

## The Malaysian Consumers' Perception of E-Commerce Usage in Marketing\*

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### Introduction

E-Commerce offers a new dimension in doing business including consumer marketing. This has been induced mainly by the Internet technology, which enjoys a strong government support in Malaysia. Theoretically, e-commerce promises many solutions to the problems faced by consumers in their shopping activities, such as long queues during sales, traffic jams and parking problems, congestion and difficulty in getting information for decision-making. Despite the problem-solving potential, e-commerce has not really reached the expected positive reaction from the Malaysian consumers. Literature has identified three major benefits that e-commerce offers to consumers: convenience, ease of information gathering, and fewer hassles (Janal, 1998). On the other hand, there are also negative aspects of e-commerce raised in the literature, which are treated more as challenges that on-line marketers face. Those factors are: limited consumer exposure and buying, skewed user

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demographics and psychographic, chaos and clutter, security, and ethical concerns (Kotler and Armstrong, 2001).

This paper examines the perception of the Malaysian consumers on e-commerce utilisation in their purchasing activities to provide some understanding and explanation as to their reluctance in using e-commerce medium in their marketing decision. Specifically, the study aims at identifying the consumer readiness to adopt e-commerce and to examine their socio-pyscho profile. The paper is organised as follows: The following section provides the description of the methodology. This is followed by the discussion of the results. The last section concludes the paper.

## **Methodology**

The approach of this study is based on a methodology of segmenting consumers according to their decision-making style dimension in purchasing products from the market. Recent studies on consumers' decision-making styles were done by profiling the consumers' psycho-graphics according to their decision-making style dimension (Sproles and Kendall, 1986; Durvasula et al., 1993; Hafstrom et al., 1992; Sproles, 1985; Saleh, 1999).

The measurement model in this study follows the structural equation modelling convention, as specified in Figure 1. The ellipse components refer to the consumers' decision-making style dimensions, the rectangular components refer to measurement variable statements, and the error terms are indicated by E. The number assigned to each measurement variable and error term indicates the listing of the variables in the questionnaire.

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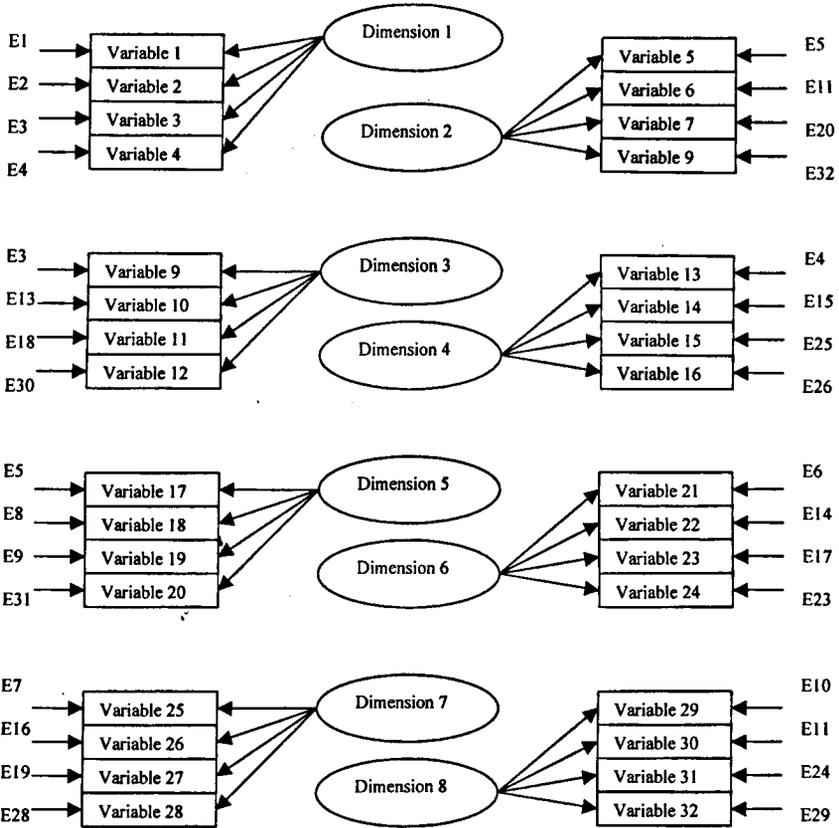


Figure 1: The Measurement Model for Consumers' Perception of E-Commerce

For example, Variable 24 is listed as the twenty-fourth variable statement in the questionnaire. In this case, the one-way arrows between the oval and the rectangular components indicate the factor loading of the rectangular components onto the ellipse components, while the one-way arrows between the rectangular components and the E's refer to the error-variable covariance.

The questionnaire was designed from the measurement model. It contains 32 statements, in the form of five-point Likert scale statements. The target population comprised the general consumers who reside in Malaysian major urban areas namely the Klang Valley, Johor Bahru and Penang. The survey was carried out in the months of April and May 2001. The consumers in the selected urban areas are expected to exhibit a more or less similar e-commerce environment. In other words, the consumers in these areas enjoy the same urban shopping facilities of a developing economy. In an urban environment, consumers can have the maximum choice for product variety and shopping outlets. They also benefit from the marketing information and promotional offers made available in an urban shopping environment.

The questionnaire was designed to focus on the consumers' perception of using e-commerce in purchasing products from the market. The statements chosen will deal with the consumers' attitude towards purchasing products via e-commerce facilities. Since the respondents consist of consumers from the general public, the statements used in the questionnaire are designed in such a manner that they are easily understood by a wider range of consumers. The consumers are expected to indicate their responses towards the item statements, which are provided in the questionnaire using the five-point Likert scale for each statement. The items used were randomly ordered in the self-administered questionnaires and are developed based on Janal (1998) and Kotler and Armstrong (2001). The questionnaire was pilot-tested twice. After some adjustment, the final questionnaire contains 32 statements as shown in Table 1. A balanced distribution of item statements for each dimension of e-commerce is ensured.

A total of 1200 questionnaires were sent out using a drop-and-collect survey method to the samples of consumers who reside within the three urban areas. Out of the total number of questionnaires, 171 were not returned by the respondents, seven were incomplete; which left a total of 1029 completed questionnaire for analysis. In other words, the response rate of this survey stands at 86% which is considered high compared to the other method of data gathering particularly postal survey.

The data were factor analysed using the principle component method of factor extraction and varimax rotation option of the factor analysis from the SPSS program (version 10). A constrained Eigenvalue of 1 and above solution was extracted to test for the characteristics model of the consumers' perception of e-commerce. This method used the earlier studies on consumers' buying orientations which include those by Sproles (1985), Sproles and Kendall (1986), Hafstrom et al. (1992) and Durvasula et al. (1993). Those dimensions, which emerge from the factor solution, will be observed. Besides, the order of the dimensions from the factor solution according to the order of the alpha coefficient of reliability will also be assessed. This is to be consistent with the method used in the earlier studies on consumers' decision-making style dimensions. A high reliability alpha coefficient indicates that the measurement variables used to measure the particular dimension are reliable.

**Table 1:** Indicator Variables for Measuring Consumers' Perception of E-Commerce

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*Convenience*

1. Shoppers don't have to go far or face a long queue at the cashiers when shopping via the Internet
2. Shopping via the Internet can save much of the shoppers' time.
3. Shoppers can escape traffic congestions by shopping through the Internet.
4. Expenses on petrol, toll and parking can substantially be saved by shopping through the Internet.

*Ease of Information Gathering*

1. Product information can easily be gathered and made available through the Internet.
2. Shoppers can have access to lots of information that can help them to make appropriate product choice through the Internet.
3. Comparison on product prices and services offered can easily be made through the Internet.
4. Shoppers can be more assured of getting the best offer by shopping via the Internet.

*Fewer Hassles*

1. Shoppers are more able to decide their product purchase on their own when shopping via the Internet.
2. Problems of pushy sales people can be avoided by shopping via the Internet.
3. Shoppers can be free from emotional factors such as persuasion and appeal from sales personnel when shopping via the Internet.
4. Shoppers can avoid the feeling of being pressured, time constraint, or chaos when shopping via the Internet.

*Limited Consumer Exposure and Buying*

1. Shoppers use the Internet more for product information search rather than as a means for shopping.
2. Much time is spent on surfing the Internet than using it for shopping.
3. Majority of shoppers use the information they get from the Internet as a guide for shopping at the conventional shopping outlet.
4. The Internet is more appropriate for information search rather than as means for shopping.

*Skewed User Demographics and Psychographics*

1. Shopping through the Internet is only suitable for a small group of people.
2. The usage of the Internet as a shopping medium is only suitable for highly educated shoppers.
3. The usage of the Internet as a shopping medium is only suitable for high-income earning shoppers.

4. The usage of the Internet as a shopping medium is only suitable for young-aged group shoppers.

### *Ethical Concerns*

1. Internet shoppers may lose their privacy because the computer system can easily be reached and intruded by unwanted advertisements.
2. Discrimination on shoppers can be made by sellers through the Internet because they can select which shoppers they want to send their offers and vice versa.
3. Information on Internet shoppers is open to any party who want to use them for exploitation and cheating purposes.
4. Internet shopping creates the risk to the Internet shoppers of being intruded and sabotaged by irresponsible parties.

### *Security*

1. Shoppers can easily be cheated by the sellers through Internet purchase because shoppers are unable to physically view the product prior to purchasing them.
2. Shoppers may not be fully satisfied when purchasing a product through the Internet because they are unable to physically view the product prior to purchasing them.
3. Sellers can cheat the shoppers by not delivering the products that have already been purchased by the shoppers through the Internet.
4. Shopping through the Internet is unsafe because the credit card numbers can be illegally used by others.

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Items used in the questionnaire were developed from the factors suggested by Janal (1998) and Kotler and Armstrong (2001). Four measurement statements were assigned to each of the seven factors that are hypothesised to be consumers' perception of purchases using e-commerce. The measurement model in this study follows the structural equation modelling convention, as specified in Figure 1. The ellipse components refer to the consumers' decision-making style dimensions, the rectangular components refer to measurement variable statements, and the error terms are indicated by E. The number assigned to each measurement variable and error term indicates the listing of the variables in the ques-

tionnaire. For example, Variable 24 is listed as the twenty-fourth variable statement in the questionnaire. In this case, the one-way arrows between the oval and the rectangular components indicate the factor loading of the rectangular components onto the ellipse components, while the one-way arrows between the rectangular components and the E's refer to the error-variable covariance.

A dimension which is reliably measured (with alpha coefficient of reliability 0.4 and above) in the list of consumers' perception of e-commerce can be considered as the more consistent dimension. Using the alpha coefficient of reliability 0.4 as the value of cut-off point may be slightly on the lower side. Nevertheless, this is the cut-off point value used in the earlier studies by Sproles (1985), Hughes (1986) Sproles and Kendall (1986), Hafstrom et al. (1992), Durvasula et al. and (1993), Saleh (1999). Therefore, in order to ensure that the findings of this study are comparable to those of the earlier ones, the same cut-off point value will be used. As mentioned earlier, those measurement variables used to measure each dimension are adopted from the said studies. These studies indicate that the item variables used in measuring the consumers' decision-style dimensions are content and construct valid. These findings may be considered sufficient to establish the credibility of a test of a construct (Gay and Diehl, 1992). Therefore, the similar method used to measure consumers' perception of e-commerce can also be considered as having the same properties.

Therefore, based on the reliability (alpha reliability coefficient 0.4 and above) of the item used to measure dimensions of consumers' perception of e-commerce, it can be argued that the measurement variables used in this study are indeed reliable. Consequently, it can be concluded that the dimensions which appear on the lists of consumers' perception of e-commerce can be considered as reliable dimensions. In addition, the appearance of the dimensions on the list of perception of e-commerce indicates that these dimensions are construct valid in explaining consumers' state of readiness towards e-commerce.

## Results

The exploratory factor analysis solution obtained for the consumers' perception of e-commerce is shown in Table 2, where in the solution extracted, 61% of the variance is explained by the eight factors extracted. Out of the eight factors, only seven dimensions (factors) of consumers' perception of e-commerce are interpretable and suit the requirements of the 0.4 factor loading cut-off point, and at least two indicator variables associated with each dimension. These seven factors explain 58% of the total variance. The dimensions extracted in descending order of the alpha reliability coefficients are Security and Ethical Concern (Reliability =0.87), Convenience (Reliability =0.80), Ease of Information (Reliability =0.80), Chaos and Clutter (Reliability =0.78), Skewed User Demographics and Psychographics (Reliability =0.80), Fewer Hassles (Reliability =0.70), Limited Consumer Exposure and Buying (Reliability =0.60). However, the last dimension (Reliability =0.15), cannot be accepted here because it has factor loading below 0.4. To be considered as reliable, a dimension needs to have an alpha reliability coefficient of 0.4 and above (Sproles and Kendall, 1986). This is to adhere to the method used by Sproles and Kendall (1986) for comparability. Therefore, out of the eight interpretable dimensions, which also follow the underlined requirements, only seven dimensions can be considered as reliable. Those dimensions which are Security and Ethical Concern (Reliability =0.87), Convenience (Reliability =0.80), Ease of Information (Reliability =0.80), Chaos and Clutter (Reliability =0.78), Skewed User Demographics and Psychographics (Reliability =0.80), Fewer Hassles (Reliability =0.70), Limited Consumer Exposure and Buying (Reliability =0.60), are the dimensions of consumers' perception of e-commerce which are construct valid and can be reliably used by most consumers.

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**Table 2:** Factor Analysis Solution Obtained for Consumers' Perception of E-Commerce

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*Security and Ethical Concerns (Reliability = 0.87),*

27.	Shoppers can easily be cheated by the sellers through Internet purchase because shoppers are unable to physically view the product prior to purchasing them.	.74
31.	Information on Internet shoppers is open to any party who want to use them for exploitation and cheating purposes.	.74
29.	Internet shoppers may lose their privacy because the computer system can easily be reached and intruded by unwanted advertisements.	.74
32.	Internet shopping creates the risk to the Internet shoppers of being intruded and sabotaged by irresponsible parties.	.72
28.	Shoppers may not be fully satisfied when purchasing a product through the Internet because they are unable to physically view the product prior to purchasing them.	.71
26.	Sellers can cheat the shoppers by not delivering the products that have already been purchased by the shoppers through the Internet.	.70
25.	Shopping through the Internet is unsafe because the credit card numbers can be illegally used by others.	.63
30.	Discrimination on shoppers can be made by sellers through the Internet because they can select which shoppers they want to send their offers to and vice versa.	.58

*Ease of Information (Reliability = 0.80),*

6.	Shoppers can have access to lots of information that can help them to make appropriate product choice through the Internet.	.81
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- |    |                                                                                                      |            |
|----|------------------------------------------------------------------------------------------------------|------------|
| 7. | Comparison on product prices and services offered can easily be made through the Internet.           | .79<br>.79 |
| 5. | Products information can easily be gathered and made available through the Internet.                 | .67<br>.48 |
| 8. | Shoppers can be more assured of getting the best offer by shopping via the Internet.                 |            |
| 9. | Shoppers are more able to decide their product purchase on their own when shopping via the Internet. |            |

*Convenience (Reliability = 0.80),*

- |    |                                                                                                   |     |
|----|---------------------------------------------------------------------------------------------------|-----|
| 3. | Shoppers can escape traffic congestion by shopping through the Internet.                          | .78 |
| 2. | Shopping via the Internet can save much of the shoppers' time.                                    | .76 |
| 4. | Expenses on petrol, toll and parking can substantially be saved by shopping through the Internet. | .72 |
| 1. | Shoppers don't have to go far or face a long queue at the cashiers when shopping via the Internet | .72 |

*Chaos and Clutter (Reliability = 0.78),*

- |     |                                                                                                                                             |     |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 23. | It is difficult to use the vast amount of information from the Internet to decide which product to buy through the Internet                 | .78 |
| 24. | The vast amount of information in the Internet tends to confuse the shoppers rather than help them in buying products through the Internet. | .77 |
| 21. | Information overload in the Internet makes shopping through the Internet much more difficult.                                               | .73 |
| 22. | Only a small portion of information from the Internet can be utilized for shopping through the Internet.                                    | .64 |

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*Skewed User Demographics & Psychographics (Reliability = 0.80),*

- |                                                                                                   |     |
|---------------------------------------------------------------------------------------------------|-----|
| 18. The usage of Internet as a shopping medium is only suitable for highly educated shoppers.     | .87 |
| 19. The usage of Internet as a shopping medium is only suitable for high income earning shoppers. | .84 |
| 20. The usage of Internet as a shopping medium is only suitable for young aged group shoppers.    | .76 |

*Fewer Hassles (Reliability = 0.70),*

- |                                                                                                                                    |     |
|------------------------------------------------------------------------------------------------------------------------------------|-----|
| 10. Problems of pushy sales people can be avoided by shopping via the Internet.                                                    | .70 |
| 11. Shoppers can be free from emotional factors such as persuasion and appeal from sales personnel when shopping via the Internet. | .69 |
| 12. Shoppers can avoid the feeling of being pressured, time constraint, or chaos when shopping via the Internet.                   | .48 |
| 9. Shoppers are more able to decide their product purchase on their own when shopping via the Internet.                            | .48 |

*Limited Consumer Exposure and Buying (Reliability = 0.60),*

- |                                                                                                                                      |     |
|--------------------------------------------------------------------------------------------------------------------------------------|-----|
| 15. Majority of shoppers use the information they get from the Internet as a guide for shopping at the conventional shopping outlet. | .72 |
| 14. Much time is spent on surfing the Internet than using it for shopping.                                                           | .69 |
| 13. Shoppers use the internet more for product information search rather than as a means for shopping.                               | .59 |
| 16. The Internet is more appropriate for information search rather than as a means for shopping.                                     | .54 |
| 17. Shopping through the Internet is only suitable for a small group of people.                                                      | .73 |
| 9. Shoppers are more able to decide their product purchase on their own when shopping via the Internet.                              | .41 |

The seven dimensions with the explanation for each of them are as below;

***Security and Ethical Concern (Reliability =0.87)***

This dimension indicates that consumers with high scores on this are of the opinion that security and ethic-related factors are the most important factor that will determine the readiness of Malaysian urban consumers towards adopting e-commerce in their purchasing activities. In other words, issues regarding safety and ethics such as invasion of privacy, cheating, fraudulence, insecure use of credit cards must be resolved first before more consumers trust the use of e-commerce in marketing activities. The finding also suggests that both the security and ethical issues are viewed as a single factor by itself.

***Ease of Information (Reliability =0.80)***

This dimension indicates that consumers with high scores on this factor believe and acknowledge the easy access to information that can be made possible by purchasing through the Internet. They realise that the Internet offers convenience in acquiring information in the information stage of the purchase process. Other perceived benefits include: it facilitates price and quality comparisons across products and services.

***Convenience (Reliability =0.80)***

This dimension indicates that consumers with high scores on this factor are aware of the conveniences provided by online marketing. The respondents appear to have understood that buying through the Internet will solve the normal hassle of shopping activities such as traffic congestion, high cost of parking and driving and crowding effect during festive and sale seasons.

***Chaos and Clutter (Reliability =0.78)***

The dimension indicates that consumers with high scores on this factor acknowledge the information overloading in the Internet can cause confusion and difficulty in choosing the right information from the Internet. Information overload is perceived in a negative sense in that information seeking is considered as a time wasting activity.

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***Skewed User Demographics and Psychographics (Reliability =0.80)***

The dimension indicates that consumers with high scores on this factor view e-commerce as not accessible to the society as a whole, but confined to a small group of customers who are generally affluent (middle to higher income bracket and hence afford the Internet facility). The respondents at large are aware of the digital divide between the rich and the poor in the country. E-commerce is viewed as a phenomenon of the affluent, rich and educated sector of the community. The equitable access to the Internet is perceived as another dimension of inequity in the society. E-commerce can be viewed as a way to further distant the well-to-do consumers from the lower-to-average income consumers. In other words, e-commerce is viewed as contributing more towards unfairness access to the market among the society as a whole.

***Fewer Hassles (Reliability =0.70)***

This dimension indicates that consumers with high scores on this factor view e-commerce as an alternative to avoid the negative side of dealing with the traditional way of marketing. Through e-commerce, consumers could avoid pushy sales person, and have more time to decide in selecting a product or service. Consumers here view e-commerce as a means to avoid all those distracting factors that can influence them into making a more rational decision in their purchasing activities.

***Limited Consumer Exposure and Buying (Reliability =0.60)***

The dimension indicates that consumers with high scores on this factor view the Internet as just a means to access information while the actual buying is better done in the physical or real market. The consumers are willing to invest in time to surf for information in the Internet and arrive at an optimum buying decision. The consumers resort to normal marketing channels to buy the intended products and services. In other words, the Internet is perceived as an information kiosk or source rather than a reliable "virtual" market for shopping. This perception could pose a serious challenge to marketers who want to promote e-commerce as a new medium of shopping activities.

## **Conclusion**

The findings of this study confirm the relevantness of most of the factors associated with consumers' perception as suggested by Janal (1998) and Kotler and Armstrong (2001). All the eight perceptual factors appear to be significant dimensions in the attitudinal framework of the Malaysian consumers. The consumers perceive the Security and Ethical factors as a singular concept rather than a multi-dimensional issue. These factors appear to be the most reliable among other factors extracted in the factor solution. This finding suggests that the issue of security and ethics is the utmost consideration in the decision framework of the urban consumers. It appears to be the most dominating as well as a determining factor in adopting e-commerce as an alternative method of buying and selling.

As discussed earlier, the issue of security and ethical concern of Internet marketing is complex and multi-dimensional in nature. It entails matters like security in Internet payment, possibility of cheating, fraudulence, failure in product delivery, sub-standard quality, fear of losing one's privacy in the Internet and so on. Despite the multidimensionality of the issue, the fact that the consumers view it as a singular variable indicates they are not willing to trade one for the other. In other words, these concepts are perceived as not mutually exclusive.

The findings have a direct policy implication to the e-commerce development effort in this country. Both security and ethical issues are a function of a number of variables such as technology, education, promotion, law and regulations, socio-cultural practices and infrastructures. Hence, to increase e-commerce diffusion into the economy, a comprehensive development plan is imperative. The plan should integrate the infrastructure and hardware pre-requisites with the educational programmes to the consumers to alleviate fear of and distrust on e-commerce as a marketing channel. While the consumers' fear is real and proven, the incidences are isolated and small in value compared to the total value of e-commerce globally. Despite the fear, the consumers are generally knowledgeable and aware that e-commerce does offer a number of benefits; in particular as a rich information bank to help decision-

making. Given this positive perception towards e-commerce, a policy that minimises inefficiencies and irregularities while maximising its benefits is likely to support the growth of internet marketing in this country.

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