

Online Word of Mouth as a Determination in Adolescents' Purchase Decision Making: the Influence of Expertise and Involvement

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Abstract

Because of the abundant information available on the Internet, adolescents can gain product knowledge with little effort. Nowadays, Internet serves as a new channel besides family members for adolescents to seek information. This study examines the associations of intention to consult online word-of-mouth to purchase involvement and product expertise. The purpose of this study is to discuss the effect of product expertise and purchase involvement on the influence on purchase decision of word-of-mouth from online community, family members, and friends. The expertise was divided into product experience and product knowledge in this study. There were 321 adolescent subjects completed the questionnaires. Cluster analytical procedures were applied based on individuals' expertise. The respondents were entered into three major segments: novice, experienced, and expert. This study adopted Structure Equations Modeling (SEM) to test the proposed hypotheses, and to measure the relationships among involvement, purchase experience, product knowledge and purchase decision influence. The survey results showed that novice adolescents tend to consult others, no matter online, family, and friends, more than experienced and expert adolescents. Expert adolescents consult much word-of-mouth from online community than experienced and novice consumers. Moreover, experienced consumers consult much word of mouth from family than expert or novice consumers.

KEYWORDS: Purchase Involvement, Product Expertise, Online Community

1. INTRODUCTION

In the context of rapid development and high penetration rate of Internet, Internet is becoming an important media for marketing communication. With Internet, people can gain product knowledge with little effort. Nowadays, Internet is a new information source for adolescents to get consumption information. Consumers search online and use the information they got to make the purchase choices. Previous study indicated that the adolescents' purchase behaviors were influenced by family members, physical friends and online information (Shim, 1996). It is important to

understand how adolescents make their purchase decision and whom the decision will be influenced by.

Previous studies had showed how adolescents made their purchase process and how their decisions were influenced by their relatives (McNel, 1987; Moschis & Churchill, 1978; Szybillo et al. 1997). There were many previous studies of adolescent purchase behavior which focused on family members. Some of them made the point on the changing of family structure and the sex role orientation of a family (Geuens et al., 2003; Kaufman, 2000). However, family structure is not only the influence upon adolescents since Internet became major application in families, especially when the family communication was not working. Internet endorses adolescents with rich product knowledge which may serve as power in purchase decision for family as well as individual purchase process.

Adolescents may consult product related information from various sources such online community, friends, and family. To consider the diversification in purchase information sources for adolescent, this study discuss the word-of-mouth information source for adolescents. However, product knowledge and personal involvement may be the moderate factors for adolescents to determinate whether to seek others' advice and whom they prefer to consult for purchase decision. With or without richness product knowledge may determine adolescents' motives in seeking word-of-mouth opinion. Personal involvement may also determine whether and where to seek word-of-mouth opinions.

This study discuss about how adolescents' purchase decision behavior be influenced upon product knowledge, experience, involvement and online word-of-mouth.

Internet is becoming an important information resource. Online word-of-mouth provides adolescents an easy way to learn from others experience. The existence of online word-of-mouth may change the pattern of adolescent purchase decisions. The purpose of study is to discuss the influence on adolescent purchase decision of online word-of-mouth and the moderate effort of knowledge, previous experience and involvement.

Accordingly, this study conducted the following two hypotheses such as:

H1: High expertise adolescents tend to consult much online word-of-mouth when making

purchase decision, than low expertise adolescents.

H2: High involvement adolescents tend to consult much online word-of-mouth when making purchase decision, than low involvement adolescents.

2. METHOD

This study employed a four-part questionnaire to examine the relationships among expertise, involvement, and online word-of-mouth consult before purchase decision making. The detailing measure scales are available in the appendix.

The first part of the questionnaire consisted of the Zaichkowsky(1985)'s 10-item Personal Involvement Inventory (PII).

In the second part, a nine-item scale was used to measure the degree of purchase decision influence, which was modified from Wang, Holloway, Beatty, and Hill(2007). The first three items in this part tested the degree of purchase decision influence from online community, the next three items tested the degree of influence from family members, the last three items tested the influence degree from friends.

The third part measured product knowledge and experience. The sample item for measuring product knowledge is "I really understand about MP3 or MP4 player." The sample item for measuring product experience is "how many MP3 or MP4 player you ever buy."

The last part measured the respondents' demographic data, usage of Internet, and the purchase behaviors.

The first part adopted semantic difference seven-point scale. All items in the second and third parts were measured using a five-point Likert-type scale, with '1' representing 'strongly disagree,' '3' representing neutral, and '5' representing 'strongly agree.'

This study calculated the reliabilities of purchase involvement, knowledge, experience, and the degree of purchase decision influence from online community, family members, and friends reliabilities by Cronbach's α . The Cronbach's α revealed the reliability scores from lowest .0885 (influence from online community) to highest .929 (influence from family members), which all exceed .70 and were all well within the acceptable range. Table 1 listed reliabilities measured by Cronbach's α .

Table 1. Reliability of each factors

Factors	Cronbach's α
Purchase Involvement	0.928
Intention to consult online community	0.885
Intention to consult family members	0.929
Intention to consult friends	0.903

3. DATA ANALYSIS

In order to understand the influence of involvement, expertise upon purchase decision influence, the survey was administered to adolescents who have Internet experience. Participants were sampled from high school students. A small souvenir worth about US\$ 2.5 dollars was given to respondents after finishing questionnaires.

There were 360 students who responded to this survey. Of these respondents, 321 (89.17%) respondents fully completed the questionnaires. The other 39 responses were deleted due to lack of previous Internet experience or missing data. The remaining 321 responses were entered for data analysis. Of the respondents, 166, or 51.713% were males, and 155, or 48.287% were females, with average of 18 years old and ages ranged from 15 to 19 years (average=18.839; s.d.=0.909). Females reported an average of 2.23 hours a day and 3.34 days a week in surfing online. Males spent an average of 2.64 hours a day, 3.95 days a week on Internet.

Of all respondents, 83.13% female and 85.81% male respondents indicated that they usually bought MP3 or MP4 players in physical stores, only 10.24% female and 9.03% male respondents chose to buy MP3 or MP4 in online stores or by online auction. There were 6.63% female and 5.16% of male respondents report that they have never bought MP3 or MP4 players before.

In terms of their living status, 268(83.49%) were living with their parents. 6 respondents (1.87%) were living in a rental house by themselves while 44 respondents (13.71%) were living in school dormitories. In terms of their romantic status, a population accounted for 99 subjects (30.84%) of the sample was in single status and 213 (66.36%) subjects were in love. The demographic profiles of the sample are reported in Table 2.

Table 2. Demographic profiles of the sample

Demographic variables		Cases	%
Gender	Male	166	51.71
	Female	155	48.29
Place to buy	Online Store	11	3.43
	Online auction	20	6.23
	Physical Store	271	84.42
	Never buy	19	5.92
Living Status	With parents	268	83.49
	Rented house by self	6	1.87
	School dormitory	44	13.71
Romantic Status	Others	3	0.93
	Single	99	30.84
	In love	213	66.36
	Others	9	2.80

3.1 Cluster Analysis: Experience and Knowledge

Cluster analytical procedures were applied based on expertise. Using the K-mean cluster approach, experience and product knowledge scales were used to generate clusters.

The cluster analysis results demonstrate the level of expertise in MP3 or MP4 for adolescents. The respondents were entered into three major segments: novice, experienced, and expert. The result of cluster analysis showed in figure 1.

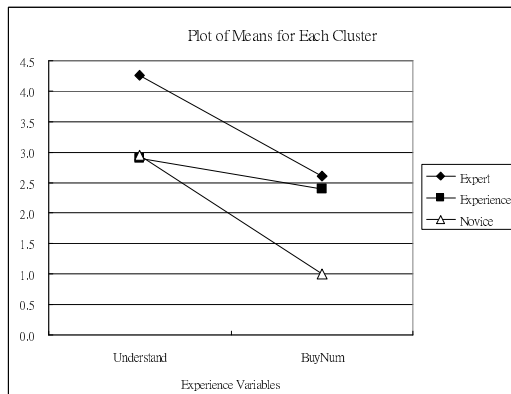


Figure 1. Result of Cluster analysis

The segment of subjects with high level knowledge and experience was named as “expert” segment that accounted for roughly 31.78% of participants (n=102). The segment with middle level of knowledge and experience was named as “experienced consumer” for nearly 46.42% of participants (n=149). The low level knowledge and purchase experience segment was named as “novice consumer” that accounted for nearly 21.81% of participants (n=70). The cluster analysis results are showed in table 2.

Table 2. Results of Cluster analysis

	Cluster by expertise		
	Novice adolescents	Experienced adolescents	Expert adolescents
Experience	M=2.943 sd=0.053	M=2.893 sd=0.036	M=4.255 sd=0.044
Knowledge	M=1.000 sd=0.082	M=2.389 sd=0.056	M=2.598 sd=0.068

Table 3. Results of ANOVA analysis

	Novice	Experienced	Expert	P value
Consult online word-of-mouth	10.286 (sd=3.212)	8.523 (sd=2.997)	9.304 (sd=3.076)	F=9.673 P<.000
Consult family members	11.043 (sd=2.964)	10.523 (sd=2.768)	9.676 (sd=3.410)	F=4.907 P<.007
Consult friends	11.200 (sd=2.763)	9.846 (sd=2.747)	10.157 (sd=2.672)	F=6.73 P<.001

3.2 ANOVA Analysis

Table 3 lists the ANOVA analysis results for purchase decision influence of online community, family members, and friends among novice adolescents, experienced adolescents, and expert adolescents. The means of novice adolescents were the highest among the three segments in all dimensions of purchase decision influence of online community, family members, and friends. Besides, expert adolescents were higher than experienced adolescents upon the purchase decision influence by online community. Nevertheless, experienced adolescents segment is higher than expert adolescents segment in family influence.

3.3 Structure Equations Modeling (SEM)

This study adopted Structure Equations Modeling (SEM) to test the proposed hypotheses, and to measure the relationships among involvement, purchase experience, product knowledge and purchase decision influence. SEM is a general and powerful analysis technique that includes many of specialized analysis methods. One of the major applications of structural equation modeling is causal modeling or path analysis which can be used to examine the hypothetical causal relationships among variables. Causal models are not only involved manifest variables but also latent variables. Moreover, SEM has some indicator to measure the fitness for causal modeling, such as Goodness-of-Fit Index (GFI) and Adjusted Goodness-of-Fit Index (AGFI). SEM analysis comprises many approaches that can be employed to perform parameter estimation.

In this study, the Goodness-of-Fit Index (GFI) and Adjusted Goodness-of-Fit Index (AGFI) indicators are both within the acceptable criteria range established by Gefen et al.(2000) and Jiang et al. (2002) where GFI above 0.90 is ideal, and AGFI above 0.80 is acceptable. The results of SEM are showed in Figure 2. The value of GFI of this study was 0.938, which was above 0.90 and thus within the acceptable range. Its AGFI was 0.899, which was above 0.80 and also within the acceptable range.

The SEM analysis results showed that the intention to consult online community word-of-mouth when making purchase decision was influenced by product knowledge (0.407, p<.011), involvement (0.567, p<.000) and purchase experience (-0.162, p<.002), which supported the second hypothesis and partly supported the first hypothesis. The influence direction to intention to consult online community when making purchase decision is different between knowledge and experience.

Besides, involvement was positive related with intention to consult both family members (0.471, p<.05) and friends (0.800, p<.05) when making purchase decision. Product knowledge is negatively related to intention to consult family member (-0.309, p<.05). The relationship is not significant between

product knowledge and intention to consult friends. Purchase experience was negatively related to intention to consult both family members (-0.185, $p < 0.05$) and friends (-0.209, $p < 0.05$), when making purchase decision.

The results showed that adolescents with higher level of purchase involvement and product knowledge, and lower level of purchase experience were also with much intention to consult online community word-of-mouth when making purchase decision. Moreover, adolescents with higher level of purchase involvement, lower level of product knowledge, and lower level of purchase experience preferred to consult much from family members. In addition, the higher level of purchase involvement and lower of product experience preferred to consult friends much when making purchase intention. Nevertheless, knowledge was not related adolescents' intention to consults their friends.

SEM results also indicated that there is difference influence between knowledge and experience on adolescents' intention to consults others, when making purchase decision. This means that knowledge and experience can not be regarded as the same construct when discussing the adolescents' intention to consult others for purchase decision.

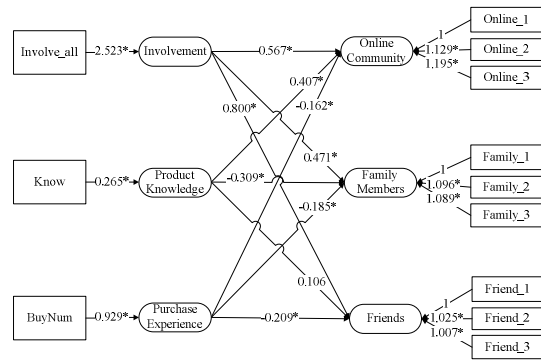


Figure 2. Result of SEM analysis

3.4 Gender Difference

As Table 4 indicated, there were statistically significant gender differences in the frequency of Internet using (days per week), and the hours spent using Internet. Females spent an average of 2.23 hours a day, 3.34 days a week. Males spent an average of 2.64 hours a day, 3.95 days a week. Males spent more time and showed greater frequently than females. Beside, there was gender difference in the purchase experience ($t=2.651$, $p=.008$) and product knowledge ($t=2.975$, $p=.003$). This showed that males had more using time on Internet and more MP3 or MP4 purchase experience than females. Accordingly, males also had more product knowledge than females.

In terms of the intention to consult family members, females had significant difference than male. The result displayed that females had more intention to consult family than males.

Table 3 Testing Results of Gender Differences in Online Behaviors

	All Participants (n = 321)	Male (n = 166)	Female (n = 155)
Product Knowledge			
M	3.336	3.458	3.206
s.d.	0.766	0.836	0.662
<i>p.</i>	<i>t</i> =2.975; <i>p</i> =.003**		
Involvement			
M	3.459	3.432	3.488
s.d.	0.734	0.791	0.668
<i>p.</i>	<i>t</i> =-0.688; <i>p</i> =.492		
How long you use Internet?			
M	5.519	5.617	5.413
s.d.	2.241	2.296	2.183
<i>p.</i>	<i>t</i> =0.818; <i>p</i> =.415		
How many days you use Internet in one week?			
M	3.656	3.949	3.342
s.d.	1.873	1.905	1.792
<i>p.</i>	<i>t</i> =2.935; <i>p</i> =.004**		
How many hours you use Internet in one day?			
M	2.442	2.639	2.232
s.d.	1.057	1.113	0.952
<i>p.</i>	<i>t</i> =3.503; <i>p</i> =.001***		
How many MP3 or MP4 players have you bought before?			
M	2.153	2.283	2.013
s.d.	0.921	0.996	0.814
<i>p.</i>	<i>t</i> =2.651; <i>p</i> =.008**		
Intention to consult online community			
M	9.156	9.139	9.174
s.d.	2.87	2.931	2.913
<i>p.</i>	<i>t</i> =-0.111; <i>p</i> =.912		
Intention to consult family members			
M	10.367	9.795	10.98
s.d.	2.966	3.107	2.683
<i>p.</i>	<i>t</i> =-3.647; <i>p</i> =.000***		
Intention to consult friends			
M	10.240	10.139	10.348
s.d.	2.608	2.679	2.534
<i>p.</i>	<i>t</i> =-0.720; <i>p</i> =.472		

p*<.05, *p*<.01, ****p*<.001; *M* (mean); *s.d.* (standard deviation)

4. DISCUSSION

Results of this study showed that adolescents with high level of product knowledge and purchase involvement preferred to choose the online word-of-mouth as information source when making purchase decision. Adolescents' purchase decision process may be influenced by word-of-mouth in online community since adolescents usually had high level of Internet usage and purchase involvement in MP3 and MP4 players. At the initiation stage of the purchase decision process, adolescent might considered the thinking of their surrounding peers and start to think about buying base on the information sources they received. At the decision stage, adolescents not only had thinking

of purchase, but also had higher level of purchase involvement and product knowledge. When adolescents have higher level of product knowledge, they might get more understanding about the feature of product. They would compare their knowing with others by exchanging their knowledge online.

Furthermore, the more purchase involvement, the more motivation they have to get consult online for purchase decision. They would be strongly influenced upon purchase decision making process from online community.

Purchase experience was negative related to the intention to consult with online community. Less purchase experience adolescents are more likely to consult with online community, and be influenced by online word of mouth.

Beside, the intention to consult with family members was negative related to purchase expertise; and positive related to purchase involvement. Family plays an importance role to adolescents and keeps them free from fears. When adolescents want to make purchase decisions, family members play an important role to straight out the purchase decision making process, especially when adolescents are with less sense of product or have no previous purchase experience. High level purchase involvement make adolescent to discuss with family when making purchase decisions. Accordingly, the high level of purchase involvement would lead adolescent to consult with family members.

There were positive relationships within purchase involvement, experience, and the intention to consult with friends. Adolescents with high level of purchase involvement might be interesting in and concern much about the products. These adolescents might with strong intention to discuss with friends for the product. They were influenced easily by friends in making the purchase decisions, if they are with high purchase involvement. In addition, there was negative relationship between purchase experience and the intention to consult with friends. It showed adolescent who had less purchase experience might strongly be influenced by friends, referred to the word of mouth in physical place. Adolescent who had no experience in purchase might have strongly motivation to listen to their surrounding others and peers, such as family members, friends, and online word of mouth which are usually experience sharing and posted by other experienced users.

It is interesting to discuss how product knowledge, purchase involvement, and purchase experience influence with the degree of purchase decision influence consult with online community, family, and friends. Empirical survey results of this study showed that adolescent who had highly product knowledge might understand product much than others. They would search information online to support their product purchase decision, but not consult with family members and friends who had less knowledge than themselves. According to this result, high product knowledge adolescents prefer to consult with online word-of-mouth, rather than friends and family members. Beside, adolescent who had highly purchase involvement might have strongly intention to understand the feature of products, because of their personal interesting and concern. They would likely to discuss with family members, friends, even online community members. So, adolescent who had high purchase involvement would be influenced by surrounding peer as well as online word-of mouth.

The negative relationship between purchase experience and intention to consult others showed that less purchase experience adolescents would listen to others' suggestion and influenced strongly by others.

This study also found that novice adolescent tended to consult others much, no matter online

community, family, and friend, than experienced and expert adolescents. Expert adolescents consulted much online word-of-mouth than experienced and novice adolescents. Experienced adolescents consulted much with family members than expert and novice consumers.

In this study, no significant relationship was found between knowledge and intention to consult friends. Future studies may focus on the interaction about product information among adolescents.

5. Limitation and Future research

According to participant of this study, it were only been tested in a high school. The range of participant should extend the sample to other high schools which have different subcultures to have enough representation.

Friends and family members are important relationships around people. It is an interest topic to have further discussion about how family construct influence the online purchase behaviors, or how adolescent's friendship and romantic relationship influence their purchase decisions.

APPENDIX: MEASUREMENT SCALES

A 10-item Zaichkowsky's (1985) Personal Involvement Inventory (PII) was used to measure the degree of purchase involvement.

The second part of questionnaire was used to measure the degree of purchase decision influence by online community, friend, and family. The sample questions of purchase decision influence scale are as following:

1. In bring up the idea that should I buy this product, I will consider the suggestion by online community.
2. In searching for and evaluating information about this product, I will consider the suggestion by online community.
3. In making the final decision, I will consider the suggestion by online community.
4. In bring up the idea that should I buy this product, I will consider the suggestion by family.
5. In searching for and evaluating information about this product, I will consider the suggestion by family.
6. In making the final decision, I will consider the suggestion by family.
7. In bring up the idea that should I buy this product, I will consider the suggestion by friends.
8. In searching for and evaluating information about this product, I will consider the suggestion by friends.
9. In making the final decision, I will consider the suggestion by friends.

The last part of questionnaire was used to measure the Internet usage and purchase behavior. The questions such as following:

1. How long you use Internet?

2. How many days you use Internet in one week?
3. How many hours you use Internet in one day?
4. Where have you usually buy your MP3 or MP4?
5. Single or in love?
6. Where you live?
7. Have you ever buy any MP3 or MP4, How many?
8. Gender
9. Birthday

- [12] Zaichkowsky, Judith Lynne, "Measuring the Involvement Construct," *Journal of Consumer Research*, (12),1985, pp.341-352.

REFERENCES

- [1] Gefen, D., Strub, D. W., & Boundreau, M. C., "Structural Equation Modeling and Regression: Guidelines for Research Practice, " *Communications of the Association for Information Systems* (4:7), 2000, pp.1-70.
- [2] Geuens, M., Pelsmacker, P. and Mast, G., "How family structure affects parent-child communication about consumption, " *Advertising and Marketing to Children*, January-March, ,2003, pp.57-62,
- [3] Jiang, J. J., Klein, G., & Carr, C. L., "Measuring Information System Service Quality: SERVQUAL from the Other Side, " *MIS Quarterly* (26:2), 2002, pp.145-166.
- [4] Kaufman, G., "Do gender role attitude matter? Family formation and dissolution among traditional and egalitarian men and women, " *Journal of Family Issues*, (21:1), 2000, pp.128-144.
- [5] McNeal, J., *Children as Consumers: Insights and Implications*, Lexington Books, New York, NY., 1987.
- [6] Moschis, G. P. and Churchill, G. A., "Consumer socialization: a theoretical and empirical analysis", *Journal of marketing research*,(15), November 1978, pp. 599-609.
- [7] Roedder, D., "Age differences in children's responses to television advertising : an information processing approach, " *Journal of Consumer Research*, June, 1981, pp.144-153.
- [8] Shim, S. (1996), "Adolescent Consumer Decision-Making Styles: The Consumer Socialization Perspective, " *Psychology & Marketing*, (13:6), 1996, pp.547-569.
- [9] Szybillo, G.J., Sosanie, A., "Family decision making: husband, wife and children", in Perreault, W.D. Jr (Eds),*Advances in Consumer Research*, Association for Consumer Research, Atlanta, GA,(4), 1977 pp.46-49.
- [10] Wackman, D. and Wartella, E., "A review of cognitive development theory and research and the implication for research on children's responses to television, " *Communication Research*, (4),1977, pp.203-204
- [11] Wang, S., Holloway, B.B., Beatty, S.E., Hill, W.W., "Adolescent influence in family purchase decisions: An update and cross-national extension, " *Journal of Business Research*, (60), 2007, pp.1117-1124.

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