

# Perceived Barriers for Older Adults' Shopping Channel Selection Toward Online Shopping

## Comparisons Between Different Business Models

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**Abstract.** The aim of this study is to understand perceived barriers for older adults to select novel shopping channel. Questionnaire survey was employed. Innovation resistance theory is served as the theoretical base for this study. Five innovativeness acceptance barriers (usage barrier, value barrier, risk barrier, traditional barrier, and image barrier) and three business models (online shopping oriented vs. TV shopping oriented vs. hybrid) were investigated. 108 valid respondents who are older than 50 years old and have online shopping experience participated in this study. The major results including: (1) The order of the barriers for older adults to adopt novel shopping business models is risk barrier, traditional barrier, image barrier, usage barrier, and value barrier. (2) There exist significant ( $p < 0.01$ ) different in traditional barrier and image barrier among different business models. (3) Value barrier, risk barrier, and traditional barrier have significant ( $p < 0.05$ ) impact on novel shopping business models acceptance.

**Keywords:** Older adults · Shopping channel · Perceived barriers · Business model

## 1 Introduction

Shopping behavior is an interesting topic in the marketing field. With the coming of EC (electronic commerce), issues related to shopping channel selection became more and more important, especially for online shopping. Scholars from difference fields paid more and more attention to the related issue. For example, many related researches from IS/IT perspective have been appear in EC related journal. International Journal of Electronic Commerce is a good example. However, most of the previous studies have been focused on younger customers (such as students), they serve younger as major potential market for online commerce. Indeed, with the coming of aging society, the role of older adults toward online commerce is becoming more and more critical. The percentage of older adults in Asia countries' population structure is listed in Table 1 [1]. From Table 1, we can see that older adult will becoming more and more important for consuming market. However, few study have been focused on the related topic. Therefore, this paper is focused on the barriers for the older adults' shopping channel

selection. Additionally, the difference between different business models (online shopping oriented vs. TV shopping oriented vs. hybrid) have also been investigated. The aim of this study is to understand perceived barriers for older adults to select novel shopping channel.

In addition to traditional in-store shopping, nowadays consumers always have other three shop channels in general. The first is pure online shopping which search, order, and

**Table 1.** Percentage of older adult in Asia countries

	2010	2015	2020	2025
Taiwan	10.9	12.5	15.7	19.4
Japan	22.8	26.6	29.2	30.7
China	8.6	10.1	12.4	14.3
Hong Kong	13.1	15.3	18.5	22.9
Korea	11.1	13.0	15.6	19.7
Singapore	7.2	8.9	10.9	13.2
Malaysia	4.8	5.6	6.9	8.5
Indonesia	6.2	6.6	7.8	9.4
Philippines	4.2	4.6	5.4	6.2
Thailand	8.5	9.9	11.8	14.6
Vietnam	5.5	5.8	6.9	8.9
India	5.3	6.0	6.7	7.7

pay are finishing online. The other one is buying through TV shopping channel, from TV platform consumer can understand the goods information and buying through telephone. The third one is that business (seller) who have bother online and TV shopping channel for consumers. This is defined as “hybrid” business model in present study.

The rest of the paper is organized as follows. Section 2 reviews related studies on older adults’ shopping channel acceptance and innovation resistance theory. Section 3 introduces the research method and design. Section 4 describes the data analysis results. Section 5 is the discussions of the data analysis results. Finally, Sect. 6 presents our conclusions.

## 2 Literature Review

### 2.1 Related Studies

Little previous studies have paid attention to the issues which related to older adults, online shopping and perceived barrier. Focused on older adults’ buying behaviors, Lim and Kim [5] indicated that in the context of TV shopping loneliness, parasocial interaction, and convenience are critical factors to understand older adults’ satisfaction with TV shopping. Lin found that the TV and online shopping values will affect users’ shopping channel selection [6]. In the study of Lian and Yen [4], based on UTAUT (Unified Theory of Acceptance and Use of Technology) and innovation resistance theory, they found that the major motivated factors affecting older adults toward online

shopping are performance expectation and social influence which is the same with younger. On the other hand, the major barriers include value, risk, and tradition which is different from younger. Therefore, older adults have their own characteristics toward shopping channel selection.

## 2.2 Innovation Resistance Theory

Innovation resistance theory was proposed by Ram in 1987 [7] to understand why innovation is resisted by user. It has been applied in various research issues, including online shopping and IT adoption [3]. Besides, Ram and Sheth [8] also indicated that five critical barriers which belonging two categories will against users to adopt an innovation. The two categories are functional and psychological. The five barriers are usage barrier, value barrier, risk barrier, image barrier, and tradition barrier. The front three barriers are belonging to functional barrier; the last two barriers are belonging to psychological. Above five barriers are employed in the present study to understand the barriers for older adults buying online.

## 3 Methodology

Survey research method was employed in this study. Older adults who older than 50 years old and taking courses in "Evergreen University" in Taiwan participated in this study. Six variables are included in this study including: usage barrier, value barrier, risk barrier, traditional barrier, image barrier, and use intention. The measurement items have been adapted from previous literatures to insure their reliability and validity. Besides, items which related to shopping experience have been designed to understand their previous shopping experience. Famous and general online shopping and TV shopping businesses or platforms have been listed on the questionnaire to be selected. Additionally, questionnaire has been revised by researchers and practical experts. Questionnaires were collected during class. Finally, 108 valid respondents who have online or TV shopping experience were included in our analysis.

## 4 Data Analysis

Demographic data is illustrated in Table 2. More female than male and the major age level is between 56–65 years old. Besides, in Table 3 we can find that 54 % respondents only have online shopping experiences, 28 % only have TV shopping experiences. Finally, 20 % have both of the shopping experiences (hybrid).

Regarding the validity and reliability testing. Confirmation factor analysis and Cronbach's alpha were employed in this study. The results indicated that the data have acceptable validity and reliability (the alpha value is larger than 0.7) [2] except tradition barrier, but it still in accept level ( $>0.5$ ) (Table 4). Following are data analysis results for the research questions.

**Table 2.** Demographic

		Number	Percentage
Gender	Male	46	43 %
	Female	62	57 %
	Total	108	100 %
Age	51–55	16	15 %
	56–60	37	34 %
	61–65	24	22 %
	66–70	18	17 %
	71–75	10	9 %
	Over 75	3	3 %
	Total	108	100 %

**Table 3.** Online or TV shopping experiences

Shopping channel	Number	Percentage
Online oriented	58	54 %
TV shopping oriented	28	26 %
Hybrid	22	20 %
Total	108	100 %

**Table 4.** Reliability testing

Variables	Usage barrier	Value barrier	Risk barrier	Tradition barrier	Image barrier	Intention
Cronbach’s Alpha	0.90	0.76	0.75	0.56	0.80	0.95

**4.1 Barriers for Older Adults Across Different Business Models**

From Tables 5 and 6, we can see that the order (from high to low) of the five barriers for older adults buying online is risk barrier, traditional barrier, image barrier, usage barrier, and value barrier (the value is between 1 to 5, the lower the value is representing higher barrier). Besides, the orders of the barriers are various across different business models (Table 6).

**4.2 Different Barriers Between Business Models**

ANOVA analysis is employed to see the significant barrier difference between business models. From Table 7, we can see that there exist significant ( $p < 0.01$ ) different in traditional barrier and image barrier among different business models. For tradition

**Table 5.** Barriers for older adults across different business models

Barrier	Business model	Mean	S.D.
Usage barrier (U)	Online shopping	3.63	0.63
	TV shopping	3.64	0.71
	Hybrid	3.68	0.39
	Total	3.64	0.61
Value barrier (V)	Online shopping	3.77	0.65
	TV shopping	3.63	0.70
	Hybrid	3.55	0.62
	Total	3.69	0.66
Risk barrier (R)	Online shopping	2.05	0.59
	TV shopping	2.12	0.70
	Hybrid	2.08	0.66
	Total	2.07	0.63
Tradition barrier (T)	Online shopping	2.58	0.63
	TV shopping	2.23	0.54
	Hybrid	2.89	0.63
	Total	2.55	0.64
Image barrier (I)	Online shopping	2.79	0.86
	TV shopping	2.52	0.76
	Hybrid	3.23	0.84
	Total	2.81	0.86

**Table 6.** Barrier comparison between different business models

Business model	The order of adoption barrier (From high to low)
Online shopping	R > T > I > U > V
TV shopping	R > T > I > V > U
Hybrid	R > T > I > V > U
Total	R > T > I > U > V

**Table 7.** Results of ANOVA analysis

	F-value	p-value	Post Hoc testing
Usage barrier	0.06	0.95	N/A
Value barrier	1.07	0.35	N/A
Risk barrier	0.11	0.90	N/A
Tradition barrier	7.29	0.00*	TV shopping vs. online shopping
			TV shopping vs. hybrid
Image barrier	4.51	0.01*	TV shopping vs. hybrid

\* p &lt; 0.01

barrier the difference were between TV shopping, online shopping and hybrid. However, the image barrier is between TV shopping and hybrid.

### 4.3 The Relationships Between the Barriers and Use Intention

Four multiple regressions were proposed to understand the relationships between the barriers and use intention toward different business models (online shopping, TV shopping, Hybrid, and total). The independent variables are the five barrier, and the dependent variable is the intention to adopt online shopping. Overall, the four models are significant and have acceptable explanatory power for user behavior (the adj-R<sup>2</sup> is between 0.55–0.61) (Table 8). Additionally, from Table 8, we can find that the critical barrier are various across different business model. Finally, value barrier, risk barrier, and traditional barrier have significant ( $p < 0.05$ ) impact for older adults to shop on these novel shopping channels (all samples). Additionally, the explanatory power (Adj-R<sup>2</sup>) is 57 %.

**Table 8.** Results of regressions analysis

	Adj-R <sup>2</sup>	Critical barrier ( $p < 0.05$ )
Online shopping	0.55	Usage barrier, value barrier
TV shopping	0.61	Value barrier
Hybrid	0.59	Value barrier, risk barrier
Total	0.57	Value barrier, risk barrier, traditional barrier

## 5 Discussions

From the results, we can find that for older adults, the barrier for their acceptance of shopping channel are various across different business models. The major barriers for these novel shopping channels are risk barrier and tradition barrier (Table 5). This is because when people face new innovation, they will have uncertainty therefore they will have higher risk barrier (the highest risk barrier is online shopping, TV shopping have lowest risk barrier). Besides, most of people (especially for old adults) will familiar traditional physical shopping channel, therefore they will have higher tradition barrier.

Which business models have significant different? From the results of ANOVA analysis (Table 7), we can find that the major differences are tradition barrier and image barrier. The results meant that for older adults, psychological barriers have significant difference between different business models.

Finally, from the results of regression analysis (Table 8), we can find that innovation resistance theory is suitable for understanding older adults' acceptance of difference shopping channel (the R<sup>2</sup> are acceptable). Additionally, Table 8 indicates that functional barriers become critical for understand older adults' acceptance of difference shopping business model.

## 6 Conclusions

This study have three major findings which are listing below:

- (1) The order (from high to low) of the five barriers for older adults adopting new shopping novel business models is risk barrier, traditional barrier, image barrier, usage barrier, and value barrier.
- (2) There exist significant ( $p < 0.01$ ) different in traditional barrier and image barrier among different business models for older users.
- (3) Innovation resistance theory is suitable for understanding older adults' innovation acceptance. Besides, value barrier, risk barrier, and traditional barrier have significant ( $p < 0.05$ ) impact on novel shopping business models acceptance. The explanatory powers ( $\text{Adj-R}^2$ ) are between 0.55–0.61.

Regarding the limitations of this study, first of all, this study only focused on the older adults who take class in Evergreen University. Other general older adults are not included in our survey. Second, different countries have various shopping environment if the results from Taiwan can be applied to difference countries need to be investigated in the future.

Finally, this study provides advanced understandings regarding older adults to shop online. Findings can served as the references for academic area in conducting advanced research and practical area in providing better services for older adults to shop online.

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