Study of consumer e-shopping behavior differences during the Covid-19 epidemic

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Abstract

The aims of this study are to understand the differences and consumers' behavior change were on both of frequencies of searching and e-shopping, and the amount spent on once online shopping before and during the Covid-19.

This study uses the descriptive statistics analysis and Chi-Squire analysis statistical analysis to calculation the received questionnaires data. The results shown in the differences between the consumers e-shopping behavior between before and during Covid-19.

Keyword: Chi-Squire analysis

Background and Review

The home economy (consumption at home) requires indicated that the consumers are not need to go out when they want buy something. Just move their fingers to break the constraints of space and time to shopping on the internet easily.

Online shopping, it to simplifies the process of shopping. The consumers are not need to go to a physical store, as long as their place such home, office, anytime can an

order for use a credit card or cash on delivery, then the goods will be sent to your home or designated place.

According to Taiwan Network Information Center (TWNIC, 2019), the people use the communication equipment, there are 93.2% people had ever been on the internet by use home-telephone and cellphone (Table 1).

Table 1   The distribution about uses of communication equipment

	Use of communication equipment			
	All n=2134	**pure home-telephone n=94**	**Home-telephone + cellphone n=1623**	**pure cellphone n=417**
Had ever been to Internet	89.6%	21.6%	93.2%	91.0%
Internet access rate in the past six months	88.8%	15.5%	92.5%	91.0%
Wireless network access rate in the past six months	87.5%	12.8%	91.5%	89.1%
Mobile network access rate in the past six months	85.2%	9.3%	88.8%	88.6%
Wireless zone access rate in the past six months	42.0%	6.0%	44.6%	40.3%

Sources: Taiwan Network Information Center, TWNIC (2019)

Addition, the high to 92.5% people are internet access rate in the past six months also used the home-telephone and cellphone. And both of the wireless network and Mobile network access rate in the past six months, which were 91.5% and 88.8%, separately.

As the figure 1 shown that the internet services' requirements by people' need, the firstly ranking is the instant messaging. However, the people use to e-shopping that was belongs to the sixth ranking for the internet services' requirements. This

meaning is the e-shopping use the internet, which is a way of habitual consumption.
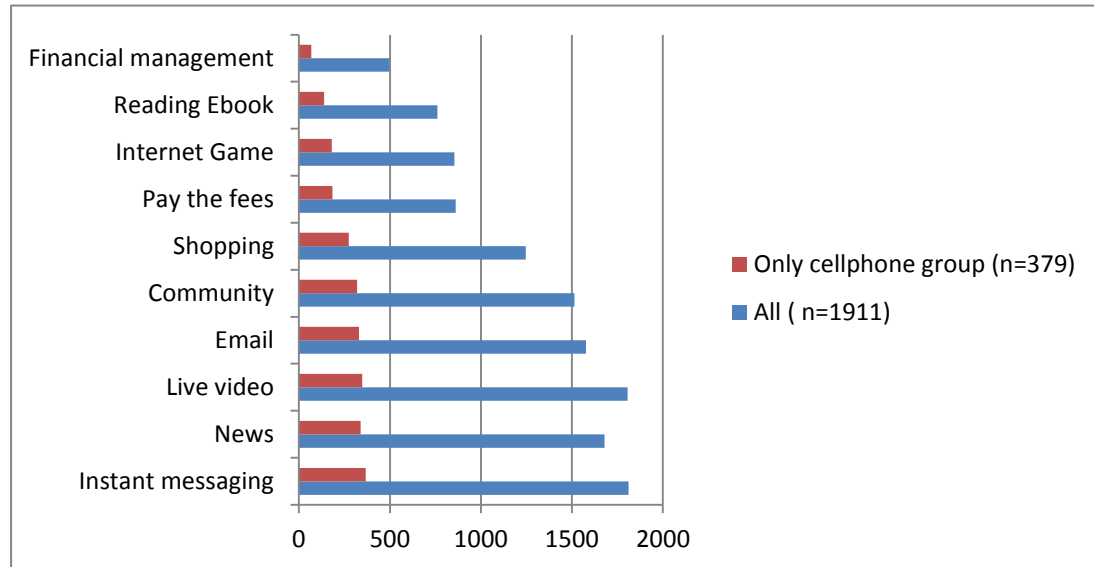
Sources: Taiwan Network Information Center, TWNIC (2019)

Figure 1   The internet services' requirements by people' need

In addition, the different generation use the internet had a significance increase were the 12-23 years old and 24-38 years old two group, separately, namely generation Z and X (Figure 2).
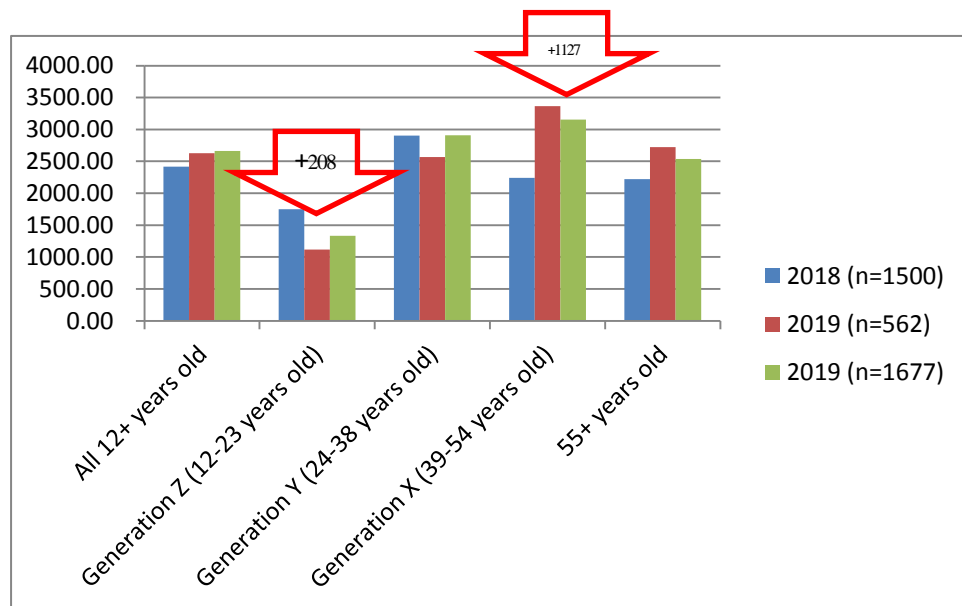
Figure 2   Average monthly online purchase amount

Sources: Taiwan Network Information Center, TWNIC (2019)

Online shopping indicates electronic commerce to buy products or services directly from the seller through the Internet(Rahman et al. 2018).   Online shopping has unique characteristics. Huseynov and Yıldırım (2014) emphasized that the lack of physical interaction tends to be the critical impediment in online retail sales followed by the privacy of individual information and security of financial transactions over the Internet. Demangeot and Broderick (2010) also revealed that perceived ease of use does not affect the behavioral pattern in this case rather influenced by security and privacy issues.

However, this development needs some more understanding related to the consumer's behavior during the Covid-19. Consumer behavior research identifies a general model of buying behavior that depicts the processes used by consumers in making a purchase decision (Vrender, 2016). Kuester (2012) in his study considers, consumer behavior as the study of individuals, groups, process and organizations they use to secure, select, and arrange of experience, products, services, experiences, or ideas to satisfy the consumer and society.

Test Analysis

This research adopts the Chi-Square test, which mainly tests the respondents' background variables in the frequencies of searching the Internet before and during of the COVID-19, the frequencies of shopping the Internet before and during of the COVID-19, the frequencies of shopping the Internet before and during of the COVID-19 difference.

If the chi-square test is significant, then further make a cross-analysis table with

the background variables to understand the difference.

First, result of the frequencies of searching the Internet before and during of the COVID-19 by adopt Chi-Square test, frequencies of both searching the Internet before and during the COVID-19 were had significance different (Table 2).

Then, the results of cross analysis present that frequencies of searching the Internet during the COVID-19 were increased on the Once every week group.

Table 2   Chi-Square test of cross analysis the frequencies of searching the Internet before and during of the COVID-19

Frequencies of searching the Internet during the COVID-19	Frequencies of searching the Internet before the COVID-19					Total
	everyday	Once on every 2 days	Once on every 3 days	Once on every week	More than once on a week	
everyday	12	0	6	0	18	36
	(1.44)	(3.6)	(6.48)	(14.4)	(10.08)	(36)
Once on every 2 days	0	12	6	6	6	30
	(1.2)	(3)	(5.4)	(12)	(8.4)	(30)
Once on every 3 days	0	12	18	0	0	30
	(1.2)	(3)	(5.4)	(12)	(8.4)	(30)
Once on every week	0	6	24	96	12	138
	(5.52)	(13.8)	(24.84)	(55.2)	(38.64)	(138)
More than once on a week	0	0	0	18	48	66
	(2.64)	(6.6)	(11.88)	(26.4)	(18.48)	(66)
Total	12	30	54	120	84	300
	(12)	(30)	(54)	(120)	(84)	(300)

Pearson Chi-Squire: 341.079

Degree freedom: 16

p: 0.000***

note:

① "***", p<0.001

② Without brackets are observed value, ( ) expected value.

As shown on Table 3, the Chi-Square analysis result of the frequencies of

shopping the Internet before and during of the COVID-19, they between of both were had significance different (p<0.000).

The results of cross analysis then present that frequencies of shopping the Internet before and during of the COVID-19 were increased on the more than once on a week group.

Table 3   Chi-Square test of cross analysis the frequencies of shopping the Internet before and during of the COVID-19

Frequencies of shopping the Internet during the COVID-19	Frequencies of shopping the Internet before the COVID-19						Total
	everyday	Once on every 2 days	Once on every 3 days	Once on every week	Once on every two week	More than once on a week	
everyday	6	0	0	0	0	0	6
	(0.12)	(0.24)	(0.24)	(0.84)	(0.72)	(3.84)	(6)
Once on every 2 days	6	0	0	0	0	0	6
	(0.12)	(0.24)	(0.24)	(0.84)	(0.72)	(3.84)	(6)
Once on every 3 days	0	6	6	6	6	12	36
	(0.72)	(1.44)	(1.44)	(5.04)	(4.32)	(23.04)	(36)
Once on every a week	0	0	0	30	12	0	42
	(0.84)	(1.68)	(1.68)	(5.88)	(5.04)	(26.88)	(42)
Once on every two week	0	0	0	6	6	18	30
	(0.6)	(1.2)	(1.2)	(4.2)	(3.6)	(19.2)	(30)
More than once on a week	0	0	6	0	12	162	180
	(3.6)	(7.2)	(7.2)	(25.2)	(21.6)	(115.2)	(180)
Total	6	12	12	42	36	192	300
	(6)	(12)	(12)	(42)	(36)	(192)	(300)

Pearson Chi-Squire: 678.284

Degree freedom: 25

p: 0.000***

note:

① "***", p<0.001

② Without brackets are observed value, ( ) expected value.

According the Chi-Square analysis, shown on Table 4, result of the before and during of the COVID-19, the amount spent on once online shopping, they both were had significance different.

More further to process the cross analysis, the results of cross analysis present that the amount spent on once online shopping 100-500, the differences more than other groups.

Table 4   Chi-Square test of cross analysis the before and during of the COVID-19, the amount spent on once online shopping

During the COVID-19, the amount spent on once online shopping	Before the COVID-19, the amount spent on once online shopping				Total
	≦100	101-500	501-1000	>1000	
≦100	24	6	0	0	30
	(2.4)	(13.8)	(9)	(4.8)	(30)
101-500	0	102	12	0	114
	(9.12)	(52.44)	(34.2)	(18.24)	(114)
501-1000	0	24	54	18	96
	(7.68)	(44.16)	(28.8)	(15.36)	(96)
>1000	0	6	24	30	60
	(4.8)	(27.6)	(18)	(9.6)	(60)
Total	24	138	90	48	300
	(24)	(138)	(90)	(48)	(300)

Pearson Chi-Squire: 407.659

Degree freedom: 9

p: 0.000***

note:

① "***", $p < 0.001$

② Without brackets are observed value, ( ) expected value.

Conclusion

In addition to using different trading tools with technological advancement, the way

people consume will also change their consumption habits and frequency due to the influence of the external environment. In 2020, due to the emergence of COVID-19 disease, the chances of people staying at home will increase, and the number of online consumption and the amount of consumption will also increase. This study confirmed the significant relationship between the time spent at home and the number of consumptions, as well as the amount of e-shopping.

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