, it is the only category that kept a declining trend in the number of published articles, which suggests that if researchers have built a solid foundation in the area, then they prefer to scale up into more challenging topics. Still, as long as technology keeps changing the character of online activities, there is a need for further study (Yang & Lee, 2010).

As the Internet has developed into a global phenomenon, so too has the study of cross-cultural research in the online environment (Kim & Kim, 2010). Globalization has not resulted in converging consumer behavior (De Mooij, 2011) Moreover, cultural differences across countries concerning products and services bought on the Internet appear to mirror differences found in traditional shopping channels (Goodrich & de Mooij, 2011). To understand how culture affects consumer's online behavior, a culture comparison model can help us to understand what causes the difference and measure them in a more quantitative approach. Hofstede's culture dimension model is often used in this category of study. One example is comparing uncertainty avoidance in online shopping among different cultures (Lim, Leung, Sia, & Lee Matthew, 2004). From a functionality point of view, websites receive traffic from various sources and geographical locations; it is crucial to producing tailor-made content for its traffic source based on their culture.

According to Table 4, "online networks and communities" seems to be the most stable category over the past 20 years, with a less than ten percent contribution to the whole sample. The category is mainly concerned with consumer behavior issues in relation to online communities, including consumer development of exchange relationships within peer-to-peer networks and e-communities; perceptions and responses to advertising, viral campaigns and social media marketing in communities; managerial usage(how social media can be useful for online marketers?), as well as its impacts on marketing and consumers (Cummins et al., 2014). In summary, the research revealed the ultimate power of online community, both positive and negative: no matter form eWOM (e-word-of-mouth) or viral campaigns, opinion leaders in the online community are the centers of the storm (J. Yang, Mai, & Ben-Ur, 2012). Thus, marketers should learn how to create an online community from scratches, to collaborate with online communities, to efficiently control the desired image in the group.

As for "strategic use and outcomes", it deals with the impact of the internet and social media on the formulation of strategies. Alternatively, leverage online related tools to gain competitive advantages. Current academic progress in the field is relatively small, but as more and more organizations decided to present themselves online, they will undoubtedly try to win the online battle with strategic advantages (Cummins et al., 2014). The bottom line is that research offering strategic and tactical insight is likely to be in high demand for practitioners and academics alike given the evolving nature of Internet communications and the ongoing launch, growth and maturation of informational platforms and the need to identify how to best capture the benefits of emergent technologies (Cummins et al., 2014).

Essential elements of "consumer internet search" consist of browsing and search costs; search engine, keywords and shopper intentions; and models of online search, navigation and paid search (Cummins et al., 2014). Although the category is the smallest, comparing with incubation era, some articles published in the explosion era almost doubled. Browsing and search costs reflect the time and money allocated to finding products and services at an acceptable price point (Kwak, 2001). Although Search Engine Optimization (SEO) attracted much attention, for the consumer, online search is more about usability than technology. The consumer is often driven by convenience and needs for information when using it. S. Yang & Ghose, 2010 found that organic search (listings on search engines), in combination with paid search advertising (pay per click), enhance click-through rates, conversions rates, and sales. In a nutshell, both theoretical modeling and empirical test regarding online search behavior theory are still under development. Research is thus needed to understand better how factors such as Web site and retailer loyalty, informational and experiential search, product and service category involvement, commitment to the site, crowdsourcing and other social–psychological aspects of online search impact online conversion (Cummins et al., 2014).

Over the past decades, the field of marketing has shifted dramatically. Internet and technologies come with it play an important role in the process, changing customers and sellers' way of communication as well as their mindset. Consumer behavior research is a subset of Internet marketing study and it continues to be the preeminent theoretical framework driving this literature base (Cummins et al., 2014). Technology innovations provide a wide range of research opportunities. For instance, the transformation from desktop computer to laptop, then to mobile devices such as mobile phones, wearable devices completed changed where consumers seek information about, and interact with, prospective sellers and others in the marketplace (Banerjee & Roy Dholakia, 2012). Following that, an in-depth psychological, sociological and behavioral study is needed for building a theoretical framework to understand prerequisites of a healthy seller-buyer relationship across different stages of consumer decision process. Given the frequency and stability of articles investigating cognitive issues, and the wealth of intellectual ammunition within this domain, it is encouraged to conduct programmatic research that first attempts to develop conceptual frameworks and then focuses on providing more granular empirical investigations.

2.2 Online versus Offline Consumer Behavior

The experience of acquiring a product or service may be entirely different offline versus online (Solomon, 2017). An example is how people gamble in casinos versus online. Significant differences were identified when researchers interviewed 30 gamblers for their experiences: for people who prefer to gamble in a casino, they consider the activity as a social event and enjoy the connections with other gamblers during the event. In contrast, the anonymity of the Internet is the reason pushes interviewees to gamble online. Also, people who prefer gamble in casino get influenced by physical sensual effortlessly, for example, the set-up and decorations in the casino turn them on; however, online gamblers emphasize on emotions and feelings, such as safety and control they get because they can stay in a familiar environment. Casino gamblers mentioned the interaction with the dealers or other gamblers creates a pleasant atmosphere, while online gamblers talked about negative behaviors such as bullying or taunts that are considered wrong in a casino (Cotte & Latour, 2009). Both casino and online gamblers aim to make money while having a joyful experience, but their experiences and expectations are entirely different.

The cause for the difference roots into consumer perception when they are shopping online or offline. As shown in Figure 6, perception is a three-step process by which physical sensations, such as sights, sounds, and smells, are selected, organized, and interpreted. The eventual interpretation of a stimulus allows it to be assigned meaning(Solomon, 2017). Imagine how computers process inputs and store data, the human brain has a similar mechanism. However, human brain only selects certain inputs to process instead of all presented stimuli, due to a wide range of stimuli existed in the environment. Moreover, process all of them certainly would dry our out attention. Thus, the interpreting of stimulus varies among individuals, based on their experiences, preferences, and thoughts. As a result, for the same shopping experience, consumers will react to it differently, vice versa.

Figure 6 An Overview of the Perceptual Process
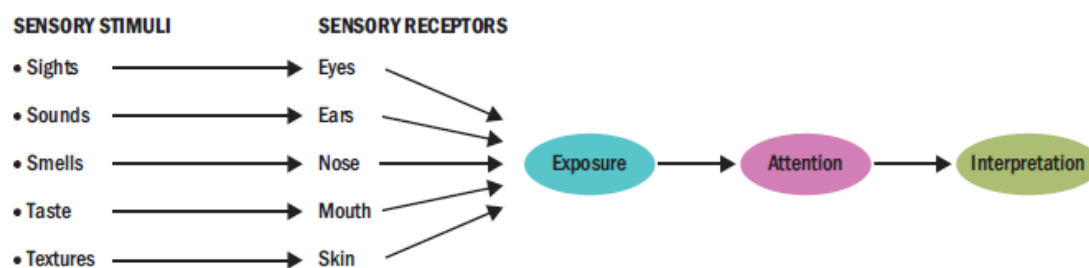
Source: Solomon, 2017

Online versus offline, the fundamental difference in the perceptual process comes from sensory stimuli. Using the example of touch, a shopper is looking for a jacket on the internet. He types "www.amazon.com" in the browser, then navigates himself to the proper product category; he scrolled down to look at all jackets and stopped at a black one which he likes the most. He

clicks the photo to get more information about this jacket. A large photo of the product pops up and in the description, it says: "Handmade leather made in Italy, imagine holding this genuine leather in hands." Would this instruction change this man's perception of the jacket? Endowment effect claims that touching a product encourages shoppers to imagine they own it, and researchers know that people value things more highly if they own them (Solomon, 2017). The answer to that question about is obvious; it certainly will change. To boost online shopping revenue, it is better to encourage consumers using touchscreens, because of the strong feeling of psychological ownership, compared to occasions only involving a touchpad or a mouse (Brasel & Gips, 2014).

Assume the same man goes to an offline clothes store in search of a jacket. He stood in front of a collection of jackets. He then spotted a black jacket, which was the same as the online one. However, this time, he can touch it in real and try it on in person; Would this man prefer to buy this jacket over the online one if other variables stay the same? Apparently, the sensation of different materials and textures reaches to the skin then the brain, and we are more sure about what we perceive when we can touch it(Solomon, 2017). In another word, physical touch (used in the offline example) is more powerful than descriptive touch (used in the online example). Thus, consumers will take actions offline. This is one of the biggest obstacles to online shopping.

Due to the vast contrast between online and offline shopping experience, consumers attracted to shopping online will behave in another way, relative to consumers shopping in a traditional store. Compared to traditional supermarket consumers, online consumers are less price sensitive, prefer larger sizes to smaller sizes (or at least have weaker preferences for small sizes), have stronger size loyalty, do more screening on the basis of brand names but less screening on the basis of sizes, and have stronger choice set effects (Andrews & Currim, 2004). The same study also revealed that these differences are ubiquitous among a substantial group of online consumers, instead of unique behavior of a minority.

Clearly, marketing strategies should differ in the two purchasing environments. A preference for larger sizes could be due to higher consumption rates, building inventory because of higher importance for convenience, or minimizing delivery costs (Andrews & Currim, 2004). Then, the online supermarket should offer more services to keep their customer and make them feel rewarded, such as free exchange for damaged packages, faster delivery, and superior after-sale service. For the counterpart, traditional supermarkets can offer internet-based ordering and pick-up or delivery service to win their customer back; they also can offer promotions on smaller sizes products to keep the customer who may be willing to switch to online shopping in-house.

2.3 Theory of Reasoned Action Model

Theory of Reasoned Action (TRA) is designed to predict how individuals will behave based on their pre-existing attitudes towards the product and behavioral intentions. This theory is rooted from the multi-attribute attitude theory developed through Fishbein's model (1963)

(Eroglu, 2014). Fishbein's (1963) theory reveals that a person's attitude towards an object or innovation is based on the belief and evaluation that the person has with respect to a cited object or innovation (Sendecka, 2006). An individual's decision to engage in a particular behavior is based on the outcomes the individual expects will come as a result of performing the behavior (Gillmore et al., 2002). We can think shopping as the behavioral outcome of both distal (advertising, previous experience with the product) and proximal stimuli (packaging, pricing, shelf assortment) (Needel, 2015). In the 1970s, Fishbein and Ajzen presented their model that predict behavior according to attitudes as described in Figure 7.

Figure 7 Theory of Reasoned Action
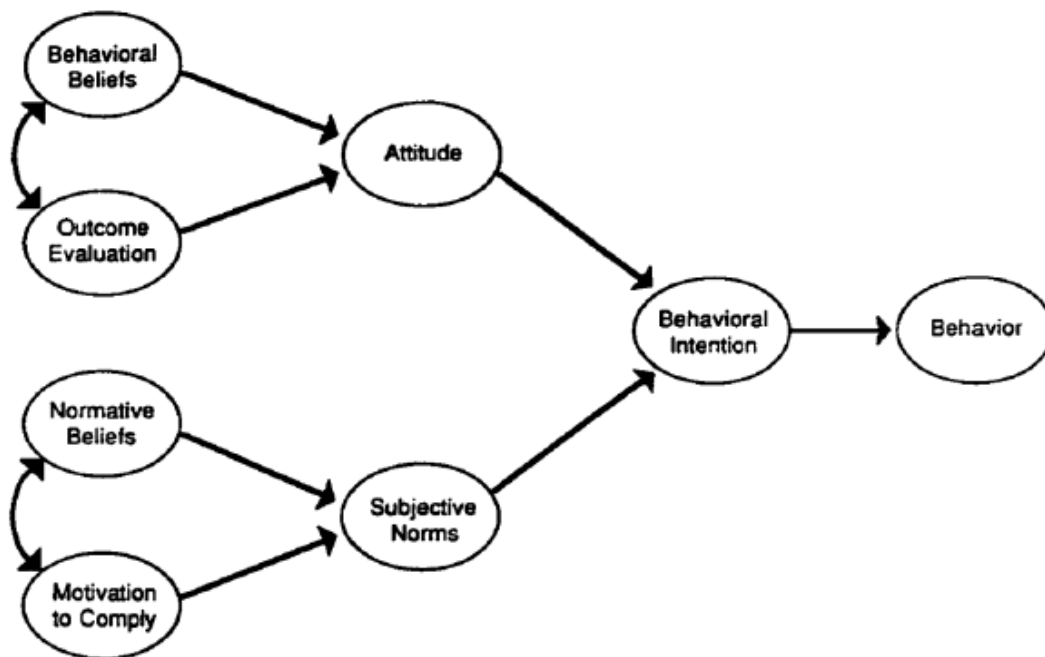
Source: Fishbein & Ajzen, 1975

Subjective norm (SN) accounts for the effects of what we believe other people think we should do; two factors to measure SN: (1) the intensity of a normative belief (NB) that others believe we should take or not take some action and (2) the motivation to comply (MC) with that belief, i.e., the degree to which the consumer takes others' anticipated reactions into account when she evaluates a purchase (Solomon, 2017).

The model also measures attitude toward the act of buying, rather than only the attitude toward the product itself (Solomon, 2017). Attitudes are effective and based upon a set of beliefs about the object of behavior (e.g. Credit card is convenient) (Lai, 2017a). Knowing how someone feels about buying or using an object turns out to be more valid than merely knowing the consumer's evaluation of the object itself (Sheppard, Hartwick, & Warshaw, 1988). We form stronger and more predictive attitudes through direct, personal experience with an attitude towards object than those we form indirectly through advertising (Tavassoli & Fitzsimons, 2006).

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A person might have a positive attitude toward an object, but the attitude towards getting that object can be negative because of embarrassment or complexity of the process. However, attitudes toward a behavior (purchasing a product) form an intention to perform the behavior, which is a positive probabilistic relationship – the more strongly an attitude is held, the more likely the intention (Needel, 2015). Intentions, and hence behavior, are influenced both by the attitudes we hold and the subjective norms regarding said behavior (Needel, 2015).

Meanwhile, there are some obstacles to predicting behavior in TRA model. Firstly, the model tries to predict actual behavior (e.g., taking a diet pill), not the outcomes of behavior that some studies assess (e.g., losing weight) (Solomon, 2017). Besides, some outcomes are not controlled by us. For example, a man is planning to go to the U.S for vacation, but this intention does not help much unless he can get the visa to the U.S. Secondly, the basic assumption that behavior is intentional may be invalid in a variety of cases, including impulsive acts, sudden changes in situation, novelty seeking, or even simple repeat buying (Solomon, 2017). Thirdly, measures of attitude often do not really correspond to the behavior they are supposed to predict, either in terms of the attitude towards an object or when the act will occur (Solomon, 2017). For example, knowing a person's attitudes towards a smartphone is not necessarily revealing his or her purchase intention towards an iPhone. Lastly, the time frame for measuring attitudes also matters. In general, the longer the time between the attitude measurement and the behavior it is supposed to assess, the weaker the relationship will be (Solomon, 2017).

Also, most researchers apply the theory of reasoned action in Western settings (Solomon, 2017). Several cultural roadblocks diminish the universality of the theory of reasoned action (K. Singh, Leong, Tan, & Wong, 1995a). As a result, some of the assumptions in the model may not be valid for other cultures. To begin with, the model can only predict voluntary behavior. Across cultures, however, many activities, ranging from taking exams and entering military service to receiving an inoculation or even choosing a marriage partner, are not necessarily voluntary (Solomon, 2017).

Also, the relative impact of subjective norms may vary across cultures (Solomon, 2017). In some Asian cultures, it is important to avoid confrontation and "saving face". Thus, subjective norms (SN) may have more impact on Asian consumers' behavior when predicting reactions of others to certain choices. Researchers successfully predicted how people would vote based on their voting intention before the election in Singapore. These intentions were influenced by factors such as their attitudes toward the candidate and political environment, and subjective norms, which in Singapore includes an emphasis on harmony and close relations among members of the community (K. Singh, Leong, Tan, & Wong, 1995b).

Moreover, the model measures behavioral intentions and thus presupposes that consumers are actively thinking ahead and planning future behaviors (Solomon, 2017). However, not all cultures have the same understanding towards time: in order to understand how people spend time in different countries, a social scientist compared the pace of life in 31 cities around the world; he and his assistants timed how long it takes pedestrians to walk 60 feet and the time

postal clerks take to sell a stamp, and they found out fastest countries are (1) Switzerland, (2) Ireland, (3) Germany, (4) Japan, (5) Italy while the slowest countries are (31) Mexico, (30) Indonesia, (29) Brazil, (28) El Salvador, (27) Syria (Solomon, 2017). Lastly, a consumer who forms an intention implicitly claims that he or she is in control of his or her actions (Solomon, 2017). However, some cultures (e.g., Muslim peoples) tend to be fatalistic and do not necessarily believe in the concept of free will (Solomon, 2017).

2.4 Technology Acceptance Model

Technology Acceptance Model (TAM), which has been developed by Davis (1989), is one of the most popular research models to predict use and acceptance of information systems and technology by individual users (Surendran, 2012). An adaptation of Theory of Reasonable Action (TRA), TAM is specifically tailored for modeling users' acceptance of information systems or technologies (Lai, 2017b). As illustrated in Figure 8, the TAM suggests that the likelihood of change is based on two factors: the perceived usefulness of the new option and its perceived ease of use based the theory of reasoned actions (Solomon, 2017).

Perceived Usefulness (PU) is defined as the potential user's subjective likelihood that the use of a certain system will improve his/her action and Perceived Ease of Use (PEOU) refers to the degree to which the potential user expects the target system to be effortless (Davis, 1989). In another word, PU is a measure of the individual's subjective assessment of the utility offered by the new IT in a specific task-related context (Gefen, Karahanna, & Straub, 2003a). PEOU is an indicator of the cognitive effort needed to learn and to utilize the new IT (Gefen, Karahanna, & Straub, 2003b). The external variables stand for other factors that can influence a person belief towards a system (Lai, 2017b).

Figure 8 Technology Acceptance Model (TAM)
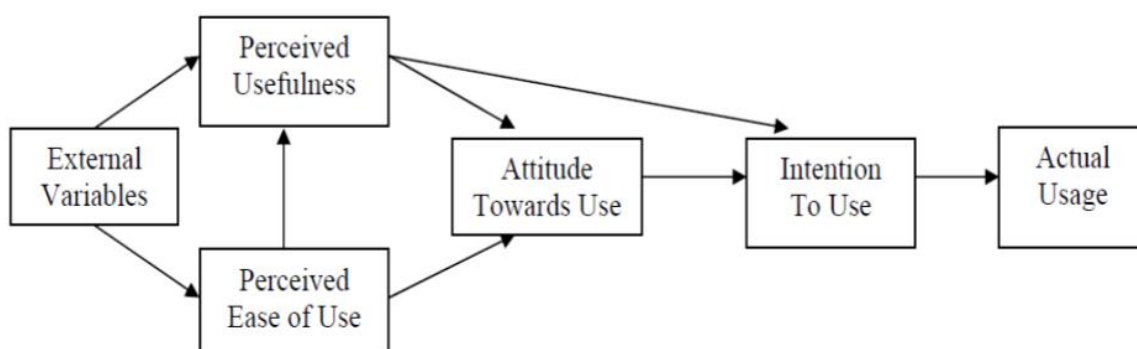
*Source: Davis, Bagozzi, & Warshaw, 1989*

Another dimension of attitude was added to the TAM: enjoyment (Davis, Bagozzi, & Warshaw, 1992). Enjoyment reflects the hedonic aspects discussed in the section entitled "Experiential aspects of e-shopping" below (Dennis, Merrilees, Jayawardhena, & Tiu Wright, 2009). The final version of Technology Acceptance Model was formed by Venkatesh and Davis (1996) as

shown in Figure 9 after the main finding of both perceived usefulness and perceived ease of use were found to have a direct influence on behavior intention, thus eliminating the need for the attitude construct (Lai, 2017b).

Figure 9 Final Version of Technology Acceptance Model (TAM)
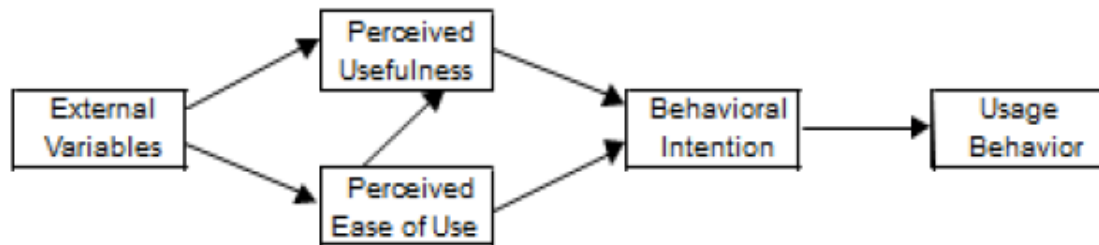
Source: Venkatesh & Davis, 1996

Even though it is useful, TAM has received criticism for overlooking a few consumer behavior influencers. These include social factors, situational factors and consumer traits (Dennis et al., 2009). Identified by Rohm and Swaminathan in 2004 as a significant motivator for e-shopping, situational factors may include variety seeking and convenience (Dennis et al., 2009). A large number of studies on TAM seems to concentrate on single countries, whereas consumer responses have been demonstrated to vary between cultures (Dennis et al., 2009).

TAM does not include social norms (SN) as a determinant of behavior intention (BI), which is an important determinant, theorized by the Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB) (Lai, 2017b). Researchers argued that human and social factors could play a role in the adoption of technology (Lai, 2017b). Therefore, TAM should incorporate social factors, which can help to explain the adoption process better. Nevertheless, subjective norm was likely to have a significant influence on behavioral intention to use in a mandatory environment, whilst the effect could be insignificant in a voluntary environment (Lai, 2017b). Social norms scales had a very poor psychometric standpoint, and might not exert any influence on consumers' behavior intention, especially when the information system application was fairly personal while individual usage was voluntary (Davis, Bagozzi, & Warshaw, 1989b). TAM was also specifically designed to address the factors of users' system technology acceptance (Chau & Hu, 2002). Thus, the comparisons of the study confirmed that the Technology Acceptance Model was easy to apply across different research settings (Lai, 2017b).

2.5 Path to Purchase in E-commerce

2.5.1 Funnel Concept

"Consumer journey" or "path-to-purchase" is the process in which the shopper comes to select a product to purchase, assuming that consumers become aware of a product, psychologically evaluate a product, form the requisite intent to purchase the product, and ultimately purchase

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the product (Needel, 2015). For years, touch points have been understood through the metaphor of a "funnel", as in Figure 10—consumers start with a number of potential brands in mind (the wide end of the funnel), marketing is then directed at them as they methodically reduce that number and move through the funnel, and in the end they emerge with the one brand they chose to purchase (Court, Elzinga, Mulder, & Vetvik, 2009). The funnel theory tells that consumers tend to narrow their initial consideration range when they choose between options, make decisions then make purchases. The after-sale stage determines consumers' loyalty towards brands and the possibility of repurchasing. Traditionally, in order to influence how consumers behave, marketers push marketing activities towards consumers at each phase of the funnel. The funnel metaphor does help a good deal—for example, by providing a way to understand the strength of a brand compared with its competitors at different stages, highlighting the bottlenecks that stall adoption, and making it possible to focus on different aspects of the marketing challenge (Court et al., 2009).

Figure 10 Funnel Concept
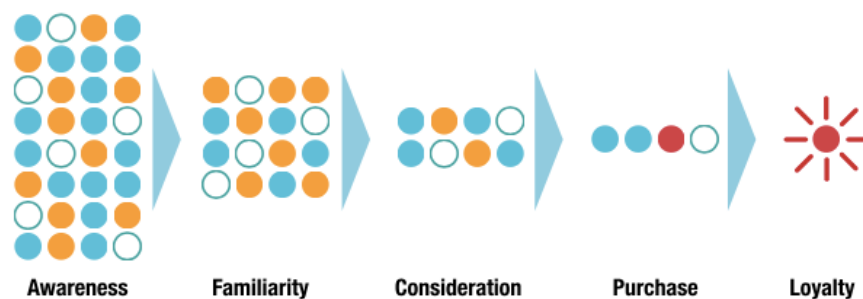
Source: Court et al., 2009

However, the funnel concept is not able to capture all factors that influence consumer's decision, due to a wider range of product offering, inevitable omnichannel trend and increasing number of well-informed consumers. Traditional shopping concept that has evolved significantly over the past decade due to the internet, digital innovation and the subsequent rise of online shopping (KPMG International, 2017). Although the five steps, awareness, consideration, interaction, purchase and advocacy are unchanged, the means by which consumers engage with them is very different (Chris, 2015). What experts used to illustrate as a linear or funnel-like decision-making path now looks more like a circular, looping journey where distractions often lead consumers to revisit information search and alternative evaluation, just when it seemed like a purchase decision should have been reached (Solomon, 2017). Consumers move through and back and forth between the stages, influenced by a myriad of both offline and online factors at every stage (KPMG International, 2017). McKinsey introduced a more sophisticated model that recognizes the feedback stage in the consumer shopping journey, where loyalty is the endpoint of this journey (Figure 11). It applies to any geographic market that has different kinds of media, Internet access, and wide product choice, including big cities in emerging markets such as China and India (Court et al., 2009).

2.5.2 Circular Journey

The decision-making process is now a circular journey with four phases: initial consideration; active evaluation, or the process of researching potential purchases; closure, when consumers buy brands; and post-purchase, when consumers experience them (Court et al., 2009). In Figure 11, the consumer firstly starts with considering a range of brands, based on their perception of the brand and exposure to marketing activities (consider). Then consumer evaluates what they want, they may add or delete brands from the original set (evaluate, bond). Next, the consumer selects a brand when making a purchase (buy). Lastly, consumer builds expectations after purchasing, which will be the trigger for next decision journey based on previous experience (experience, advocate).

Figure 11 Consumer Decision Journey
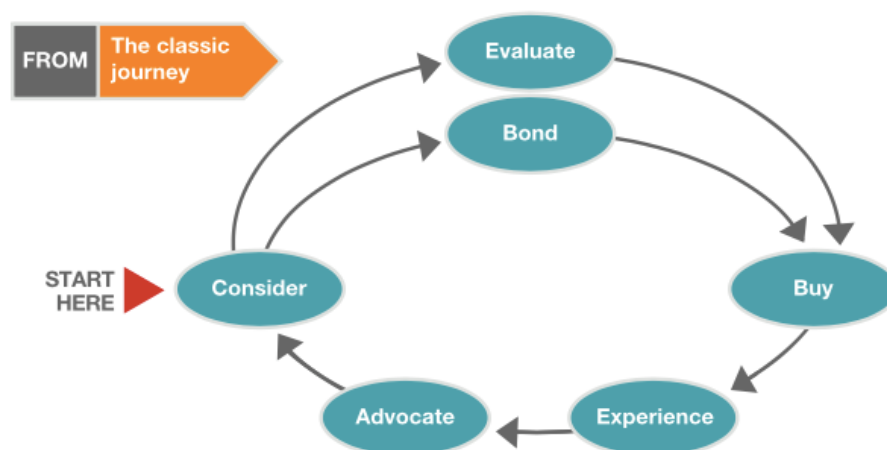
Source: Edelman & Singe, 2015

Comparing with funnel concept, there are three significant changes in the way consumers make purchase decisions. Firstly, contrary to the funnel metaphor, the number of brands under consideration during the active-evaluation phase may now actually expand rather than narrow as consumers seek information and shop a category (Court et al., 2009). This creates an opportunity for brands that are not in initial-consideration to resonate with consumer then entering the decision process. Meanwhile, brands already under consideration should be careful about their status.

The second profound change is that outreach of consumers to marketers has become dramatically more important than marketers' outreach to consumers (Court et al., 2009). This means, rather than "pushing" consumer to get all the information through traditional channels, such as TV commercial and direct marketing, consumer-driven marketing, such as word-of-mouth and online reviews, is getting popular as a customer can search for information from various sources. In another word, consumers are willing to "pull" useful information actively.

Focus on consumer-driven marketing help marketers reach the right customer at the right time in each stage of their decision journey.

Thirdly, when consumers reach a decision at the moment of purchase, the marketer's work has just begun: the post-purchase experience shapes their opinion for every subsequent decision in the category, so the journey is an ongoing cycle (Court et al., 2009). After-sale service is critical for consumer's loyalty, which can boost repurchase. However, the level of loyalty is different in more complex and more competitive environment. Of consumers who profess loyalty to a brand, some are active loyalists, who not only stick with it but also recommend it; others are passive loyalists who, whether from laziness or confusion caused by the dizzying array of choices, stay with a brand without being committed to it (Court et al., 2009).

2.5.3 Accelerated Circular Journey

Figure 12 Accelerated Loyalty Consumer Decision Journey
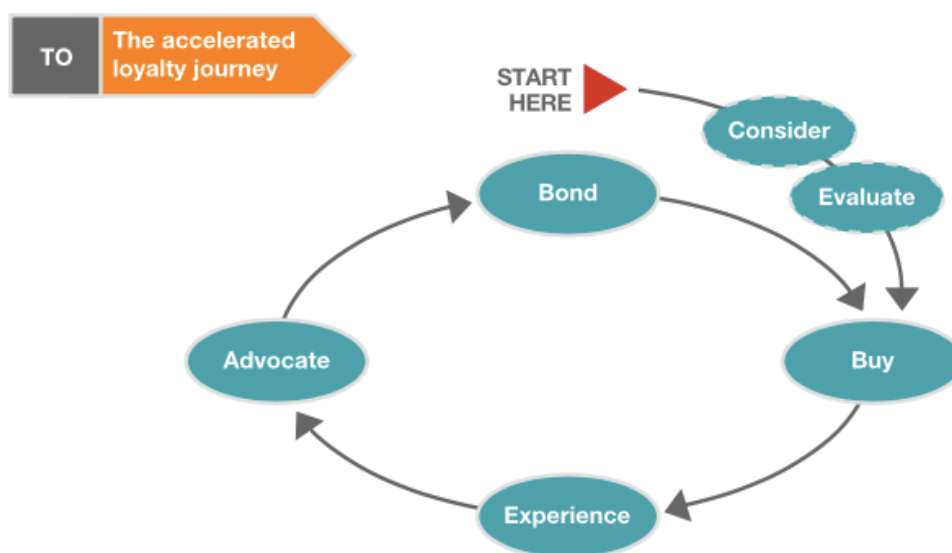
Source: Edelman & Singe, 2015

Later in 2015, McKinsey updated the original circular consumer decision journey and introduced accelerated loyalty consumer decision journey (Figure 12), where companies not only passively react to consumers' purchase decisions but also proactively impact the journey when consumers are making purchase decisions. In the classic journey (Figure 11), consumers engaging in an extended consideration and evaluation phase before either entering the loyalty loop or proceeding into a new round of consideration and evaluation that may lead to the subsequent purchase of a different brand (Edelman & Singer, 2015). Companies that do this well can radically compress the consideration and evaluation phases—and in some cases, even eliminate them—during the purchase process and catapult a consumer right to the loyalty phase of the relationship (Edelman & Singe, 2015). The journey itself is becoming the defining source

of competitive advantage, because companies are designing and refining journeys to attract shoppers and keep them, creating customized experiences so finely tuned that once consumers get on the path, they are irresistibly and permanently engaged (Edelman & Singe, 2015). The updated model works, customers are willing to stay loyal because it creates new value and benefits for customers through the journey.

The research also identified four distinctive but interconnected capabilities to deliver such model: automation, proactive personalization, contextual interaction, and journey innovation. Each of these makes journeys "stickier"—more likely to draw in and permanently capture customers. Moreover, although the capabilities all rely on sophisticated information technologies, they depend equally on creative design thinking and novel managerial approaches, as we will explore later (Edelman & Singer, 2015). Automation involves the digitization and streamlining of steps in the journey that were formerly done manually (Edelman & Singer, 2015). One example is clothing subscription box: a real stylist will review subscribers' preference which they filled in online, then the stylist will select five to ten pieces of clothes, sending the customer a curated box of clothes (Wong, 2017). This automated process enables the consumer to upgrade their wardrobe under professional advice while keeping minimum efforts.

Building on the automation capability, companies should take information gleaned either from past interactions with a customer or from existing sources and use it to instantaneously customize the shopper's experience (Edelman & Singer, 2015). A lot of Amazon's fantastic revenue growth has been built on successfully integrating recommendations across the buying experience -- from product discovery to checkout (Arora, 2016). Another key capability involves using knowledge about where a customer is in a journey physically (entering a hotel) or virtually (reading product reviews) to draw him forward into the next interactions the company wants him to pursue. For example, when using Airbnb to travel, their mobile app performs as a reception desk where the user can find all the information about the property and communicate with the owner.

Innovation, the last of the four required capabilities, occurs through ongoing experimentation and active analysis of customer needs, technologies, and services in order to spot opportunities to extend the relationship with the customer (Edelman & Singer, 2015). By using prototyping and A/B test, the company can test the usability of new services and get in-time feedback. For instances, Wechat, a Chinese social media giant, now integrated e-payment system where the user can pay with QR code almost every shop in the country. Key to these expanded journeys is often their integration with other service providers because this increases the value of the journey, carefully handing customers off to another firm can actually enhance the journey's stickiness (Edelman & Singer, 2015).

2.5.4 Customer Journey in E-commerce

We can use the model stated in Figure 11 to understand path-to-purchase of e-commerce: in "consider" stage, a multi-channel strategy is critical for increasing awareness. When comparing

the impact of online versus offline touchpoints in creating the first trigger moment, it is interesting to observe that 52 percent of consumers cited at least one offline channel as a source of initial awareness, and 59 percent cited one or more online channels (KPMG International, 2017). It appears that e-commerce is not an online exclusive business: online and offline channels are excellent in creating awareness and demand when combining them.

In "evaluate & bond" stage, according to KPMG International's survey in 2017, the importance of online channels continues to prevail, with the top two channels for research being online reviews (cited by 55 percent of respondents) and company websites (47 percent). Meanwhile, price or promotions (identified by 27 percent of respondents) were the factors most likely to influence consumers' decision regarding which product or brand to buy online(KPMG International, 2017). However, a slight difference does exist by categories: for example, in luxury goods, brand reputation is a particularly important factor to consider.

In "buy" stage, price remains the most common consideration when consumers are deciding where to buy, particularly in certain categories such as electronics (KPMG International, 2017). Generally speaking, the decision factors most often considered by consumers choosing vendors were consistent across age groups, although Millennials were considerably more likely than the older generations to choose a vendor based on price than website preference (KPMG International, 2017).

As for the last stage "experience & advocate", Positive customer experiences are critical in generating loyalty and repeat purchases, and in an era of social media and increasingly trusted peer reviews, voicing customer experiences can significantly influence future buying decisions—both positively and negatively (KPMG International, 2017). We can observe the rise in online reviews: around 30 percent of online consumers said they posted product feedback online and, in Asia, consumers were nearly 50 percent more likely than average to post a review (KPMG International, 2017). Various channels are available for the consumer to share comments, including seller's website, social media or directly to their peers.

In today's world, where consumers have access to constant information through computers, smartphones and tablets, each person's path to purchase is complex and unique (Milward Brown Digital, 2013). There are many situations where an online consumer could be distracted from their original decision journey. For example, consumers can get to the brink of a purchase and then regress back to researching and browsing—because it is easy to do (Milward Brown Digital, 2013). No matter on using a cell phone, desktop or tablet, online consumer is just a click away from their initial intent. There is always a possibility of deviation before consumers make a purchase. Each action consumer made online differs across platforms based on their preferences. The timing, location, and intensity of consumer behavior indicate levels of involvement within the path to purchase and opportunities for marketers to engage (Milward Brown Digital, 2013). Keep a record of consumer's digital footprint is essential, what more important is how, when and why they are behaving this way.

2.6 Key Influencers of Online Consumer Behavior

2.6.1 E-commerce Consumer Behavior Model

Internet shopping action has theoretically been studied based on the axis of the theories relating to "innovation adopting" (Eroglu, 2014). This is probably due to online shopping is a post-learned behavior thus an innovation. Socio-psychological approaches such as TRA or TAM are becoming prominent in description of the behaviors of online consumers (Eroglu, 2014). A behavior is a person's observable action towards an intention or purpose performed in an environment where prior conditions are constant (Eroglu, 2014). One of the most important assumptions of the theory mentioned above is the rationality of human. As in previous TAM studies, the underlying logic is that IT users (in this case, online customers using a Web site) react rationally when they elect to use an IT (Gefen et al., 2003b). Because rational individuals would evaluate many factors when making adoption decisions when other factors are constant, the rational individual focuses on benefits and costs of each factor, and in case a benefit concerning an innovation outweighs the costs of such innovation than the individual adopts that innovation (Eroglu, 2014). Such benefits and costs are beyond monetary measurement: a sense of belonging, feeling of security or confidence can be the component as well.

Researchers build a two-stage conceptual model to explain e-consumer behavior, based on TAM and TRA model. As demonstrated in Figure 13, the basic model argues that functional considerations influence attitudes to an e-retailer, which in turn influence intentions to shop with the e-retailer and then finally actual e-retail activity, including shopping and continued loyalty behavior (Dennis et al., 2009). From P_1 to P_8 in the flow, all the proposes are positively influencing each other.

**Figure 13 The Basic Model of E-commerce Consumer Behavior**
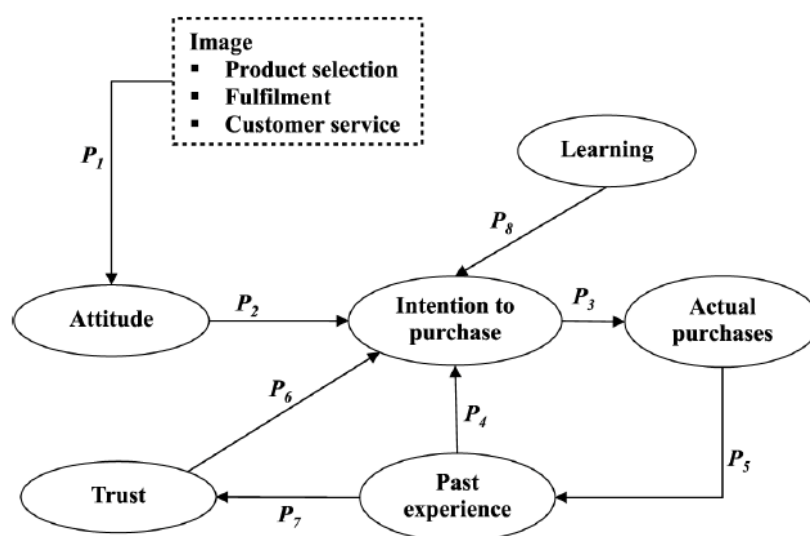
Source: Dennis et al., 2009

Starting with "images," which is an overall rating and evaluation from consumer to guide their way to take actions. Then "intentions" are the direct outcome of "attitudes" (plus social aspects or "subjective norms", as discussed below) such that there are no intervening mechanisms between the attitude and the intention (Dennis et al., 2009). Continuously, as consumers achieve more satisfactory e-shopping experiences, they are more likely to trust and re-patronize, extending our framework to behavioral responses (Dennis et al., 2009). "Trust", a willingness to rely on an exchange partner in whom one has confidence, is central to e-shopping intentions; security (safety of the computer and financial information) and privacy (individually identifiable information on the internet) are closely related to it (Dennis et al., 2009). As e-shoppers become more experienced, trust grows and they tend to shop more and become less concerned about security (Dennis et al., 2009). An e-retail site becomes more attractive and efficient with increased use as learning leads to a greater intention to purchase (Dennis et al., 2009).

2.6.2 E-commerce Consumer Behavior Enhanced Model

As shown in Figure 14, the team extended the model to include perspective from social and experiential parts, as well as consumer traits in the second stage. From P_9 to P_{15}, all the proposes are positively influencing each other. P_{16}Suggest consumer's attitude towards online shopping g will be influenced by different kinds of situational factors. As for P_{17M1} and P_{17M2}, the relationship between social factors/emotion and attitude towards an e-retailer will be moderated by consumer traits.

Figure 14 The Enhanced Model of E-commerce Consumer Behavior
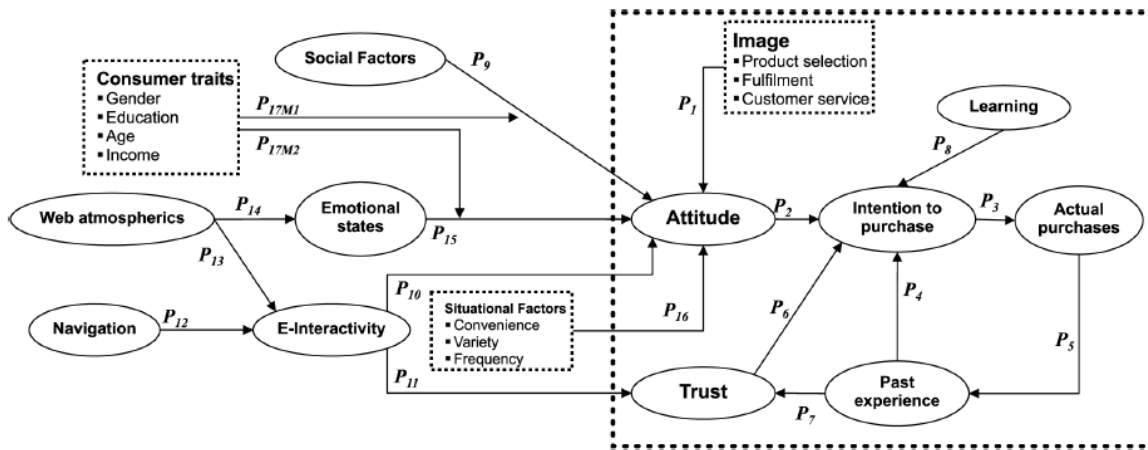
Source: Dennis et al., 2009

"Social factors" corresponding to subjective norms (SB) in the TRA model and it is an important motivator for online shopping. Social benefits of e-shopping, such as communications with like-minded people, can be important motivators that influence intention (Dennis et al., 2009). Shopping is not just about products but also about the services and experiences comes along. "E-interactivity", such as personalized greeting card, encompasses

the equivalent of salesperson-customer interaction as well as visual merchandising and indeed the impact of all senses on consumer behavior (Dennis et al., 2009). Overall interactivity was the most important determinant of consumer attitudes to a particular e-retailer and interactivity could influence both trust and attitudes to the e-retailer (Dennis et al., 2009). "Navigation" is critical for the ease of use when shopping online, for example, consumers expect to find their desired item as quickly as possible.

Many studies in the bricks-and-mortar world have used an environmental psychology framework to demonstrate that cues in the retail "atmosphere" or environment can affect consumers' emotions, which in turn can influence behavior (Dennis et al., 2009). S-O-R model claims that stimulus like colors, lights, scents or sounds can be leveraged to influence consumer's behavior (Mehrabian & Russell, 1974). For example, fast-food restaurants usually play fast-paced background music to encourage people dinning fast. The same type of "web atmospherics" model can be applied to e-consumer behavior: graphics, visuals, audio, color, product presentation at different levels of resolution, video and 3D displays are among the most common stimuli (Dennis et al., 2009). Besides, "emotional considerations" are one of the main attributes that influence attitudes towards e-shopping (Jayawardhena & Tiu Wright, 2009).

"Situational factors" will determine consumer's behavior towards online shopping as well. For instance, e-satisfaction is heavily influenced by consumer's perception of convenience (Kim & Forsythe, 2005). Shopping online could potentially save consumer's psychological cost by reducing the search cost when consumer has time pressure. Moreover, a variety of products is a related aspect of online shopping that also reduces search costs (Dennis et al., 2009). According to previous research, experienced internet users were more likely to participate in virtual communities for informational reasons, whereas novice users were more likely to participate in social interaction (Dennis et al., 2009).

Finally, "consumer traits" also play a crucial role in their behavior. In the enhanced model, researchers mainly concentrated their study on four dimensions of consumer traits: gender, age, education and income; plus need for cognition (NFC) and optimum stimulation level (OSL). Men's decisions to use a computer system were more influenced by the perceived usefulness than were women's; on the other hand, in line with the systems-orientation difference, women's decisions were more influenced by the ease of use of the system(Dennis et al., 2009). Better educated and wealthier consumers seek alternative information about a particular e-retailer, apart from their satisfaction level, whereas less well educated, poorer consumers see satisfaction as an information cue on which to base their purchase decision (Dennis et al., 2009). The elder is not very likely to seek for new information compared with the younger generation, whereas older generation has a stronger sense of loyalty and satisfaction towards purchased products (Dennis et al., 2009). Similarly, individuals with a personality high on NFC engage in more search activities that lead to greater e-interactivity, while high OSL people have a higher need for environmental stimulation and are more likely to browse, motivated more by emotion than cognition (Dennis et al., 2009).

2.7 Perceived Risk and Trust in Online Consumer

Attracting new customers are commonly considered more expensive than retaining customers, while trust is the vital key to do in e-vendor and that trust is at the heart of relationships of all kinds (Gefen et al., 2003b). Comparing with traditional bricks-and-mortar stores, the primary interface of online shopping is information technology, the website. Trust is more important in the case of e-commerce because the limited Web interface does not allow consumers to judge whether a vendor is trustworthy as in typical, face-to-face interaction (Gefen et al., 2003b). Moreover, Trust makes consumers comfortable sharing personal information, making purchases, and acting on web vendor advice, all of which are behaviors essential to widespread adoption of e-commerce (Bianchi & Andrews, 2012).

Trust is an expectation that others one chooses to trust will not behave opportunistically by taking advantage of the situation (Gefen et al., 2003b). Researchers in general view trust as (1) a set of specific beliefs dealing primarily with the integrity, benevolence, and ability of another party; (2) a general belief that another party can be trusted, sometimes also called trusting intentions or "the 'willingness' of a party to be vulnerable to the actions of another"; (3) affect reflected in "'feelings' of confidence and security in the caring response" of the other party, or (4) a combination of these elements (Gefen et al., 2003b). Drawing from several theoretical streams, research on trust has identified some trust antecedents: knowledge-based trust, institution-based trust, calculative-based trust, cognition-based trust and personality-based trust (Gefen et al., 2003b). 、

Knowledge-based trust antecedents include familiarity with the e-vendor, reducing social uncertainty through increased understanding of what is happening in the present (Gefen et al., 2003b). Another trust-building process that may apply to online settings is institution-based trust, which refers to one's sense of security from guarantees, safety nets, or other impersonal structures inherent in a specific context (Gefen et al., 2003b). For example, a guaranteed or certificate from recognized third-party or well-developed consumer law that protects consumer's rights. According to the calculative-based trust paradigm, trust can be shaped by rational assessments of the costs and benefits of another party cheating or cooperating in the relationship (Gefen et al., 2003b). 1985). If the costs of being caught outweigh the benefits of cheating, then trust is warranted since cheating is not in the best interest of the other party (Gefen et al., 2003b). Cognition-based trust examines how trust is built on first impressions rather than through experiential personal interactions (Gefen et al., 2003b). It heavily depends on categorization and illusions of control. Lastly, personality-based trust or propensity to trust refers to the tendency to believe or not to believe in others and so trust them (Gefen et al., 2003b). Personality-based and cognition-based trust is linked to the initial formation of trust, whereas the rest are relevant in all stages of trust.

Consumer trust towards the e-vendor is best-defined regarding three related but conceptually distinct dimensions, namely consumers' beliefs about the e-vendor's integrity, benevolence, and competence (Bartikowski & Merunka, 2015). The first dimension of trust, integrity, is the

consumer's beliefs about the sincerity of the e-vendor and its promises, reflecting the extent to which a truster believes (s)he can count on the firm to follow a set of moral principles, such as truth-telling, honesty and fairness (Bartikowski & Merunka, 2015). Second, benevolence reflects beliefs about qualities of the trustee that demonstrate genuine concern and care for the partner, such as responsiveness and good-will (Bartikowski & Merunka, 2015). E-merchant with higher of benevolence tends not to take advantage of consumer and act on behalf of consumer's benefits. Finally, the competence (or ability) dimension reflects the consumer's beliefs about the e-vendor's knowledge and skills that are necessary to meet expected performance levels (Bartikowski & Merunka, 2015).

Given that a Web site is both an IT and the channel through which consumers interact with an e-vendor, technology-based and trust-based antecedents should work together to influence the decision to partake in e-commerce with a particular e-vendor (Gefen et al., 2003b). From website as IT perspective, trust is part of perceived usefulness and perceived ease-of-use in TAM; from website as channel perspective, trust should be the defining attribute of the relationship, determining its very existence and nature, even beyond economic factors such as lower price (Gefen et al., 2003b).

In TAM model, trust helps reduce the social complexity a consumer faces in e-commerce by allowing the consumer to subjectively rule out undesirable yet possible behaviors of the e-vendor, including inappropriate use of purchase information (Gefen et al., 2003b). In another word, trust will positively increase the intention to use online shopping website. Trust should also increase certain aspects of the perceived usefulness of a website (Gefen et al., 2003b). Perceived usefulness of a website depends on both technical properties, such as product recommendation engine, live chat and non-technical properties, such as page design, getting the item as ordered online. Trust should increase the perceived usefulness of the interaction through the Website by increasing the ultimate benefits, in this case getting the products or services from an honest, caring, and able vendor, as expected (Gefen et al., 2003b). Perceived ease of use (PEOU) should also increase trust through the perception that the e-vendor is investing in the relationship, and in so doing signals a commitment to the relationship (Gefen et al., 2003b). A user-friendly and easy to navigate website send a clear message to customers: there is nothing to hide and the e-vender is dedicated to improving customer experience.

Knowledge-based antecedent (familiarity with websites) is significantly correlated with trust, but it will not significantly increase trust when other antecedents were included; however, increase the perceived ease of use (PEOU) when customer have previous experience with the website (Gefen et al., 2003b). This probably due to familiarity can be gained by paid ads or other passive channels. Also, previous experience does not necessarily reflect the future outcome. Whereas the previous experience of using the website provides users a smoother journey, thus improving PEOU.

When there is social uncertainty as to how others will behave, trust is a prime determinant of what people expect from the situation, both in social interactions and in business interaction(Gefen et al., 2003b). Especially in the e-commerce sector where consumers depend

upon the e-vendor to fulfill promises to get their desired items, and yet find themselves in the circumstances where law enforcement or other protection mechanism are rather immature. Perceived risk relates to the online environment where a consumer needs to trust the technology involved to undertake the various tasks involved in searching and purchasing (Bianchi & Andrews, 2012). It has a negative impact towards consumer's intention to purchase. Financial risk, product risk and time/convenience risk are negatively correlated with perceptions of online shopping (Forsythe, Liu, Shannon, & Gardner, 2006). Negative perceptions are often associated with using the medium, that is, with the security and reliability of transactions over the web, termed transaction risk (Bianchi & Andrews, 2012). The worry about possible loss of money via credit card goes together with receiving fake products or even receiving nothing when it comes to transaction risk. Previous research has shown that trust increases purchase intentions both direct, as it does in other buyer-seller relationships, and through reduced perceived risk (Gefen et al., 2003b).

Figure 15 Trust and Online Retail Revolution
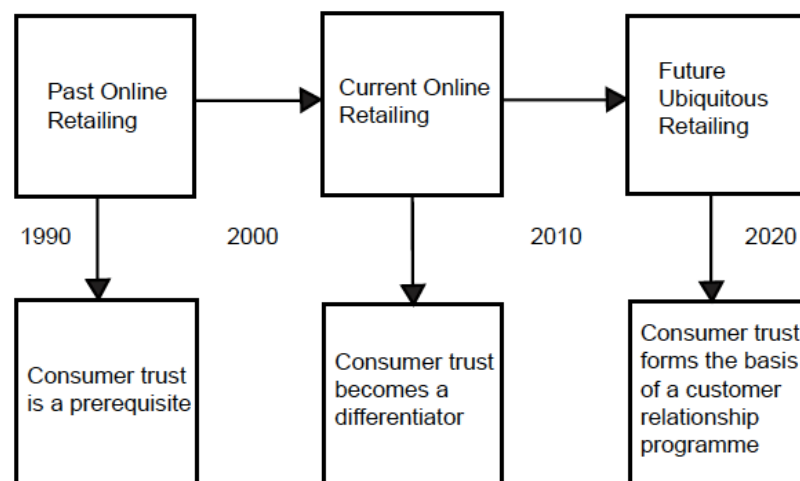
Source: Bourlakis, Papagiannidis, & Fox, 2008

As shown in Figure 15, a research team in the UK proposed a conceptual framework that depicted the retail revolution in online retailing, where trust enjoyed a different status depending on the stage of that revolution (Bourlakis et al., 2008). In the early stage of e-commerce, trust becomes a prerequisite for fostering and nurturing online shopping relationships, as well alleviate risks related to it (Bourlakis et al., 2008). In the current stage, the most successful online firms, including retail firms, have made the trust element the key differentiator for their online strategies compared to other online firms, which continued with the same online customer practices and subsequently, have achieved mediocre results (Bourlakis et al., 2008). In the future, when it comes to trust, it is difficult to hypothesize whether ubiquitous retailing will increase or decrease customers' trust when shopping online, as this will depend on how each consumer uses the technology (Bourlakis et al., 2008).

2.8 Online Consumer Behavior Research in Southeast Asia

We have already concluded e-commerce in Southeast Asia has huge potential in Chapter 1; many global players such as Amazon, Alibaba are now heavily investing in the region. Consulting firms like McKinsey & Company, Bain & Company also released relevant whitepaper or articles towards this topic. However, the academic attention related to technology readiness e-commerce development at the regional level is rather limited, compared with other mature markets. Currently, research is either at a country-specific level, especially in Malaysia, Singapore and Indonesia or global comparison level.

Singapore has a well-developed legal system, where online shoppers might perceive that there is little opportunity for a seller to escape the legal penalties associated with making false claims about product quality and product authenticity; in that case, shoppers would receive little additional value from third-party guarantees(Clemons et al., 2016). Also, US and Singapore consumers pay online if they purchase some products from Web vendors, where Chinese consumer prefer to buy online and pay offline due to low penetration of credit card (Teo & Liu, 2007). In Malaysia, trust and attitude had a stronger direct effect on online shopping intention, whereas utilitarian orientation, convenience, prices wider selection, and income had a stronger indirect effect on online shopping intention through the attitude towards online shopping as mediation (Delafrooz, Paim, & Khatibi, 2011). Online consumers in Malaysia still lack confidence and trust in utilizing the Internet as a shopping channel; they are mainly concerned about issues related to privacy and trust when dealing with online retailers (Khatibi, Haque, & Karim, 2006).

To promote online shopping in Vietnam is to increase the ability to recognize the benefits of trading products on the Internet, in addition to that the usefulness of online payment, while minimizing risks when buying and selling transactions on the internet (Tan, Khanh, & Gim, 2014). The development of e-commerce in Vietnam is challenging, the fear of risk-taking when dealing on the internet on the second aspect is the product/service and the transaction (Tan et al., 2014). Lifestyle is a significant factor that was influencing purchasing decisions via online shopping, while emotion was assessed as a part of consumers attitudes, and it was greatly influential in deciding to purchase a product via online shopping in Indonesia (Warayuanti & Suyanto, 2015).

Research conducted in Malaysia found age group, occupation group, types of goods group and hours spent on the internet are not key influencers in consumer's attitudes towards online shopping, whereas e-commerce experience, income group and customer service are (Zuroni & Goh, 2012). Similar research conducted in Thailand shown age and education related to online shopping; benefits perception and psychographics are also related to attitude towards online shopping; attitude toward online shopping is found to have a positive relationship with purchasing in money spent, average time spent and frequency of purchasing (Cheawkamolpat, 2003).

Perceived usefulness (PU) was not a significant factor in determining the intention to shop online in Malaysia; the notion that individuals are more influenced by the usefulness of the products instead of its ease of use had been challenged (Ramayah & Ignatius, 2005). In Indonesia, the variable of consumer attitudes mediates the relationship between ease of use, usefulness, perceived risk, and intention to buy in fully (Putro & Haryanto, 2015).

3 Dataset and Methodology

Chapter 3 explains steps and design of the research methodology that were utilized to complete the research goals. The objectives of this thesis are to investigate consumers' online purchasing behavior in Southeast Asia, with a specific focus on purchasing behavior and trust; to understand the causes and reasons behind it; and to give recommendations to e-commerce players based on research findings. A comparative study showed similarities and differences both at the regional level and country-specific level for the ASEAN-6.

3.1 Research Design

The research has been defined as exploratory, which aims to further explore the field, considering the lack of in-depth investigation. The research was also comparative, as the ASEAN-6 includes six different countries with distinct cultural heritage and economic development levels. The study can be expected to reveal differences between the countries but also certain similarities might exist. Comparative research seeks to compare and contrast nations, cultures, societies, and institutions (Lewis-Beck, Bryman, & Liao, 2004).

Primary research is the backbone of the empirical study, while secondary research is used to explain and support findings from primary research. Primary research is defined as information that is collected firsthand, generated by original research tailor-made to answer specific questions, relevant, and up-to-date (Onkvisit & Shaw., 2004). In addition, a quantitative method is used to collect data in primary research in order to develop a more logical and data-led approach which provides a measure of what people think from a statistical and numerical point of view (British Library, 2018). Quantitative research consists of the collection, tabulation, summarization, and analysis of numerical data to answer research questions or hypotheses (Levine, 2006).

Three sources of data were collected for the quantitative study: detailed transactional records from price comparison and coupons websites operating across the ASEAN-6, results from consumer questionnaires distributed in Singapore, Malaysia and the Philippines. Lastly, content analysis of the top 50 e-commerce player's websites within the ASEAN-6 based on SimilarWeb's ranking.

3.2 Data Mining

iPrice Group (http://ipricegroup.com) provided the dataset. iPrice Group is an online shopping aggregator that offers product catalogs, price comparison and coupons services, and allows consumers to browse for products and compare prices from a wide range of online stores in Southeast Asia. Founded in 2014, iPrice was set up to offer shoppers the widest selection of products and brands, provided by hundreds of partners in Southeast Asia – all made available

on one shopping website (iPrice Group, 2018). Focused on execution from the headquarters in Kuala Lumpur, they quickly grew into the leading platform for online shoppers across seven markets: Malaysia, Indonesia, Singapore, Thailand, Vietnam, Philippines and Hong Kong (iPrice Group, 2018). The company's services are similar to a bridge, linking consumers and online stores, instead of shipping products to consumers directly.

As illustrated in Figure 16, the sample was composed of consumer's transactional records in 2017, includes the company's three products: a price comparison service, shop (product catalog) and coupons. All three products have the same deal type: cost per sales (CPS), which meant all records have to be consolidated both by the company and corresponding e-merchant. If the transaction was approved, the company would receive a commission for it based on order value. Otherwise, it was rejected. The "rejected" status is usually due to return of the product, unsuccessful payment or duplicated order. From seven operating countries, the sample includes Malaysia, Indonesia, Singapore, Thailand, Vietnam, Philippines, corresponding to the ASEAN-6.

Figure 16 Sample Composition of the Dataset
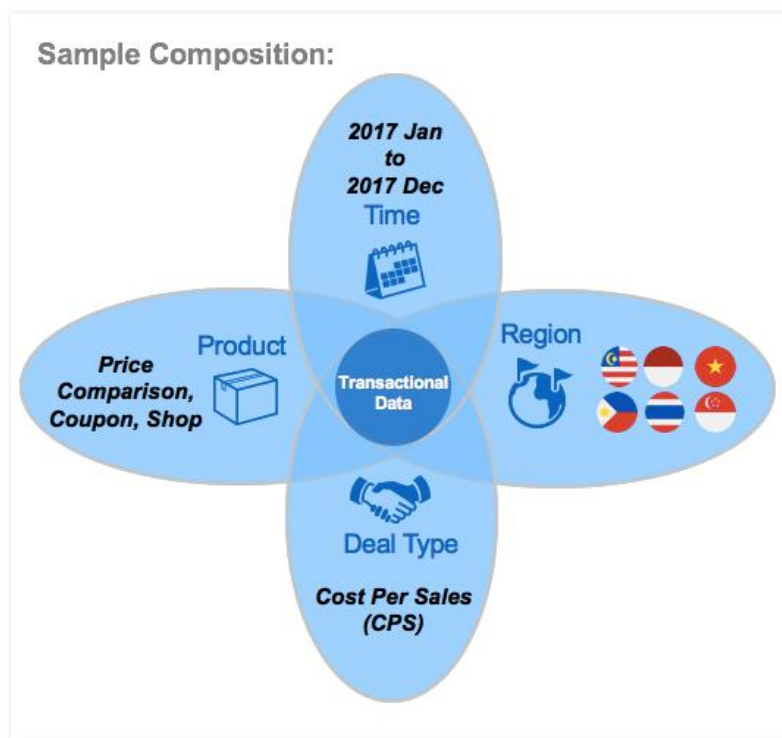
Source: Author, April 2018

In total, 229,809 consumers made 297,001 orders and purchased 477,268 items from 385 e-venders in the sample. The products in the sample spread all categories and brands, mainly in fashion & beauty (e.g., clothes, cosmetics, shoes), travel & accommodation (e.g., plane tickets, Uber), and electronics (e.g., digital gadgets). The order value was automatically converted into US Dollars ($) from the local currency based on real-time exchange rates on the server. Time

in the dataset was recorded based on local time; no time difference adjustment is needed. Based on the I.P address, each visitor was assigned a unique user ID. A consumer who bought several products under the same user ID and time frame would be aggregated into one order.

Demographic and lifestyle data is not available in the dataset due to privacy protection of the consumers. However, considering the sample size, this dataset should still be representative and fulfill the research purpose. As for merchant type, we distinguished two main categories: international merchants who only ship products to the target country from abroad, and local players who have resource deployment (e.g., office, warehouse) and operate from the target country. Because the types of promotions in the e-vendors varied a lot, the research did not include the effects of promotions.

Figure 17 Calculation Method

Methods of Calculating Metrics:		
	C Order Based ✓	**D** Merchant Based
Description	Every order counts as 1	Every merchant counts as 1
Average Order Value	$= \dfrac{\sum Order\ Value\ in\ ID}{\sum \#\ of\ Orders\ in\ ID}$	$= \dfrac{\sum Individual\ Merchant's\ AOV}{\sum \#\ of\ Merchants\ in\ ID}$
Conversion Rate	$= \dfrac{\sum \#\ of\ Orders\ ID}{\sum \#\ of\ unique\ clicks\ in\ ID}$	$= \dfrac{\sum Individual\ Merchant's\ CR}{\sum \#\ of\ Merchants\ in\ ID}$
Order Distribution	$= \dfrac{\sum \#\ of\ Orders\ in\ ID}{Average\ of\ Orders\ in\ ID}$	*Not Applicable*
Pros&Cons	Easy to get but can be biased by a big merchant	Heavily influenced by outlier but more accurate

Source: Author, April 2018

The data were analyzed using Microsoft Power BI. It provides interactive visualizations with self-service business intelligence capabilities, where end users can create reports and dashboards intuitively (Microsoft, 2018). Four metrics (Average Order Value, Conversion Rate, Coupon Usage and Order Distribution) and three dimensions (country, time, device) were derived from the dataset. Together they can form different measurements (e.g. Conversion Rate by Country) that reflect consumer behavior in the region with different levels of granularity. There are two calculation methods for metrics (see Figure 17): Indonesia was set as an example and an "order based" method was selected.

The metrics were calculated according to function below:

$$AOV(\text{Average Order Value}) = \frac{\sum Order\ Value}{\sum Number\ of\ Orders} \tag{1}$$

$$CR(\text{Conversion Rate}) = \frac{\sum Number\ of\ Orders}{\sum Number\ of\ Unique\ Clicks^1} \tag{2}$$

$$OD\ (\text{Order Distribution}) = \frac{\sum Number\ of\ Orders}{Average\ of\ Orders} \tag{3}$$

$$MC\ (\text{Mobile Contribution}) = \frac{\sum Number\ of\ Unique\ Clicks\ from\ Mobile\ Device}{\sum Number\ of\ Unique\ Clicks} \tag{4}$$

$$\text{Average Conversion Rate (ACR)} = \frac{CR_{TH}+CR_{VN}+CR_{MY}+CR_{PH}+CR_{SG}+CR_{ID}}{6} \tag{5}$$

CR= Conversion Rate; TH=Thailand; VN=Vietnam; MY=Malaysia; SG=Singapore; ID= Indonesia

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[1] Unique Clicks: A click from a single user; duplicate clicks by a single use do not affect the total (Benchmark, 2018).

3.3 Survey Research

Computer-assisted web interviewing (CAWI) was used to collect data for quantitative research. An online survey containing 35 questions (see Appendix 1) regarding perceived risk and trust in Southeast Asia was created on Google Forms. The survey result was analyzed by Microsoft Power BI. The survey was shared on different social media platforms (Facebook posts and groups, LinkedIn posts, Whatsapp messages) and online forums.

134 respondents took part in the research and the study is based on a sample of 124 validated respondents who have bought products/services online at least once in Singapore, Malaysia or the Philippines (excluding purchases in the business to business context). The survey was created in English, since most of the population in the countries mentioned above speak English: leading by Singapore (83.1% in 2015)[2], following by the Philippines (63.73% in 2000)[3] and Malaysia (62.57% in 2016)[4]. A randomized test group of five Malaysian consumers living in the Czech Republic and Germany pre-tested the survey (see Appendix 2), their feedback resulted in the refining of ambiguous wording and formats. To reduce the common method bias, semantic differential scales and 7-point Likert-type scales were used (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Figure 18 Research Model
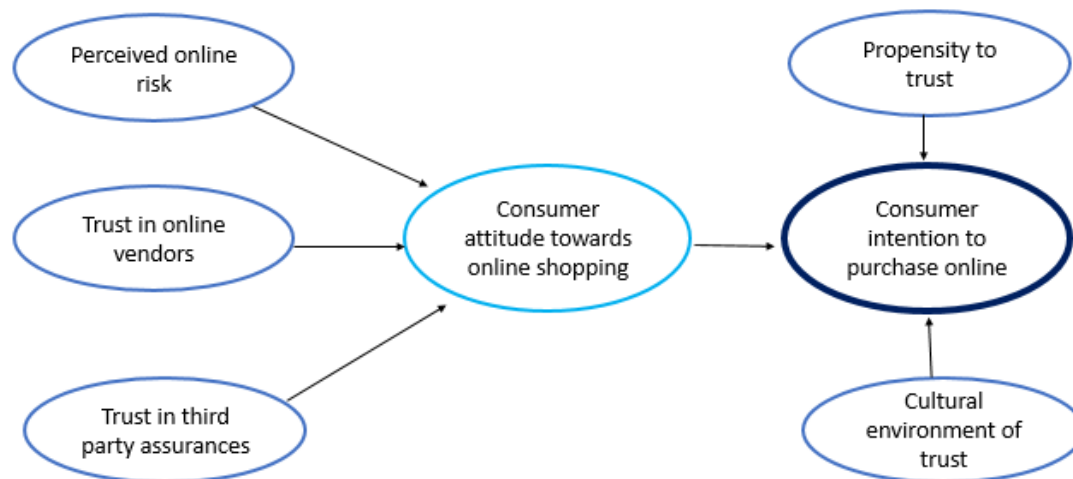
Source: Author, April 2018; Bianchi & Andrews, 2012

Based on TAM and TRA (see figure 18) discussed in Chapter 2 and Bianchi & Andrews' research in 2012, the author measured trust in the online environment ("perceived risk") and "trust in online vendors". Also included is "trust in third-party assurances", "consumer propensity to trust", and the "cultural environment of trust". The variables were treated as antecedents that influence post-adoption "attitude" and "intentions" to continue purchasing online.

The survey started with a question to check respondents eligibility. Only consumers who selected "Yes" could proceed to the following parts of the survey, ensuring post-adoption behavior being studied. The first part included six behavioral questions: respondents were asked to answer these questions based on their previous online shopping experience, measuring the geographical location of consumers, total spending on online shopping, the frequency of purchasing, payment preference, frequently purchased categories and popular e-vendors.

The second part contains 20 attitudinal questions based on Bianchi & Andrews' research in 2012. One question was used to measure consumer intentions to continue shopping online. Consumer attitude towards online purchase was measured with five items using multiple-choice grid. Perceived online risk was measured by five items such as concerns about privacy, fake products or payment methods. The constructs trust of e-vendors (characteristic of trustor) were measured from six items including reputation, size, channel and return policy of e-vendors. Trust in third-party assurances (e.g. consumer laws, logistics) were measured by three items with one graphical aid. Consumer propensity to trust and cultural environment of trust were each measured with two. All items used the seven-point Likert Scale, with benchmarks from 1=totally disagree to 7=totally agree.

The third part contained questions regarding basic demographic characteristics, including age, gender, nationality, education level, occupation etc. Respondents were asked to provide a valid email address if they would like to know the result of this research. They were also encouraged to give feedback and comments at the end of the questionnaire.

A proportional quota sampling method was chosen to represent the major characteristics of the population by sampling a proportional amount of each (Social Research Methods, 2018). In the proportional quota sample, the sample was first segmented into several mutually exclusive sub-groups. Then each segment of the sample followed a specified proportion. In this research, the online population's[5] gender and age structures in Singapore, Malaysia and the Philipines were used as specified proportions.

The sample comprised 52% males and 48% females with 100% having at least bought products/services online once. The sample consisted of 38 (SG), 41 (PH) and 45 (MY) valid responses. The demographic characteristics of the participants in each country can be found in

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[5] Facebook user's demographic structured in 2017 (see Appendix 3) are used because of high penetration of social media and dominance of Facebook in Malaysia, the Philippines and Singapore.

Table 5. In addition, most the respondents were young (94% <40-year-old), single (71% Single without children, 2% Single with children), well-educated (65% bachelor, 25% master) and employed (69% employed).

Table 5 Demographical Result

		Singapore		Malaysia		Philippines		Total	
		n	%	n	%	n	%	n	%
Gender	Male	20	53%	25	56%	19	46%	64	52%
	Female	18	47%	20	44%	22	54%	60	48%
Age	21-25	11	29%	13	29%	13	32%	37	30%
	26-30	14	37%	19	42%	15	37%	48	39%
	31-35	10	26%	9	20%	5	12%	24	19%
	36-40	2	5%	2	4%	3	7%	7	6%
	41-45	0	0%	1	2%	2	5%	3	2%
	46-50	0	0%	0	0%	2	5%	2	2%
	51-55	1	3%	1	2%	1	2%	3	2%
Marital Status	Single no children	30	79%	32	71%	26	63%	88	71%
	Single with children	1	3%	1	2%	1	2%	3	2%
	Partnered w/o Children	4	11%	6	13%	4	10%	14	11%
	Partnered with Children	3	8%	6	13%	10	24%	19	15%
Education Level	Secondary School	1	3%	0	0%	0	0%	1	1%
	High School	2	5%	1	2%	5	12%	8	6%
	Bachelor	23	61%	31	69%	27	66%	81	65%
	Master	12	32%	12	27%	7	17%	31	25%
	Other	0	0%	1	2%	2	5%	3	2%
Employment	Student	10	26%	5	11%	6	15%	21	17%
	Employed	25	66%	36	80%	26	63%	87	70%
	Unemployed	1	3%	1	2%	5	12%	7	6%
	Freelance	2	5%	3	7%	3	7%	8	6%
	Other	0	0%	0	0%	1	2%	1	1%

Source: Author, April 2018

3.4 Content Analysis

To gain a better understanding of the e-commerce landscape in Southeast Asia (see Figure 2, Figure 3 and Figure 5), the author firstly analyzed the most popular shops on the iPrice website in Singapore, Philippines, Malaysia. Then the same methodology was used in iPrice to research Vietnam, Indonesia and Thailand. A sample of 300 websites (50 websites per country) was

used. The 50 shops with the highest SimilarWeb index and number of unique clicks (between June 2016 and June 2017) were identified in each country, both from iPrice partner shops and other shops.

Table 6 Items in Content Analysis Items

Measurement	Items	Definition
Payment Methods	Credit Card	Use credit card credential to buy, including platform like PayPal.
	Bank Transfer	Transfer money through ATM or online banking to seller's bank account.
	Cash on Delivery	Pay upon buyer receives products.
	Offline POS	Offline point-of-sale, such as pay in post office, convenience stores (7-11).
	Installment	Buy and use the product first then pay spread a period of time.
Delivery[6] Options	Free Delivery	Free for most items and situations
	Free Above Certain Amount	A minimum order value before offering free delivery
	Paid	Flat-rate charge
E-vendor Type	Fashion	Clothes, shoes
	Electronics	Digital gadgets and home appliances
	General	Online marketplace (e.g. Lazada, AliExpress), grocery
	Cosmetic	Personal care, make-up, perfume

Source: Author, April 2018

The research investigated popularity of payment options and delivery options offered by e-merchants, as well as the type of e-merchants. The author firstly registered on the website; then logged in and picked a product to buy at random; followed instructions on the website, and landed on the payment page and the delivery options page of the online store. According to the content of these pages, the author filled "0 = Not Provided" or "1 = Provided" on items on the checklist. Desktop research and a pre-test of 15 e-vendors in each country were conducted to validate items on the checklist with a precise definition (see Table 6).

3.5 Limitations of the study

The research was conducted only targeting business-to-consumer e-commerce and post-adoption behavior of consumers. Six countries' data (Singapore, Philippines, Malaysia, Thailand, Vietnam and Indonesia) were selected as a representative of Southeast Asia.

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[6] If a merchant offers than one delivery options, the one covers most of situations will be chose.

One of the limits is the calculation method in data mining, because dominant e-vendors who sold more items or had more orders could potentially fluctuate the final result. However, consumer made a choice to shop with them independently. Thus the result genuinely reflected consumer's preference in the market. Besides, the external environment of e-commerce is constantly evolving in Southeast Asia, so the actual situation might change across time periods. The result from data mining and content analysis was from 2017 while survey research was conducted in March 2018. For the content analysis, it is highly possible that the list of top 50 e-commerce websites changed on the SimilarWeb index.

Due to the language barrier, only three English speaking countries (Malaysia, Singapore, Philippines) were included in the survey. Thus, the non-English speaking populations were not covered in the study. The questionnaire was only distributed online to respondents, because of budget constraints. Moreover, 134 participants took part in the research; their opinions could be more representative with a larger sample size. Even though the survey was distributed regardless of socio-economic class, almost all the respondents had a university degree and employment, so the results could vary for different social classes. Lastly, the sample is composed based on Facebook user's age and gender structure due to a high level of social media penetration (see Figure 1) and dominance of Facebook in Southeast Asia. Thus, the research findings may not apply to an online consumer who does not own a social media account.

4 Research Findings

Chapter 4.1 includes findings from data mining and "Section A" of the survey, while Chapter 4.2 contains finding from "Section B" of the survey.

4.1 Online Purchase Behavior in Southeast Asia

4.1.1 Conversion Rate and Average Order Value

Among the most important metrics for any eCommerce operator is their conversion rate (iPrice, 2017). Conversion rate (CR) reflects both the quality of a company's marketing activities and the website's effectiveness (iPrice Group, 2018). By definition, conversion rate is the percentage of users who take the desired action (Nielsen, 2013). In the path-to-purchase, conversion rate is the percentage of customers moved from one stage to another stage. To be more specific, it is the percentage of visitors that turn into a product purchaser in online shopping. Improving conversion rate can have a dramatic effect on the bottom line and profitability of a business (iPrice Group, 2018).

Figure 19 Conversion Rate[7] by Device
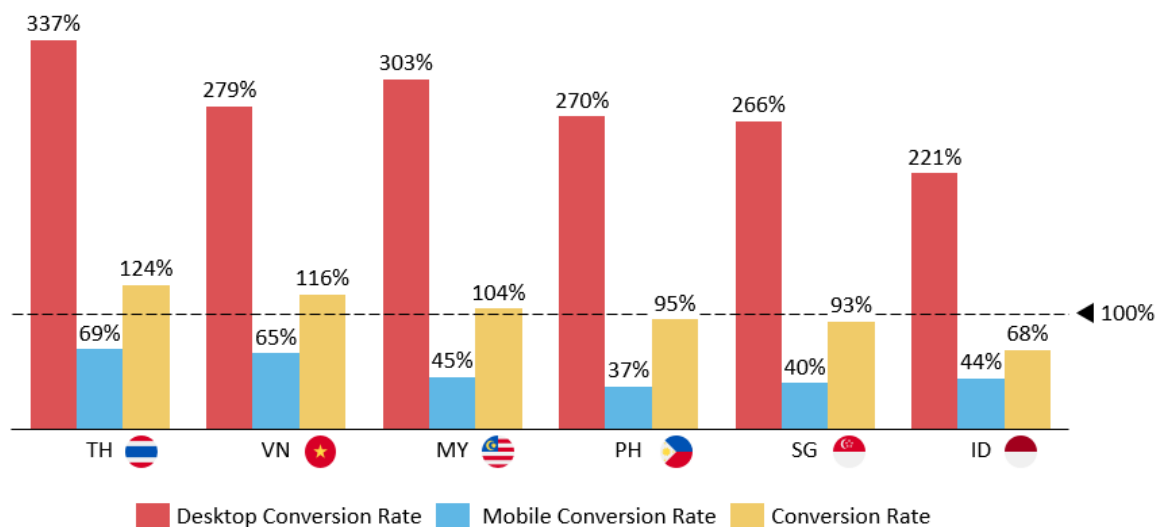
Source: Author's analysis based on iPrice Dataset, April 2018 ($N_{Merchant}$=385)

Figure 19 used the Average Conversion Rate in Southeast Asia (ACR)[8] as a reference (100%), revealing the relationship between conversion rate and device type (Desktop/Moblie) in each country. E-vendors in Thailand were leading the way in conversion, with a conversion rate 24% higher than the average. Vietnam ranked the second highest in conversion rate, Malaysia was closely behind, whereas the Philippines, Singapore and Indonesia were lagging behind the

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[7] See page 38, formula (2)

[8] See page 38, formula (5)

average. Linking with what we discussed in Chapter 1, there were no significant correlations between the maturity of the e-commerce market and conversion rate.

There was a substantial gap between Desktop Conversion Rate (DCR) and Mobile Conversion Rate (MCR). On average, DCR was 4.6 times higher than MCR in the region. In the Philippines, the desktop CR was 6.2 times higher, while in Thailand desktop is only 3.3 times higher. The conversion rate is closer to the MCR in every country due to the large portion of mobile traffic. Moreover, the lower gap between DCR and MCR was probably one of the causes for the highest conversion rate in Thailand.

The distinctiveness of mobile/desktop user experience and usage scenarios might have caused the huge gap between MCR and DCR. Mobile sites are usually designed to be highly accessible no matter where and when; customers typically use it during fragmented time periods like while commuting and waiting in line, browsing quickly and killing time without specific purchase intention. They can end the session anytime or get distracted. According to TRA, if the behavioral intention is low, the possibility of executing the action would be low correspondingly. Nevertheless, desktop sites are commonly filled up with abundant information and able to provide more functionalities; customers normally use it in a more private environment like the office or home with a certain degree of purchase intention. It is unlikely for them to get disturbed in a closed environment. Thus they tend to spend more time on the website.

Figure 20 Average Order Value[9] by Device
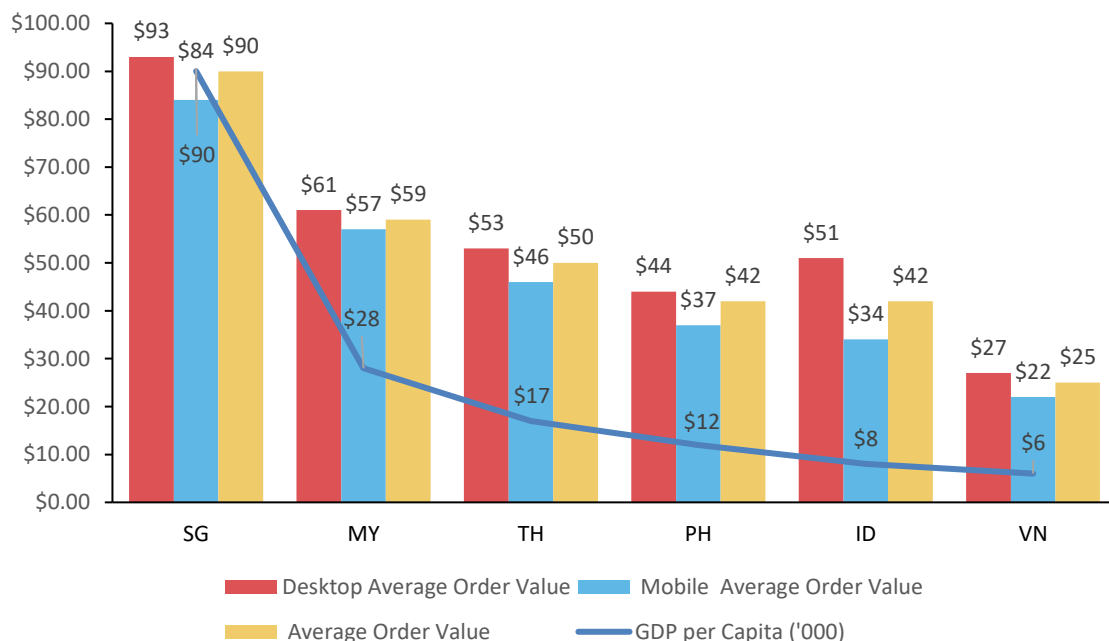
Source: Author's analysis based on iPrice Dataset, April 2018; IMF, 2017 ($N_{Merchant}$=385)

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[9] See page 38, formula (1)

Average Order Value (AOV) is an e-commerce metric that measures the average total of every order placed with a merchant over a defined period of time (BigCommerce, 2018). Sometimes it is also called as "basket size" and it has a huge impact on e-vendors profitability. For example, an online store sells three product at $10, $15 and $30 with an AOV of $12. This data may not describe profit or margin, but it can tell us consumers are not buying multiple items in the store and they prefer to buy cheaper products. Typically, expensive products have a higher margin. Increasing AOV means a better return on investment of a marketing campaign. In other words, higher AOV enables e-merchants to receive more revenue on the same level of marketing expense.

In Figure 20, we can observe that average order value is tied very closely to the GDP per capita of each country: the ranking of AOV exactly follows the ranking of GDP per capita. In Singapore, GDP per capita is the highest ($90,530) whereas it is the lowest in Vietnam ($6,880) in 2017. Correspondingly, AOV in Singapore reached $90, more than three times higher Vietnamese's AOV ($25). Similar to conversion rate, average order value is consistently higher on desktop than on mobile across the region. However, the absolute difference between Mobile Average Order Value (MAOV) and Desktop Average Order Value (DAOV) is not that significant, merely $1 or $2. One possible explanation for this is that when making large purchases, people are more comfortable sitting down to analyze and compare different products. People generally spend more time researching for large purchases, making them gravitate towards desktops when making a final decision.

Wolfgang Digital analyzed 87 million website session in 2016; they found out overall AOV in Europe is €209, approximately $255 (Coleman, 2016). AOV in Southeast Asia still has a great potential to increase. According to Matteo Sutto, CMO in iPrice Group, the biggest challenge compared to digital e-commerce Westerners is that in the SEA, the basket size is much lower; the lower the basket size, the harder it is to achieve sustainable profitability (Bragg, 2018).

4.1.2 Time of Purchase

Using the average number of orders in the country as reference (100%), we can observe the hours when consumers were more likely to make an order. According to Figure 21, the number of orders peaked between 9 A.M and 5 P.M in a day, when people were typically at work or school. The daytime online shopping peak in Vietnam was most significant: it almost doubled its daily average. There was a dip around 7 P.M for the evening commute and dinner time, before increasing late at night. Singapore differed from the other countries, peaking at 10 P.M when the working day had been completed. Singaporeans enjoyed evening shopping more than other nationalities in the region. This is possibly due to Singapore's hard-working culture, and inability to browse during working hours.

Figure 21 Orders Distribution[10] per Hour of the Day
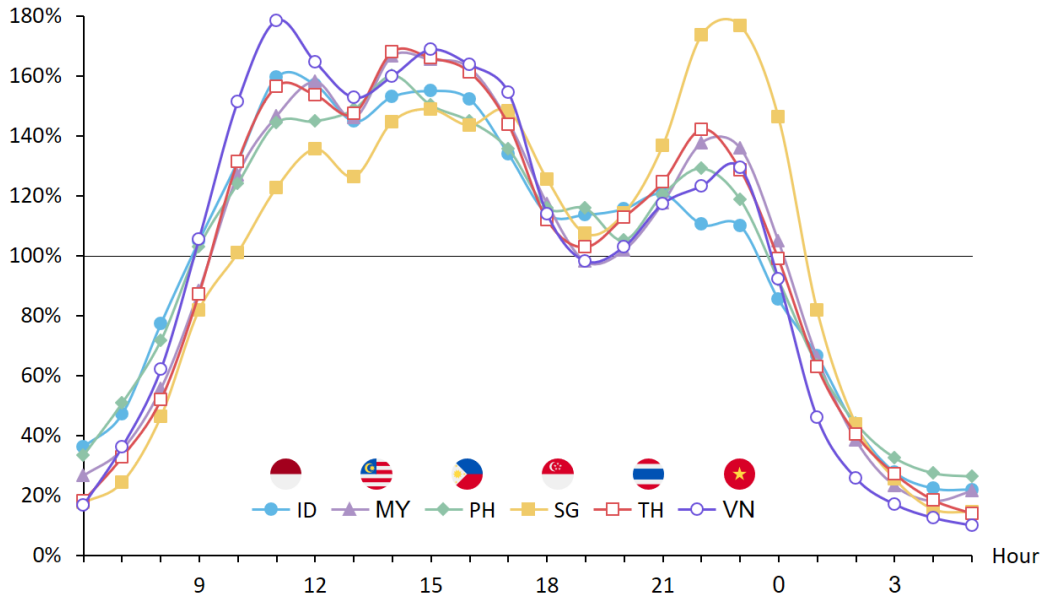
Source: Author's data mining based on iPrice Dataset, April 2018 ($N_{Merchant}$=385)

The high number of purchases in late morning and afternoon shows that many people buy during working hours when they have easy access to a computer. Otherwise, the number of orders is closely tied to how active the average person is, with high activity during the day and evening and low activity in the late night and early morning, when most are sleeping.

Figure 22 Conversion Rate per Day of Week
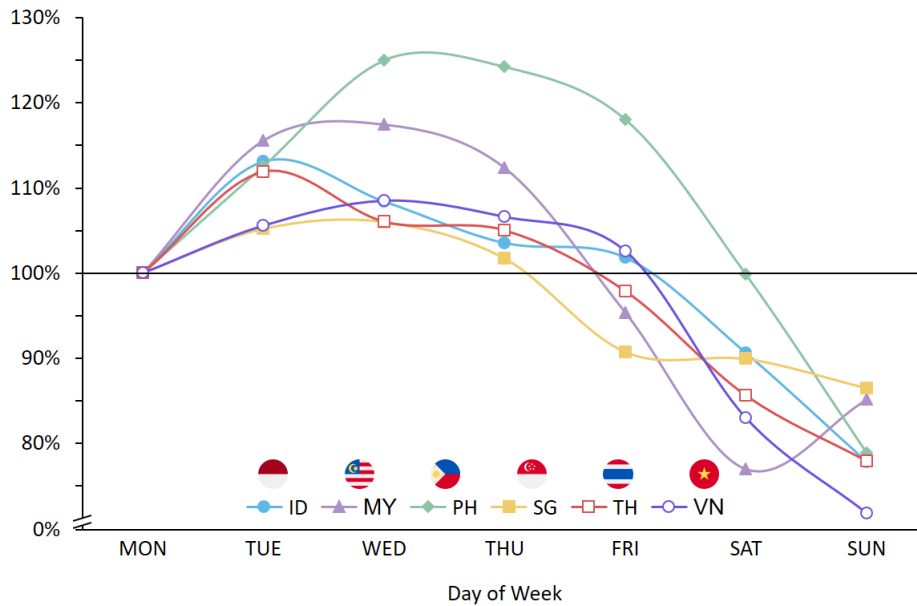
Source: Author's analysis based on iPrice Dataset, April 2018 ($N_{Merchant}$=385)

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[10] See page 38, formula (3)

Another consistent consumer behavior regarding time is CR by day of the week. Considering CR in Monday as the base value (100%); clearly, the conversion rate for users dropped up to 30% compared with base value on the weekend in Figure 22. The main factor in this trend is the large increase in the percentage of mobile users (see Figure 23). Those who browse on mobile are far less likely to convert, as previously shown (see Figure 19). This conversion rate drop is most drastic in Indonesia, where the percentage of mobile traffic exceeds 90% on the weekend. The peak conversion rate on Wednesday or Tuesday is possibly caused by an increased urgency to have products delivered by the weekend. It can raise 20% up, compared with the reference value.
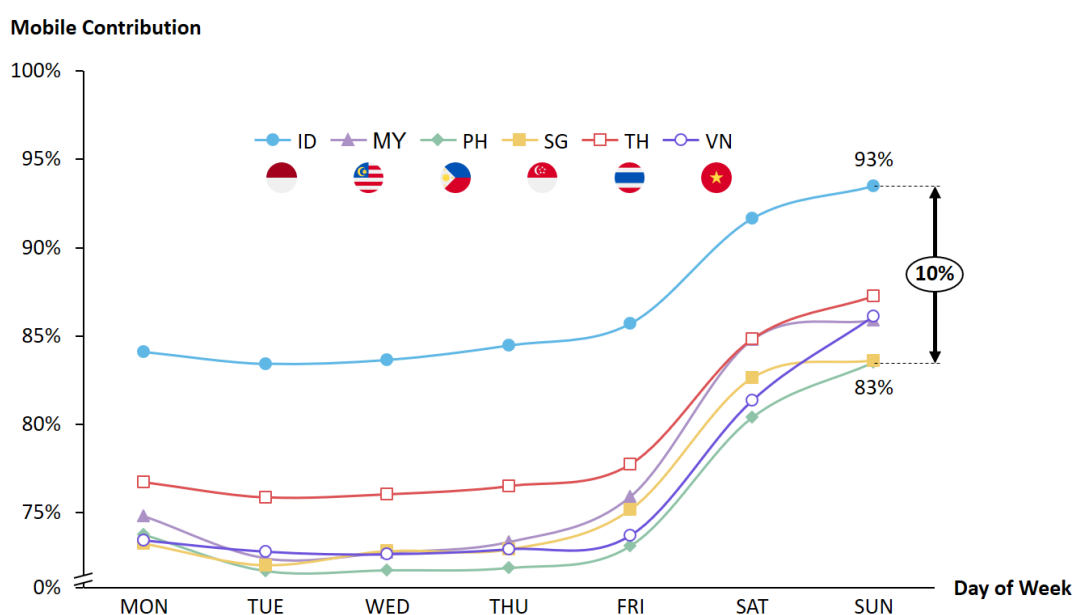
Figure 23 Mobile Contribution[11] by Day of Week

Source: Author's analysis based on iPrice Dataset, April 2018 ($N_{Merchant}$=385)

The share of mobile traffic remains remarkably constant throughout the working week. The large increase during the weekend is likely caused by people leaving their homes and offices, where their desktops are located. The lack of desktop access increases the reliance on smartphones, growing mobile traffic. There is a 10% difference between Sunday mobile contribution peak (SG: 93%) and dip (PH:83%).

Southeast Asia eCommerce is a mobile-first economy, leapfrogging all the Western economies when it comes to the importance of Mobile commerce in the traffic generated by each eCommerce operator (iPrice, 2017). In Figure 24, there has been a steady increase in mobile traffic over the past year from Q1 to Q3 across the region, probably caused by an increase in smartphone ownership. Also, improving internet and data speeds make it easier for people to

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[11] See page 38, formula (4)

browse on their devices. However, the contribution of mobile traffic reached an inflation point and appeared to drop down slightly between Q3 and Q4.

Figure 24 Mobile Contribution by Quarter
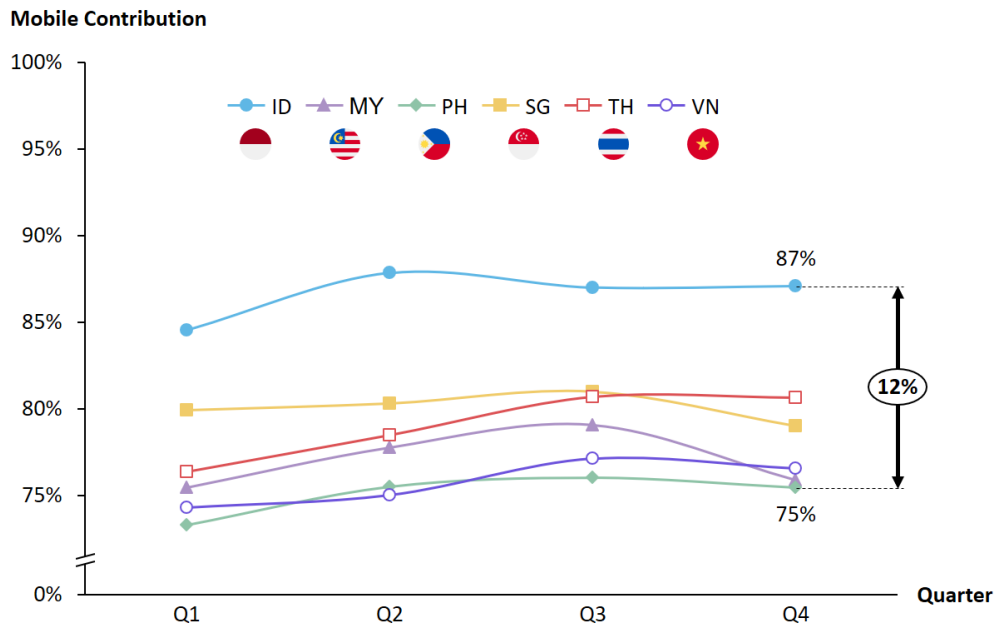
Source: Author's analysis based on iPrice Dataset, April 2018 ($N_{Merchant}$=385)

Leading the peak in Indonesia, which now has a staggering 87% share of mobile traffic by the end of 2017. Mobile contribution in the Philippines reached the lowest point (75%) in the region's Q4 metric. Moreover, nowhere in the SEA did desktop traffic account for more than 30% of web traffic.

4.1.3 Coupon Usage

Figure 25 Coupon Average Order Value
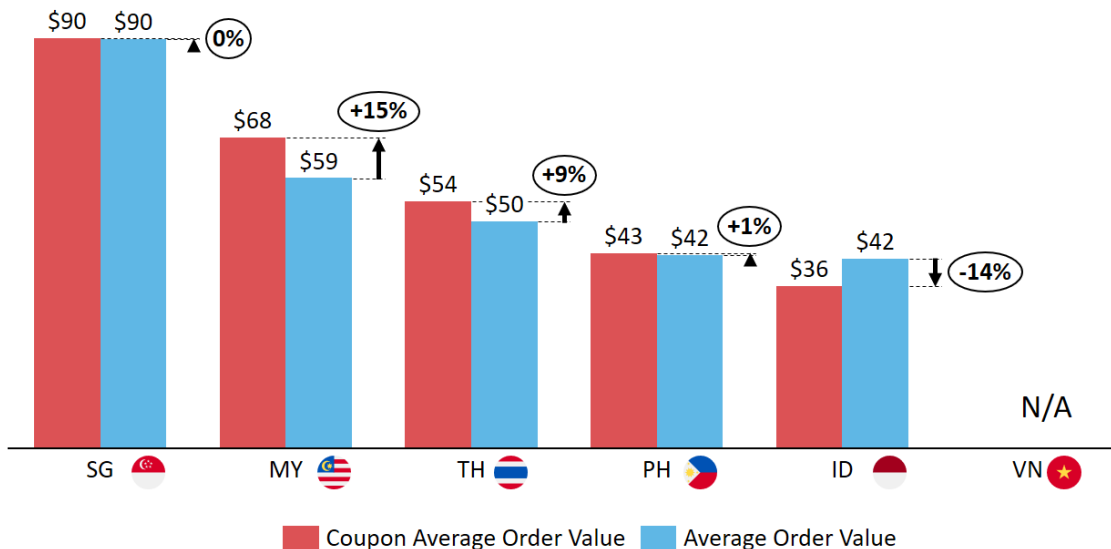
Source: Author's analysis based on iPrice Dataset, April 2018 ($N_{Merchant}$=385)

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Offering coupons to customers is a great way to get them back purchasing on your site (Bloom, 2017). Customers tend to shop again in the same shop when they are offered a coupon for repurchase; normally customers have to purchase above a threshold, in order to use or get the coupon (spend $50 and get 10% off for next purchase), increasing average order value of the merchant. In Southeast Asia, the effects of coupon vary across countries (see Figure 25): online shoppers in Malaysia and Thailand are more sensitive towards usage of coupons, causing an incline in average order value of 15% and 9% respectively. However, the power of coupons is less significant in Singapore and Philippines, only a 0-1% increase was caused by it. Surprisingly, coupons have made the average order value in Indonesia dropped by 14%; probably due to coupon thresholds being lower there.
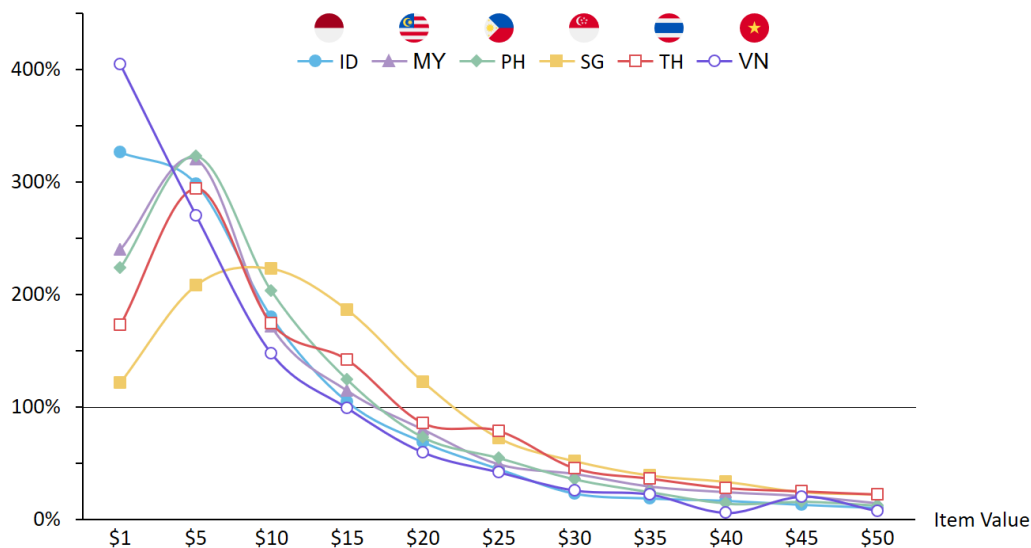
Figure 26 Popular Item Value Ranges to Use Coupon

Source: Author's analysis based on iPrice Dataset, April 2018 ($N_{Merchant}$=385)

Figure 26 provides some insights into the popular value ranges to use coupons in the region: item value before applying coupon was divided with a range of $5 and is represented on the X axis, considering the average number of couponed items with a value between 1$ to 50$ in each country as reference (100%), in Indonesia and Vietnam, online shoppers prefer to use coupons for small value items (1-5), while e-shoppers in the Phillipines, Malaysia, and Thailand tend to apply coupons for items between $5 to $10. In Singapore, $10 to 15$ is the range where people use coupons the most. The popularity of the value range could be heavily influenced by the price level of the country: living in a country with a high price index will increase the most popular value range to use coupons. Generally, as items become more expensive, the willingness to use coupons rises quickly, then it continually declines to a stable level.

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4.1.4 Popular E-vendors, Products and Payment Method

Figure 27 is a word cloud adapted from the frequency of online stores mentioned by respondents in the survey. For most of respondents, they have made online purchases from well-known local websites that operate across the region, such as Lazada (regional marketplace mentioned 61 times), following by that is AirAsia (regional budget airline mentioned 13 times); both Zalora (regional fashion store) and Shoppe (regional marketplace) were mentioned 12 times by consumers. International retailers such as Amazon and eBay were also mentioned by respondents, however, the frequency is much lower.

Figure 27 Popular e-vendors in Southeast Asia

Source: Author's analysis based on survey result, April 2018 (N=124)

Furthermore, three most frequently purchased online products or services categories are travel & accommodation (25%), fashion (23%) and electronics (17%) in general (see Figure 28); more than half of the respondents mentioned these three categories in the research. Except in Singapore, Travel & Accommodation is the most popular category in general. Survey results from the Philippines have similar trends compared with all responses. In Singapore, Fashion (30%) is the most popular category, following by Travel & Accommodation (21%) and Beauty (16%). In Malaysia, Electronics (27%) is the second most popular category instead of Fashion (16%).

Figure 28 Most Frequent Product/Services in Southeast Asia
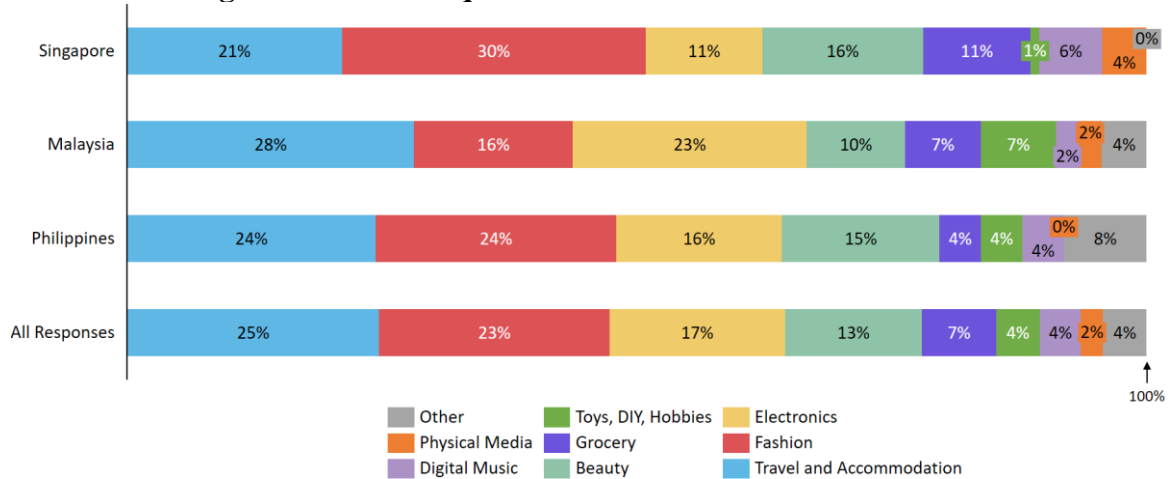
Source: Author's analysis based on survey result, April 2018 (N=124)

In Chapter 1, we have already discussed the popularity of payment methods offered by e-vendors in the ASEAN-6 (see Figure 2): Indonesia, Thailand, and Vietnam have high rates of bank transfers and cash on delivery. This is due to the low credit card penetration, making merchants more reliant on other payment methods. Since almost everyone in Singapore has access to a credit card, they can rely on this method of payment, and have not had to resort to cash on delivery and Offline POS.

Figure 29 Preference of Payment Method
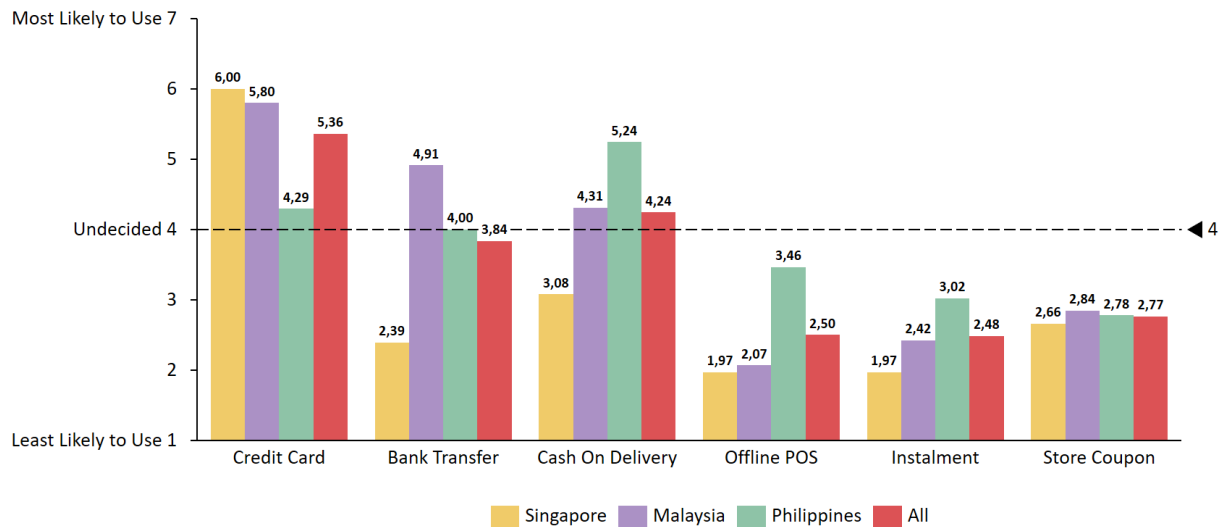
Source: Author's analysis based on survey result, April 2018 (N=124)

Corresponding to the content analysis in Chapter 1 about payment method offers, the survey research investigates the popularity of payment method from consumers' perspective. Consumers' preferences towards different payment method were measured by a semantic differential (1=least likely to use and 7=most likely to use). The average score for each payment method in the respective country is demonstrated in Figure 29. On average, credit card and cash-on-delivery are the only two payment methods favored by consumers (>4). Particularly,

Singaporean consumers prefer to use credit card more than any other payment method mentioned in the research. Even at the regional level, Singaporean customer favors credit card mostly strongly. Meanwhile, cash-on-delivery is the most favored payment method in the Philippines; credit card and bank transfer follow closely behind. Credit card is leading consumer payment preference in Malaysia, while their preference for bank transfer ranked first in the region. On average, payment by installments is the least preferred method in the region.

4.2 Perceived Risk and Trust in Southeast Asia

4.2.1 Statistical Attributes of Survey Result

The survey result was further analyzed by IBM SPSS Statistics. Cronbach's Alpha was used to ensure the reliability and validity of the research (see Table 7).

Table 7 Cronbach's Alpha Test

Constructs	α	Dimensions
PI: Consumer intention to purchase online	/	*PI. I plan to continue using the internet to purchase in the next six months.*
AO: Consumer attitude towards online shopping	0.865	*AO1-AO5. I believe using the internet to make purchase is... AO1 useful/ AO2 inexpensive/ AO3 effective/ AO4 not risky/ AO5 easy*
PR: Perceived online risk	0.612	*PR1. I feel safer using a credit card over cash-on-delivery [R]* *PR2. I feel safe to give personal details to an online store [R]* *PR3. I think buying online is riskier than other ways* *PR4. There are too many fake products sold online* *PR5. Online shopping has a bad reputation in my country.*
TE: Trust in online vendors	0.540	*TE1. I prefer to buy from large companies online.* *TE2. A good reputation is more important than lower price.* *TE3. I trust online stores with a more flexible return policy* *TE4. I prefer to buy from online stores which also have an offline presence.* *TE5. Interaction with a person makes me trust an online store more.* *TE6. I trust online stores with third-party certification more than those without.*
TT: Trust in third-party assurances	0.556	*TT1. I think third-party certification bodies are doing a good job.* *TT2. I think logistic companies are trustworthy in my country* *TT3. I feel protected by consumer law when purchasing online*
PT: Propensity to trust	0.626	*PT1. I tend to trust people and most things in my life.* *PT2. I tend to trust people and things even when I have little knowledge about it*
CI: Cultural environment of trust	0.800	*CI1. A high degree of trust exists in my family* *CI2. People in my community trust each other*

Source: Author's analysis based on survey result, April 2018 (N=124)

Furthermore, to satisfy the statistical contention of common method bias-variance, questionnaire items were recorded[12] to make all the constructs symmetric(Bianchi & Andrews, 2012). Table 8 is the mean, standard deviations and correlations of different constructs.

Table 8 Means, Standard Deviations, and Pearson Correlations[13]

	Mean	STD	PI	TE	TT	PT	CI	PR	AO
PI	6.08	1.08	1	-0.103	0.074	.281**	0.114	-.383**	.264**
TE	5.72	0.73	-0.103	1	.508**	0.020	0.160	.320**	-0.049
TT	5.23	0.98	0.074	.508**	1	.300**	.307**	-0.053	0.055
PT	4.02	1.26	.281**	0.020	.300**	1	.389**	-.243**	.182*
CI	5.17	1.33	0.114	0.160	.307**	.389**	1	-0.168	0.092
PR	4.19	1.04	-.383**	.320**	-0.053	-.243**	-0.168	1	-.225*
AO	4.93	1.34	.264**	-0.049	0.055	.182*	0.092	-.225*	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Source: Author's analysis based on survey result, April 2018 (N=124)

As demonstrated in Table 7, all the constructs are composed of different dimensions. Respondents give a score between 1 (totally disagree) to 7 (totally agree) on these dimensions, according to their previous experience with online shopping. Figure 30 shows the average score[14] for different constructs in each country.

Figure 30 Average Score of Constructs by Country[14]
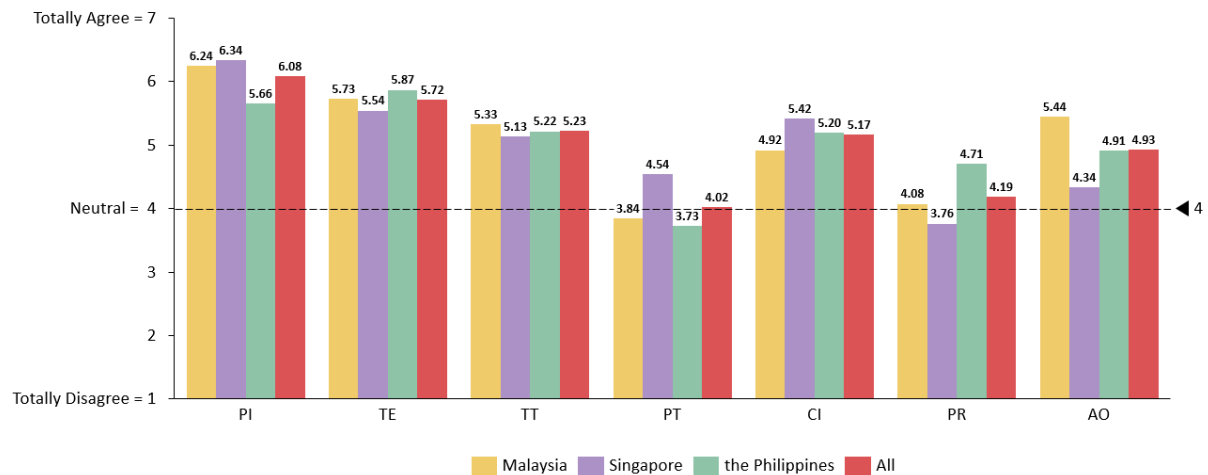
Source: Author's analysis based on survey result, April 2018 (N=124)

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[12] PR1 and PR2 are recoded items in this survey

[13] PI=Purchase Intention, TE=Trust in e-vendors, TT=Trust in third-party, PT=Propensity to trust, CI=Culture influence, PR=Perceived online risk, AO=Attitudes towards online shopping

[14] For example, Average Score of $TT = \frac{Average\ Score\ _{TT1}+Average\ Score\ _{TT2}+Average\ Score\ _{TT3}}{3}$

4.2.2 Purchase Intention and Attitudes

According to Figure 31, consumers in the region have a strong online purchase intention: 91% of respondents will continue to buy products/services online in next six months; nearly half of the respondents strongly agree to the statement (PI); merely 9% of respondents have second thoughts about continuing shopping online. As for online purchase intention in three countries: result in Malaysia follows the regional trend, while respondents in Singapore demonstrate the strongest online purchase intention: all of them agree with the statement (PI). However, respondents in the Philippin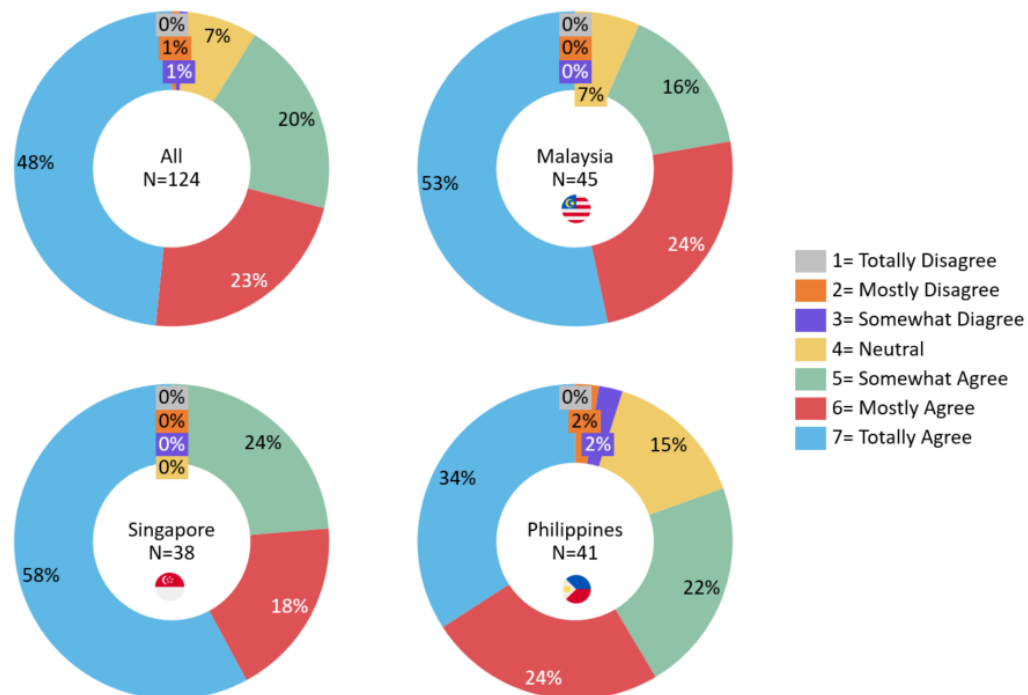es tell a different story: even majority(80%) of them have online purchase intention, 20% of respondents are generally concerned about online shopping and hesitant about continuing shopping online in the next six months.

Figure 31 Consumer's Purchase Intention in Next Six Months

PI: I plan to continue using the internet to purchase in the next six months.

Source: Author's analysis based on survey result, April 2018 (N=124)

The survey used five dimensions to measure consumer's attitude towards online shopping: useful, easy, effective, inexpensive and not risky. Respondents were asked to rate between 1 (totally disagree) to 7 (totally agree) of these dimensions. Figure 32 shows average score respondents gave on each dimension, thus reflecting their attitude towards online shopping. In regional level, respondents have mostly positive attitudes (useful, easy, effective and inexpensive) towards online shopping, except they believe online shopping is still risky. In country-specific level (see Figure 30), respondents in Malaysia (AO:5.44) are the most positive about shopping online, while Philippines (AO:4.91) in the middle and Singapore (AO:4.34)

being the most skeptical. In Malaysia, Useful (6.0) and Easy (6.1) scored the highest among five dimensions, same as in Philippines (Useful = 5.6; Easy = 5.8). However, Useful (4.8) and Effective (4.8) ranks top of all dimensions in Singapore.

Figure 32 Average Score of Consumer's Attitudes towards Online Shopping
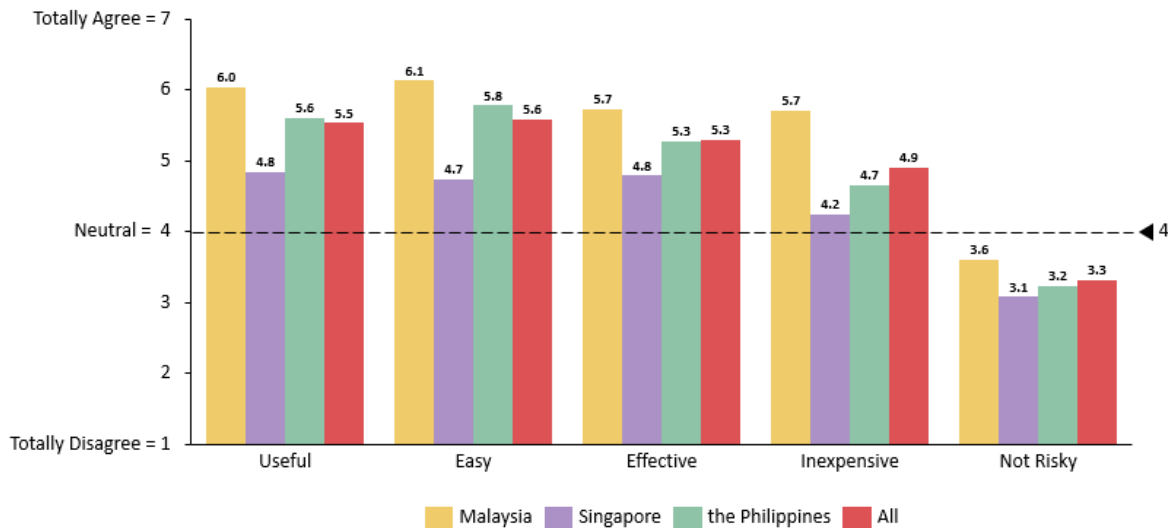
Source: Author's analysis based on survey result, April 2018 (N=124)

According to Table 11, consumer's attitudes towards online shopping is positively related to their intention to purchase. This finding is supported by TAM and TRA model, also a similar study on Chilean consumer (Bianchi & Andrews, 2012). Although all our respondents have purchased online at least once, they still think online shopping is risky. However, this perception of "being risky" is merely affecting consumer's attitude without hurting their intention to purchase online. Previous studies suggest that the more experience with online purchasing people have, the less risk they perceive on the internet in general (Bianchi & Andrews, 2012). In our study, the average online purchase frequency in 2017 is 14.88.

Figure 33 Average Score of Propensity to Trust and Cultural Influence

Source: Author's analysis based on survey result, April 2018 (N=124)

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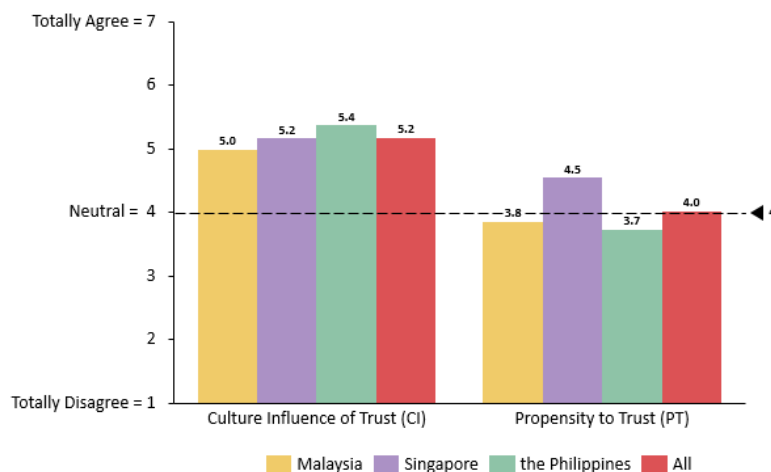
Moreover, the cross-cultural research suggests that in collectivist cultures there is a high propensity to trust insiders and higher levels of trust among their own culture (Bianchi & Andrews, 2012). In this research, a high score in culture influence of trust (CI) suggests respondent from that culture feels a high level to trust, while a high score in propensity to trust (PT) suggests the high likeliness to trust on an individual level. Culture influence of trust is measured from family (CI1) and community (CI2) dimensions, while propensity of trust is measured according to the level of difficulty for the respondent to trust someone in life (PT1) under different circumstances (PT2).

According to Figure 33, cultural influence to trust is indifferent in three countries. But the result shows respondents in Singapore has above-average propensity to trust. Furthermore, 1 reveals a positive relation between culture influence of trust (CI) and propensity to trust (PT); a positive relation between purchase intention (PI) and propensity to trust (PT) also exists.

4.2.3 Perceived Risk

Perceived risk is measured from five different dimensions (PR1 to PR5), a high score in one dimension indicates consumer has more concerns or feel riskier towards it (See Figure 34). Respondents expressed their concern about the existence of fake products in the online market (PR4) and risk related to using online shopping comparing with other methods (PR3); however, they are less concerned about sharing personal date (PR2), using credit card (PR1) and the reputation of online shopping (PR5).

Figure 34 Average Score of Perceived Risk from Different Dimensions
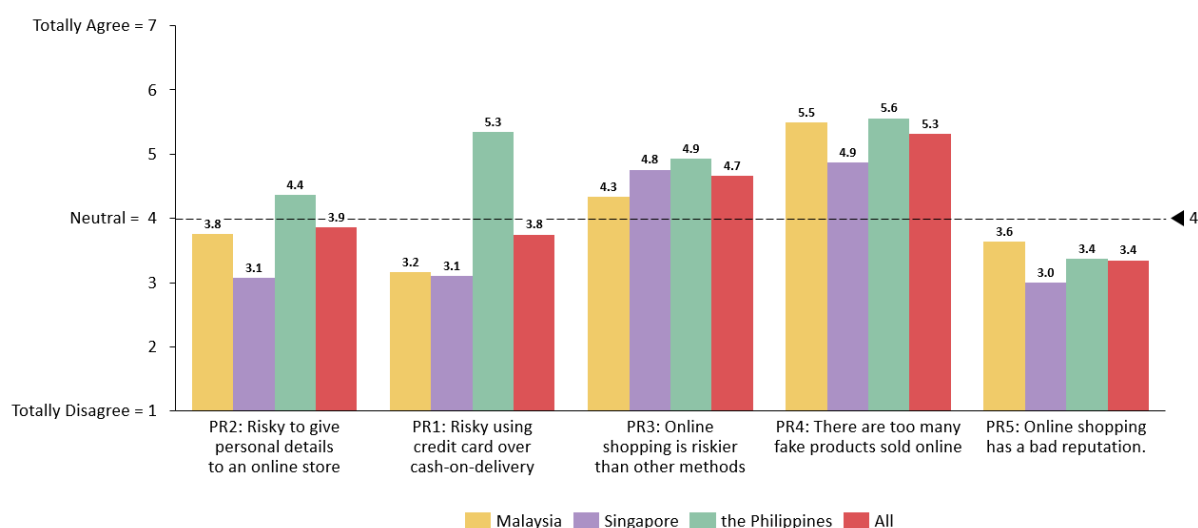
Source: Author's analysis based on survey result, April 2018 (N=124)

Figure 35 gives a more detailed view into PR1 to PR5, showing the distribution of respondents opinion for each dimension under perceived risk. PR1 is about consumer's perception towards

privacy: respondents' in the Philippines have greater concern about their data and would rather not share it with online stores because around half of Filipino respondents do not feel safe to share their personal data with online stores, whereas Singaporean respondents are more generous about sharing their personal data, only 16% of respondents expressed their cautiousness.

Figure 35 Perceived Risk from Different Dimensions
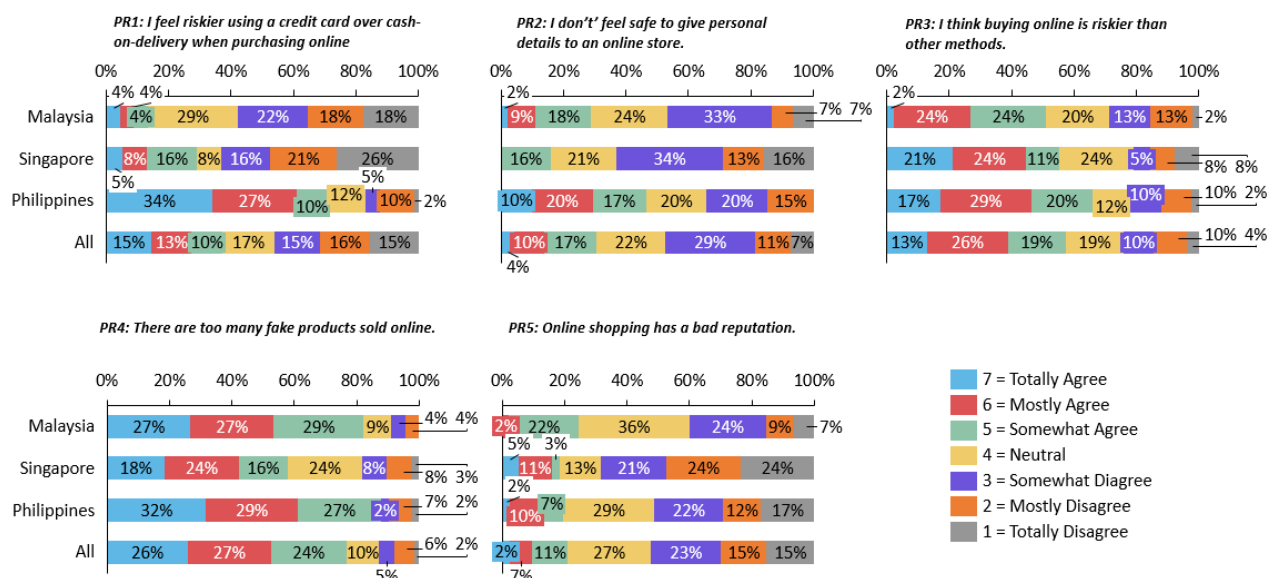
Source: Author's analysis based on survey result, April 2018 (N=124)

PR2 measures perceived risk in payment method, especially in credit card vs cash-on-delivery: Filipino respondents suggest using cash-on-delivery is far less risky than credit card (71% of respondents in the Philippines agree using credit card is riskier than cash-on-delivery), corresponding to Figure 29, where cash-on-delivery is the most prefered payment method among respondents living in the Philippines. However, respondents in Malaysia and Singapore prefer to use credit card the most (see Figure 29), they are less concerned about risk in using credit card.

PR3 measures risk in online shopping than other shopping methods: the result is relatively stable across countries, 58% of total respondents expressed their concern about shopping online. PR4 suggests authenticity of product sold online: it is undoubtedly the primary concern of online consumers across countries, 77% of respondents agree that there are too many fake products in the online market. Nevertheless, respondents in Singapore (56%) believes there are less fake products than respondents in the Philippines (88%).

Lastly, PR5 indicates the reputation of online shopping: only 20% of respondents agree with that online shopping has a bad reputation in their country. However, a large percentage of respondents in the Philippines (29%) and Malaysia (36%) are in the neutral position about

online shopping's reputation in their country, whereas merely 13% respondents are neutral in Singapore.

In a nutshell, based on Figure 30, perceived risk is highest in the Philippines (PR:4.71), following by Malaysia (PR:4.08) and lowest in Singapore (PR:3.76). It is well-known that Singapore has a fully developed legal system, as well as a highly regulated market, leading to a much lower risk perception of online environment. According to Table 11, perceived risk (PR) is negatively related to attitudes towards online shopping (AO), purchase intention (PI) and propensity to trust (PT).

4.2.4 Trust in E-vendors and Third-parties

Six dimensions (TE1 to TE6) are used to measure trust in e-vendors (TE). The average score of each dimension in different countries is demonstrated in Figure 36. The higher the average score is, the more convincing consumers are towards statements of the dimension. Respondents from all countries tend to agree with the statement (>4) from TE1 to TE6: they prefer to buy from a larger online store with a good reputation and more flexible return policy; Interaction with customer service personnel and offline presence is also essential for respondents to trust online stores. Lastly, certification from a third-party issuer can make the e-vendor more trustworthy. Within six dimensions, respondents agree with "TE1: I prefer to buy from large online stores" the most, whereas they agree with "TE4: I prefer to buy from online stores which also have an offline presence" the least.

Figure 36 Average Score of Trust in E-vendors from Different Dimensions
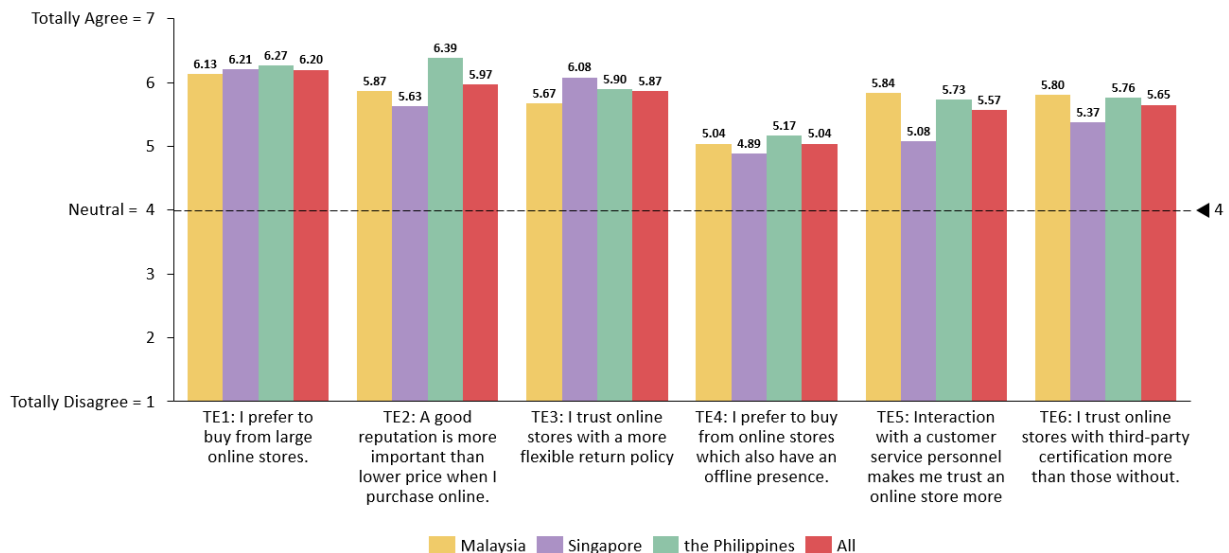
Source: Author's analysis based on survey result, April 2018 (N=124)

Figure 37 provides more insights on the distribution of respondents' choice about trust in e-vendors. TE1 is one of the most critical dimensions in trust towards e-vendors, the result fluctuates little in three countries: more than 90% respondents in all countries expressed their

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preference towards large online stores, around 50% of respondents even choose the term "totally agree".

Figure 37 Trust in E-vendors from Different Dimensions
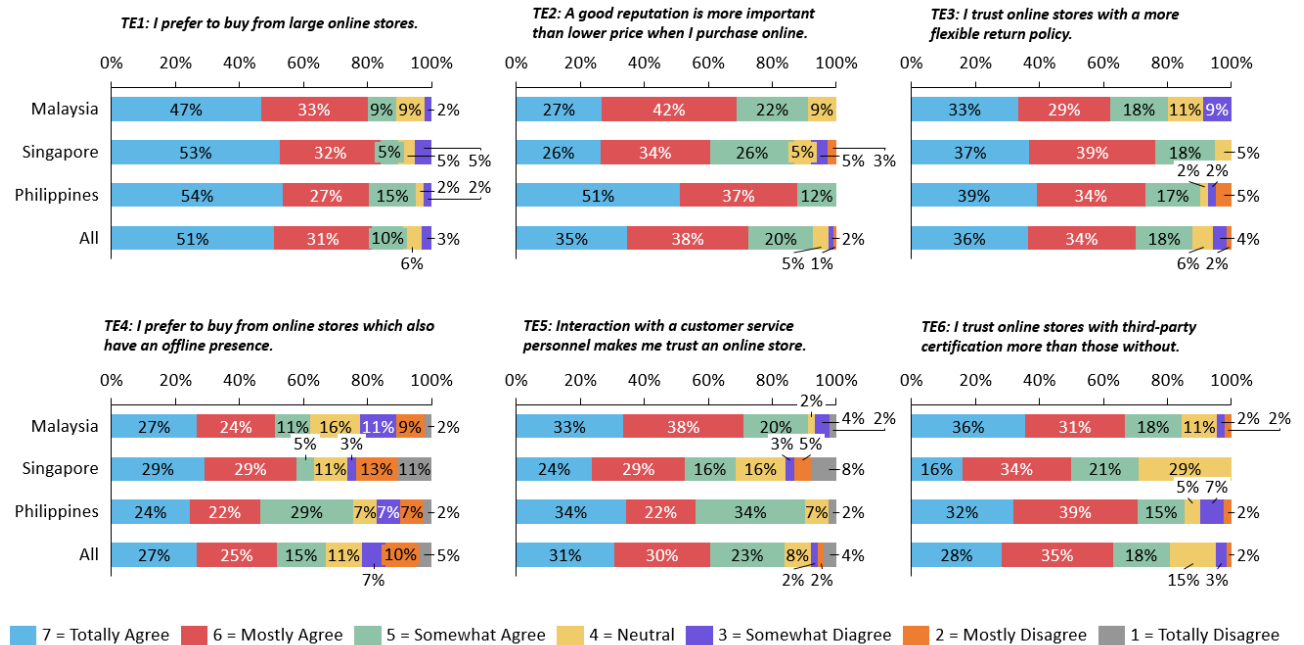
Source: Author's analysis based on survey result, April 2018 (N=124)

A good reputation (TE2) plays the second important role in consumer's decision process: roughly 90% of respondents claims that reputation is more important than lower price. The effect of reputation is even stronger in the Philippines, 100% agree with the statement in TE2, in which 51% of them belong to "strongly agree" group, 15% higher than the result at the regional level.

Flexibility of return policy (TE3) may have signal effects to online shopper: a more strict return policy means higher opportunity costs for consumer, whereas a more flexible return policy conveys positive signals to consumers; since the merchants are not afraid of consumer returning product, they must be more trustworthy and ensure the quality of their products to avoid potential returning. Thus, resulting in a higher level of trust towards merchant. 88% of respondents agree that merchant with a more flexible return policy is trustworthy.

A multi-channel strategy (TE4) such as pop-up stores and other offline presence appears to be able to increase trust as well, but less effective compared with other dimensions: only 67% of respondents report they prefer to buy from online stores with an offline presence. As online shopping primarily interacts with machine/software, human interactions (TE5) such as live-chat can potentially increase trust towards online shopping according to the research result. However, only 69% of respondent in Singapore agree with the statement that "Interaction with a human makes me trust an online store", compare 91% of Malaysian respondents agree with

this statement. This suggests interaction with customer service personnel will not boost trust in Singapore.

Last but not least, third-party certification also influences consumer's trust towards e-merchant significantly (TE6). 81% of respondents report agreeing that putting these certifications on the website will definitely increase the level of trust among e-vendors. Nevertheless, 71% of Singaporean respondents agree with this statement, 10% below regional result, while the rest 29% of Singaporean respondents hold a neutral opinion against the statement.

Figure 38 Average Score of Trust in Third-parties from Different Dimensions
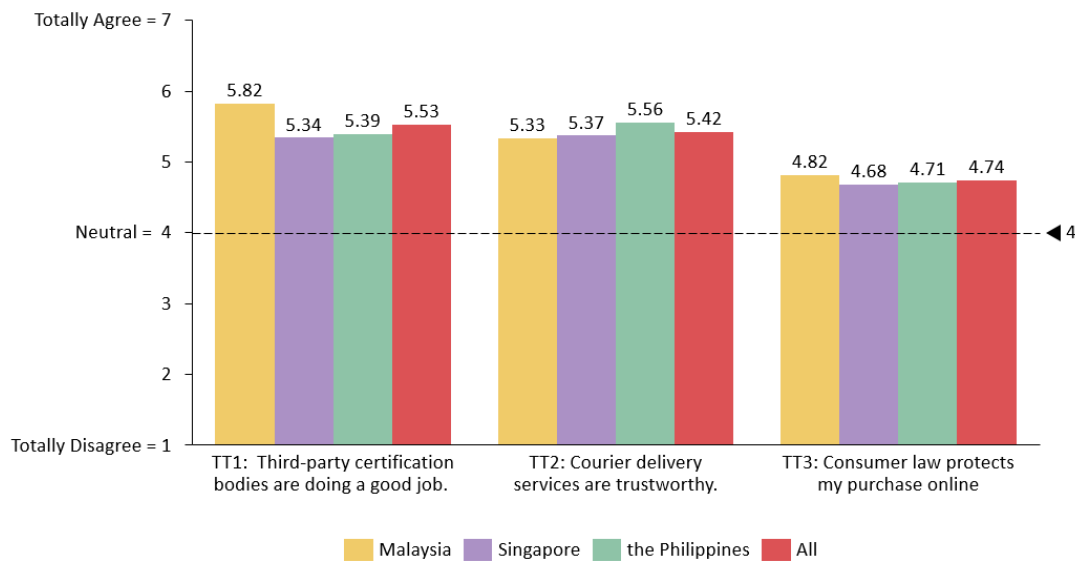
Source: Author's analysis based on survey result, April 2018 (N=124)

In the research, three dimensions are used to define trust in third-parties (TT): certification issuer(TT1), courier delivery service(TT2) and law enforcement(TT3). Figure 38 is the average score of TT1 to TT3. A high score means that respondents have the positive feeling on trust dimensions in third-parties. We can observe respondents are holding positive feeling from TT1 to TT3, but their feeling about consumer law is relatively lower.

Figure 39 Trust in Third-parties from Different Dimensions

Source: Author's analysis based on survey result, April 2018 (N=124)

67
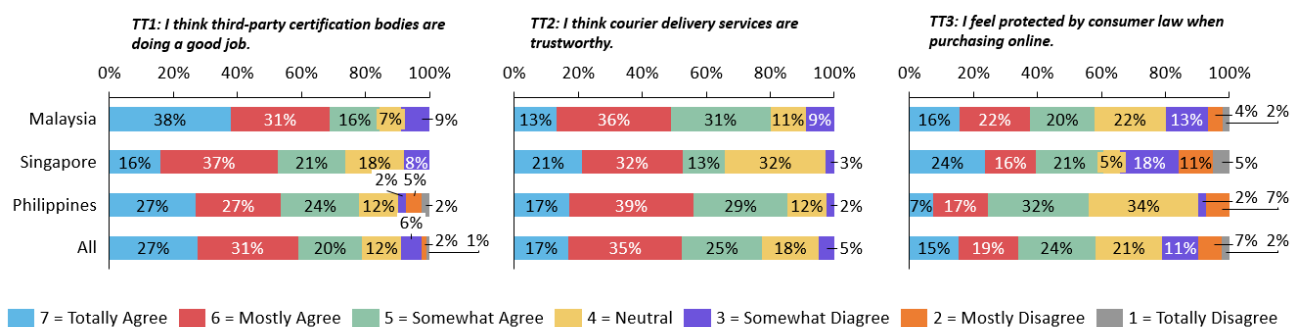
Figure 39 gives us more information about trust in third-parties from a more granular level. Previously, we have already found Singaporean respondents are more skeptical about e-vendor with third-party certification(see Figure37, TE6). It's correlated with low acknowledgment of third-party certification issuer's work (TT1); only 16% of Singaporean respondents used "strongly agree" to the statement that "third party bodies are doing a good job", whereas 27% of total respondents used "strongly agree".

TT2 is about respondents confidence level on logistic companies: 77% of the respondents agree that "courier services are trustworthy" and 18% of them stay neutral about the statement. Surprisingly, result from Singapore reports merely 66% of respondents are in favor of this statement, whereas 32% of them are in a neutral position. The finding tells Singaporean online consumer trust logistic company less than Malaysian and Filippino online consumer.

Lacking effective regulation, consumers have to trust the e-vendor from which they purchase assuming, in reality, that the e-vendor will be ethical and behave in a socially suitable manner, or else the overwhelming social complexity will cause them to avoid purchasing(Gefen, 2000). Before, we noticed respondents in Singapore reported a lower perception of online risk, in contrast, higher risk perception in the Philippines were observed (see Figure 30, PR). A negative correlation might exist between PR and TT3: 24% of Singaporean respondents strongly agree that they are "protected by consumer law when purchasing online", whereas it is solely 7% in the Philippines. Besides, 5% of Singaporean respondents and 34% of respondents in the Philippines are in the neutral position.

5 Recommendations

Fundings from various sources have increased competition in the region drastically. There is little time for companies to hesitate, to experiment, or to wait-and-see. In order to capture the opportunity, companies need to set clear goals, milestones and sustain great commitment. Furthermore, bear in mind that success is not achieved overnight; persistence and patience are essential along the journey to success. Apart from that, in a dynamic region like Southeast Asia, an agile approach is highly valuable, engaging directly with the user community and developing continuous enhancements. Agility not only enables companies to react quickly, but also to work in a scalable way both from the top-down and from the bottom-up.

To win in Southeast Asian e-commerce, it is crucial to have a holistic overview and understand the uniqueness of the region. The amount of traffic attained is certainly a key metric to measure performance, but the quality of it is even more important. If a company cannot convert their traffic into revenue, then all the effort is in vain. Thus, attracting online users with purchasing intention makes quite a difference.

As we learned above, a mobile network is the primary access point for online shoppers in Southeast Asia, but mobile speed is rather slow in most Southeast Asian countries. Moreover, we found out that mobile experiences still have a lot of room to improve, since conversion rates on mobile devices are much lower than on desktop. Decision-makers need to maintain a balance between the quality of their website and time to load: consumers do not have the patience to wait for a page to load; even one second can make a difference in terms of user experience. Besides, a high-quality and well-designed mobile/desktop website is another key success factor in the battle, implying a company's dedication and devotion to its customer. An app is not the guarantee of positive mobile experience. In fact, it might create more friction for users: they first need to find the app from app store, wait for download and installation, then create an account. The whole process could drain their patience and make them more likely switch to a competitor.

Travel and accommodation is one of the most frequently purchased categories in the region, closely followed by fashion and electronics. Apart from Singapore, most transactions are small amounts. This could be the main challenge for companies to achieve economy of scale. In order to increase average order value, companies should consider using coupons or creating hurdles for free delivery. For example, consumers only get free-delivery for orders above 20$. However, companies need pay attention to the types of coupons and their consumers' sensitivity towards coupons. Normally, coupons have a lot of terms and conditions: consumers have to spend more than a certain amount to apply a coupon, or they can only apply a coupon to their second purchase. As for sensitivity towards coupons, consumers are willing to spend more in Malaysia and Thailand if they can apply a coupon. In contrast, Indonesian consumers spend less money when using coupons. As a result, online stores need to choose coupon strategies wisely based on their operational goals: a company plan to boost brand awareness

should distribute coupons with minimum terms and conditions, but a company seeking to increase customer loyalty should give coupons that can be only used for subsequent purchases.

Consumer preferences and online stores' offering of payment method are also diverse in the region. Credit Cards are definitely the dominant payment solution in Singapore and Malaysia. Bank transfer is most preferred in Malaysia. In the Philippines, Vietnam and Thailand, cash-on-delivery is extremely popular. Companies should be cautious about these facts and implement payment solutions accordingly in their business model. Build on this, a careful choice of logistics partner would accelerate customer satisfaction greatly. Some players have already built their own logistic facilities to deliver items on time and in good condition. In addition, companies need to have a second thought when granting consumers free delivery. If they are constantly losing money on serving customers with small basket sizes, they should put a surcharge or set a minimum order value to qualify for free delivery.

E-commerce players in the Philippines should be aware of the above average perceived risk within consumers, because it can potentially harm their purchase intention. Among all the factors influencing perceived risk, companies should pay more attention to authenticity of products. They can leverage comments from other shoppers, show certification as an official retailer or distribute free sample for trial. Besides, companies should choose payment solution carefully to eliminate perceived risk; for example, online stores need to provide payment options more than credit card in the Philippines, even though it is the easiest payment solution to embed. Lastly, companies suppose to protect personal data in good manners. The recent incident of Facebook misusing its user's data certainly served as a wake-up call.

Price war is like a nuclear weapon: powerful, effective but it can also wipe everyone out eventually. Instead of battling over price, building positive brand image and brand association are more meaningful and sustainable. Many companies believe omnichannel strategy could increase consumer's trust. However, they should be more cautious about the effectiveness of this strategy. Particularly for small and medium-sized enterprises (SMEs), the cost related to offline presence may outweigh benefits it creates. In addition, the size of online stores plays an important role. A boutique-size online store only works for specific sectors; for most of online stores, it is either go big or go home. Moreover, consumer trust stores with a flexible return policy and third-party certification more than those without. Finally, personal interaction such as live chat can potentially increase trust as well.

Conclusion

The goal of this master's thesis was to identify purchasing behavior concerning online shopping in Southeast Asia, to assess how different factors could influence online consumer's perception about perceived risk and trust and to investigate the causes and reasons behind it.

E-commerce in Southeast Asia is certainly mobile dominant because around 80% of traffic is contributed by mobile devices. However, the development of mobilization in e-commerce seems to reach an inflection point. Meanwhile, customers heavily rely on mobile devices when browsing products, in weekend particularly. Even though mobile e-commerce is powerful, it is still a long way to maximize mobile user experience. On average, desktop conversion rate is 4.6 times as high as mobile conversion rate. This significant gap is possibly caused by difference in usage scenarios. Online shoppers mostly spend fragmented time to browse and get inspirations on their mobile devices, later they make a decision and use desktop devices to place an order in a more private environment.

Small average order value is one of the challenges for e-vendors in Southeast Asia. It is extremely hard to achieve sustainable profitability when consumers only purchase inexpensive items. The ranking of average order value correlates with GDP per capita in the ASEAN-6. Leading by Singapore with 90$ per order, whereas Vietnam comes lastly with a 25$ average order value. Besides, average order value on desktop devices is higher than on mobile devices across the region, merely 1$ or 2$ difference. One explanation is that people tend to sit down and research properly when purchasing more expensive items.

Hourly purchase peak suggests that consumers tend to shop online in late morning and afternoon in the region, exactly during working hours. It might be caused by easy access to the internet and unfragmented time. However, the order peak in Singapore comes later, around 10 P.M. when the working day is completed and people return home. This is probably due to Singaporean famous hard-working culture and limited access to work irrelevant websites.

Using coupons is very popular in Southeast Asia. E-vendors also prefer to distribute them because it is a way to increase average order value. Malaysian online shoppers would spend up to 15% more per order when applying coupons. However, using coupons in Indonesia can even decrease average order value up to 14%. In addition, as items become more expensive, the willingness of using coupon rise quickly, after reaching to an inflection point it continually declines to a stable level.

With many start-ups operating in the region, we can observe a rising leader in the ASEAN-6 – Lazada. In the survey with a sample of 124 respondents conducted in Malaysia, Singapore and the Philippines, around 50% of them mentioned Lazada as one of their most frequent purchased merchants. Credit card is most preferred payment method in the surveyed countries, except in the Philippines where cash on delivery is the dominant payment method.

Respondent's attitudes towards online shopping are positively related to their purchase intention. Meanwhile, purchase intention stays high in the region: 91% of respondents plan to continue buying products/services online in the next 6 months. A general positive attitude also exists in the region: respondents believe shopping online is useful, easy, effective and inexpensive. The cultural factor in trust varies a little in the surveyed countries, as well as respondents' propensity to trust.

Lack of trust and high perceived risk have been identified as bottlenecks to the development of e-commerce in Southeast Asia. Research result suggests perceived risk of online shopping is very low in Singapore. Between a range from 1 (least risky) to 7 (most risky), Singapore scored 3.76. In contrast, respondents in the Philippines reports perceived risk 25% higher than Singaporean, which is 4.71 points. Respondents do believe online shopping is riskier than other methods. In all the influencing factors of perceived risk in the study, authenticity of product is the primary concern. 77% of respondents agree that there are too many fake products sold in the market.

When it comes to trust in e-vendors, size of online store plays an important role. 92% of respondents claim that they prefer to buy from large online stores. A good reputation sometimes is even more important than lower price in respondents' mindset, particularly in the Philippines. Also, a flexible return policy, in-time support such as live chat function, and third-party certification can increase trust towards e-vendors. E-commerce players think offline presence could increase trust by building real-life connections with consumers. However, the research finding tells a different story: 67% of respondents reports they prefer to buy from online stores with an offline presence.

A high level of trust exists in third-parties, respondents believe logistics are trustworthy in the region and third-party certification bodies are doing a good job. Respondents also feel protected by consumer laws when purchasing online, but the level of agreement is lower than other two factors. 34% of respondents in the Philippines hold a neutral opinion towards the statement that "I feel protected by consumer law when purchasing online", while 61% of Singaporean respondents agree with this statement. This result is related to perceived risk, where Singapore has lower perceived risk than the Philippines in general.

To sum it up, the designed goals have been fulfilled. The research and its findings are few available resources concerning e-commerce consumer behavior in Southeast Asia. It provides great insights on factors that influence post-adoption purchasing behavior. As an exploratory research, it gives inspirations to future research, particularly in proposing the hypothesis on one factor or one country discussed in this research. Apart from theoretical contribution, e-commerce companies in the region or new entrants can also benefit from this research, by using findings and recommendations to formulate a marketing strategy and prioritize marketing activities.

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Appendix 1 Questionnaire before pre-test

Perceived Risk And Trust for Online Shopping

Hello,

I am Derek Zhang, currently working on my master thesis - "eCommerce Consumer Behavior in Southeast Asia". As a part of the thesis, I'm researching factors that influence trust in online shopping, as well as the correlations within trust, risk, attitudes towards online shopping and online purchase intention in Singapore, Philippine, and Malaysia.

There are 3 sections in the questionnaire and will take a maximum of 5 minutes. You will remain anonymous and the information you provide will only be used for academic purpose.

If you are interested in the final result of this research, please leave your e-mail in "Section C". Please share this questionnaire with your friends and family.

Thanks in advance for your help!

Have you ever purchased a product or service from the Internet in Singapore, Philippines or Malaysia? (Please do not include purchases made in a business to business context.)

❍ Yes
❍ No

Section A

In which country did you purchase online the most?

❍ Singapore
❍ the Philippines
❍ Malaysia

On average, how much money did you spend per online order in 2017? (in USD)

How often did you shop online in 2017?

What are the 3 most frequently purchased products or services for you via internet in 2017?

❑ Fashion (e.g. Clothes, Shoes)
❑ Beauty (e.g. cosmetics, personal care)
❑ Electronics (e.g. phones, appliances)
❑ Physical Media (e.g. book, CD)
❑ Grocery (e.g. food)
❑ Toys, DIY, Hobbies

❑ Travel including accommodation (e.g. plane tickets, uber)
❑ Digital Music (e.g. Apple Music)
❑ Other

What is your preference for payment method when purchasing online? (1-least likely to use/7-most likely to use)

	1	2	3	4	5	6	7
Credit Card	○	○	○	○	○	○	○
Bank Transfer(e.g. ATM Deposit)	○	○	○	○	○	○	○
Cash On Delivery	○	○	○	○	○	○	○
Instalment	○	○	○	○	○	○	○
Offline Places (e.g. 7/11, post office)	○	○	○	○	○	○	○
Store Coupon, Pre-paid credits	○	○	○	○	○	○	○

From which online stores did you purchase products or services most frequently in Singapore/Philippines/Malaysia?

Section B

I plan to continue using the internet to purchase in the next six months.

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I tend to trust people and most things in my life.

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I tend to trust people and things even when I have little knowledge about it

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I prefer to buy from large companies online.

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

A good reputation is more important than lower price when I purchase online.

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I trust online stores with a more flexible return policy

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I prefer to buy from online stores which also have an offline presence (e.g., with a physical shop).

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

Interaction with a person makes me trust an online store more.

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I think third-party certification bodies (such as entities showed in the photo) are doing a good job.

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I think logistic companies are trustworthy in my country

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I feel protected by consumer law when purchasing online

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

A high degree of trust exists in my family

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

People in my community trust each other

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I feel safer using a credit card over cash-on-delivery when purchasing online

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I feel safe to give personal details to an online store

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I think buying online is riskier than other ways

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

There are too many fake products sold online

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

Online shopping has a bad reputation in my country.

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I believe using internet for purchasing is…

	1	2	3	4	5	6	7
Useful	○	○	○	○	○	○	○
Inexpensive	○	○	○	○	○	○	○
Effective	○	○	○	○	○	○	○
Not Risky	○	○	○	○	○	○	○
Easy	○	○	○	○	○	○	○
Good	○	○	○	○	○	○	○

Section C

What is your gender?

○ Female
○ Male

What is your nationality?

○ Singaporean
○ Filipino
○ Malaysian
○ Other: _____

What is your age group?

a) Under 15 b) 16 - 20 c) 21 - 25 d) 26 – 30 e) 31-35 f) 36 – 40 g) 41 – 45 h) 46 – 50 i) 51 - 55 j) 55 and above

Marital Status?

a) Single b) Single with children c) Partnered without children d) Partnered with children

Education Level?

a) Primary Education (0-6 years) b) Secondary (6-9 years) c) High School or Equivalent (9-12 years) d) Undergraduate e) Masters f) Doctoral/PhD g) Other

Occupation?

a) Student b) Employed c) Unemployed d) Freelance e) Other

If you would like to receive the final result of this research, please leave your e-mail address here.

Do you have any feedback? Please write them down.

Appendix 2 Questionnaire after pre-test

Perceived Risk And Trust for Online Shopping

Hello,

I am Derek Zhang, currently working on my master thesis - "eCommerce Consumer Behavior in Southeast Asia". As a part of the thesis, I'm researching factors that influence trust in online shopping, as well as the correlations within trust, risk, attitudes towards online shopping and online purchase intention in Singapore, Philippine, and Malaysia.

There are 3 sections in the questionnaire and will take a maximum of 5 minutes. You will remain anonymous and the information you provide will only be used for academic purpose.

If you are interested in the final result of this research, please leave your e-mail in "Section C". Please share this questionnaire with your friends and family.

Thanks in advance for your help!

Have you ever purchased a product or service from the Internet in Singapore, the Philippines or Malaysia? (Excluding purchases made in a business to business context.)

❍ Yes
❍ No

Section A

In which country did you purchase online the most?

❍ Singapore
❍ the Philippines
❍ Malaysia

In total, how much money did you spend online in 2017? (in USD)

How many times did you shop online in 2017?

What are the 3 most frequently purchased products or services for you via the internet in 2017?

❑ Fashion (e.g. Clothes, Shoes)
❑ Beauty (e.g. cosmetics, personal care)
❑ Electronics (e.g. phones, appliances)
❑ Physical Media (e.g. book, CD)
❑ Grocery (e.g. food)
❑ Toys, DIY, Hobbies

❑ Travel including accommodation (e.g. plane tickets, uber)
❑ Digital Music (e.g. Apple Music)
❑ Other

What is your preference for payment method when purchasing online? (1-least likely to use/7-most likely to use)

	1	2	3	4	5	6	7
Credit Card	❍	❍	❍	❍	❍	❍	❍
Bank Transfer(e.g. ATM Deposit)	❍	❍	❍	❍	❍	❍	❍
Cash On Delivery	❍	❍	❍	❍	❍	❍	❍
Instalment	❍	❍	❍	❍	❍	❍	❍
Offline Places (e.g. 7/11, post office)	❍	❍	❍	❍	❍	❍	❍
Store Coupon, Pre-paid credits	❍	❍	❍	❍	❍	❍	❍

From which online store did you purchase products or services most frequently in Singapore, the Philippines and/or Malaysia?

Section B

I plan to continue to purchase products/services online in the next six months.

	1	2	3	4	5	6	7	
Totally Disagree	❍	❍	❍	❍	❍	❍	❍	Totally Agree

I tend to trust people and most things in my life.

	1	2	3	4	5	6	7	
Totally Disagree	❍	❍	❍	❍	❍	❍	❍	Totally Agree

I tend to trust people and things even when I have little knowledge about it

	1	2	3	4	5	6	7	
Totally Disagree	❍	❍	❍	❍	❍	❍	❍	Totally Agree

I prefer to buy from large online stores.

	1	2	3	4	5	6	7	
Totally Disagree	❍	❍	❍	❍	❍	❍	❍	Totally Agree

A good reputation is more important than lower price when I purchase online.

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I trust online stores with a more flexible return policy

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I prefer to buy from online stores which also have an offline presence (e.g. with a physical shop).

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

Interaction with a customer service personnel makes me trust an online store more.

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I trust online stores with third-party certification (such as entities showed in the photo) more than those without.

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I think third-party certification bodies (such as entities showed in the photo) are doing a good job.

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I think courier delivery services are trustworthy.

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I feel protected by consumer law when purchasing online

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

A high degree of trust exists in my family

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

People in my community trust each other

	1	2	3	4	5	6	7	
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I feel safer using a credit card over cash-on-delivery when purchasing online

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I feel safe to give personal details to an online store

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I think buying online is riskier than other methods

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

There are too many fake products sold online

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

Online shopping has a bad reputation.

	1	2	3	4	5	6	7	
Totally Disagree	○	○	○	○	○	○	○	Totally Agree

I believe using internet for purchasing is…

	1	2	3	4	5	6	7
Useful	○	○	○	○	○	○	○
Inexpensive	○	○	○	○	○	○	○
Effective	○	○	○	○	○	○	○
Not Risky	○	○	○	○	○	○	○
Easy	○	○	○	○	○	○	○

Section C

What is your gender?

○ Female
○ Male

What is your nationality?

○ Singaporean
○ Filipino
○ Malaysian
○ Other: _____

What is your age group?

a) Under 15 b) 16 - 20 c) 21 - 25 d) 26 – 30 e) 31-35 f) 36 – 40 g) 41 – 45 h) 46 – 50 i) 51 - 55
j) 55 and above

What is your marital status?

a) Single b) Single with children c) Partnered without children d) Partnered with children

What is your highest completed level of education?

a) Primary Education (0-6 years) b) Secondary (6-9 years) c) High School or Equivalent (9-12
years) d) Bachelor e) Masters f) Doctoral/PhD g) Other

What is your status of employment?

a) Student b) Employed c) Unemployed d) Freelance e) Other

If you would like to receive the final result of this research, please leave your e-mail address
here.

Do you have any feedback? Please write them down.

Appendix 3 Facebook user's demographic structure in 2017

		Singapore		Malaysia		the Philippines		Total	
		n (million)	%	n (million)	%	n (million)	%	n (million)	%
Gender	Male	2.3	53%	12.3	56%	28.2	47%	42.9	50%
	Female	2.1	47%	9.7	44%	31.8	53%	43.5	50%
Age	21-25	0.1	2%	1.3	6%	8.8	15%	10.2	12%
	26-30	0.8	18%	6.5	30%	20.7	35%	28.0	32%
	31-35	1.5	34%	7.3	33%	16.4	27%	25.2	29%
	36-40	1.0	23%	3.8	17%	7.7	13%	12.5	14%
	41-45	0.5	11%	2.0	9%	3.6	6%	6.1	7%
	46-50	0.3	7%	0.8	4%	1.8	3%	2.9	3%
	51-55	0.2	5%	0.3	1%	1.0	2%	1.5	2%
Social Media Penetration		77%		71%		58%		Not Applicable	
Facebook Penetration		72%		67%		57%		Not Applicable	

Source: We Are Social & Hootsuite, 2017