TECHNOLOGY IMPACT: PERCEPTIONS OF HAIR SALON EMPLOYEES TOWARD USING TABLET COMPUTERS IN WORKPLACE

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Abstract - Employees of industries, including the hair and beauty industry, increasingly use tablet computers in their workplace. This study aims at investigating perceptions of hair salon employees' perceptions toward the impact of using tablet computers in the workplace. Based on the results of a focus-group interview with six hair stylists conducted by the researchers, a questionnaire was then developed to investigate hair salon employees' perceptions toward using tablet computers in workplace. The target audience of the questionnaire included the hair salon's employees in northern, central, southern, and eastern Taiwan. A total of 700 questionnaires were sent by mail, and 398 were returned. This study found three sets of impact factors for using tablet computers in hair salons: (1) effective communication with consumers, (2) stimulating consumption, and (3) friendship/trust building with consumers. Overall, the employees who used tablet computers more frequently in workplace gave higher scores than those using tablet computers less frequently. The employees in southern Taiwan gave higher scores than the others toward using tablet computers in workplace. It was suggested hair salon's employees use tablet computers in workplace to assure effective communication and friendship/trust building with consumers to promote business.

Index Terms - Tablet computers, Technology, Impact factor, Hair salon.

I. INTRODUCTION

As tablet technology continues to improve, it is becoming increasingly integrated into the workplace. The tablets' ease of use, light weight and small size certainly will continue to create niche usage in the workplace. In fact, the New York Times reported that tens of millions of tablets would be in use in America's workplaces by 2015 [1]. According to National Communications Commission (NCC) in Taiwan, the penetration rate of tablet computers reaches 25.4% by the third quarter of 2014 [2]. While the number of tablet computer users in workplace is on the increase, studies have pointed out that industries are increasingly demanding of technology to deliver improved customer service [3] [4] [5].

As use of tablet computers in the workplace continues to grow, how employees of industries, including the hair-salon industry, perceive toward use of technology might influence their relationship with customers. Previous studies indicated that people had might perceptions toward technology use. Whenever new technologies emerged, most of the times, people tend to fantasize that the use of the new technology would uplift or brighten up their work or life [6] [7]. Many researchers argued that while technological and scientific progress is indeed an astonishing thing, its relationship with human progress is more aspiration than established fact [6] [8].

Thus, with an intend to identify the impact factors of technology in hair salons, this study conducted a case study to explore the perceptions of hair-salon employees' perceptions toward using tablet computers in the workplace.

II. RESEARCH PURPOSE AND OBJECTIVES

The purpose of this study was to investigate perceptions of hair salon employees toward the impact of using tablet computers in the workplace so as to identify the impact factors of technology.

The objectives of this study were to understand (1) the demographics of hair salon employees and their experience of using tablet computers in workplace; (2) hair salon employees' perceptions toward using tablet computers in workplace; and (3) how the different demographic groups varied toward using tablet computers in workplace.

III. RESEARCH METHODS

The research methods of this study included: (1) conducting a focus-group interview with six hairdressers and (2) surveying hairdressers in the northern, central, and southern Taiwan. A survey questionnaire used in this study contained: (1) nine demographics items, and (2) 25 perception items. A five-point Likert-type scale including the 25 items was included to allow respondents to rate each items regarding hair salon employees' perceptions toward the impact of using tablet computer in the workplace.

Based on the results of the focus-group interview with six hair stylists conducted by the researchers, a questionnaire was then developed to investigate hair salon employees' perceptions toward using tablet computers in workplace. The target audience of the questionnaire included the hair salon's employees in

northern, central and southern Taiwan. Using the statistics package of SPSS 12.0 for Windows, the researchers performed descriptive, reliability, t-test, and One-way ANOVA with Scheffé post-hoc test for data analyses.

IV. RESULTS

A. Focus-Group Interview

The focus-group interview with six hair stylists was transcribed and analyzed. The results were listed below. Overall, the six hair stylists were positive toward using tablets in workplace.

They thought tablets can be used for effective communication, stimulating consumption, and building friendship and trust with consumers.

Table 1. Results of the focus interview

	A. Effective communication
1	Show fashion information to communicate with customers.
2	Show hair-style information to reduce disputes with consumer.
3	Show hair-color information to confirm consumer's choice.
4	Show fashion information to reach consensus with consumers.
5	Show fashion information to increase interaction with consumers
6	Show pricelist to communicate for convenience sake.
7	Show perming, dying, and cutting photos to assure effectively communication with customers.
8	Show hair-style catalog on tablet for convenient communication.
9	Show hair information to educate consumers to maintain hair style on their own.
10	Show hair information to assure good service.
	B. Stimulating consumption
1	Show promotion information to stimulate consumption.
2	Keep consumers' records for next consumption.
3	Show hair-style catalog.
4	Show fashion information to satisfy consumers' curiosity.
5	Show fashion information to stimulate consumption
6	Show hair information to attract elder consumers' curiosity
7	Use a tablet DM is better than a paper DM.
	C. Building friendship/trust
1	Consumers use a tablet to kill time while waiting
2	Hair stylists use a tablet to improve or increase their job performance
3	Using tablets increases talking topics with consumers
4	Using tablets can refresh consumers' minds toward hair stylists' service
5	Easier for hair stylists to look for fashion information to make sure what consumers want.
6	Using tablets to communicate with consumers add charms to the hair stylists

B. Survey

According to the above results of the focus-group interview, a questionnaire then was developed and distributed to survey hair salon employees' perceptions toward the impact of using tablet computers in the workplace. This survey included seven demographic questions and a scale containing 23 questions divided into three subscales. The 23 questions in the scale were shown in Table 1. As shown in Table 1, the subscales were: (1) effective communication, (2) stimulating consumption, and (3) Building friendship/trust.

(a) Validity and Reliabilities of the questionnaire

Content and face validity for the questionnaire were established by a panel of three faculty members associated with beauty salons. The scale were pilot tested for reliability with 30 hair stylists. Reliabilities of the total scale and subscales for the pilot test and for the study are displayed in Table 2.

Cronbach's alpha was conducted on the three subscales and total scale of hair salon employees' perceptions toward the impact of using tablet computers in the workplace. In the pilot test, the three subscales and the total scale had strong reliability ranging from .84 to .93, which were shown in Table 2. Thus, the 23 questions were kept in the survey. A total of 700 questionnaires were sent by mail, and 398 were returned. The returned questionnaires were then conducted a Cronbach's alpha test to assure the reliabilities of the total scale and subscales. The three subscales and total scale had strong reliability ranging from .84 to .93 and .83 to .95.

Table 2. Reliabilities of the perception scale and sub scales

Subscale	Pilot test Cronbach's α	Study Cronbach's α	Item #
(1)Effective communication	.86	.90	10
(2)Stimulating	.84	.83	7

consumption				Total scale	.93	.95	23
(3)Building friendship/trust	.86	.86	6				

(b) Hair salon employees' perceptions for subscales and total scale

"Effective communication" received the highest mean (4.08) among the three subscales, followed by the mean (4.02) of "building friendship/trust. The lowest mean (3.98) was for the subscale "stimulating consumption." Hair salon employees valued "effective communication" the most as the impact of using tablet computers in workplace.

Table 3. Means and standard deviations of the respondents' perceptions for subscales and total scale (n=398)

Subscale	Mean	SD
(1)Effective communication	4.08	.51
(2)Stimulating consumption	3.98	.54
(3)Building friendship/trust	4.02	.57
Total scale	4.04	.50

(c) Hair salon employees' demographics and experience of using tablet computers in workplace

Table 4 showed the number and percentage of the hair salon respondents' demographics and experience of using tablet computers in workplace. More than 80% of the respondents were females, 62.5% were 20-30 year-old, 64.7% were unmarried, 53.6% were hair stylists, 54% owned high school degree, near 50% had monthly income between NT$10001 and NT$30000, 55.4% used tablet computers in workplace, 38.6% used tablets in workplace around 1-2 hours a day, and 70.8% were located in central Taiwan.

Table 4. Number and percentage of the hair salon employees' demographics and experience of using tablet computers in workplace (n=398)

Demographic	Item	#	%
Gender	Male	65	17.4
	Female	308	82.6
Age	20-30 year-old	238	62.5
	31-40 year-old	114	29.9
	41-50 year-old	25	6.6
	51 year-old	4	1.0
Marriage	Unmarried	251	64.7
	Married	111	28.6
	Other	26	6.7
Job title	Store manager	33	8.5
	Hair stylist	208	53.6
	Assistant	102	26.3
	other	45	11.6
Education level	High school	207	54
	college	176	46
Monthly income	Under NT$10000	64	17.0
	NT$10001~20000	93	24.7
	NT$20001~30000	92	24.5
	NT$30001~40000	77	20.5
	Above NT$40001	50	13.3
Hours of using tablets in workplace per day	Under 0.5 hr/day	43	20.5
	1-2 hrs/day	81	38.6
	3-4 hrs/day	60	28.6
	Above 5 hrs/day	26	12.4
Use of tablets in workplace	Yes	210	55.4
	No	171	44.6
Divisions in Taiwan	Northern	68	17.7
	Central	272	70.8
	Southern	34	8.9
	Eastern	10	2.6

(d) How the different demographic groups varied toward using tablet computers in workplace

Tests were conducted to identify respondents' perceptions toward using tablet computers in workplace by demographics and their experience with use of tablet computers. No significant differences were found by gender, age, marital status, monthly income, education level and job titles. However, it was found that those who used tablets in workplace gave significantly higher ratings than those who did not use tablets in workplace on the three subscales of effective communication, stimulating consumption, building friendship/trust, and the total perception scale (Table 5).

Table 5. Description of respondents' perceptions between those used or not used tablet computers in workplace

Subscale	Yes Mean (SD)	No Mean (SD)	t value
(1)Effective communication	4.19	4.10	4.25*
(2)Stimulating consumption	4.10	3.86	4.39*
(3)Building friendship/trust	4.11	3.91	3.46*
Total scale	4.14	3.92	4.38*

In addition, significant differences were found on respondents' perceptions by various hours of using tablets in workplace (see Table 6). Those who used tablets 3-4 hours/day had significant higher rating than those who used tablets less than 0.5 hours/day for the subscales of effective communication, stimulating consumption, building friendship/trust, and the total perception scale.

Table 6. Description of respondents' perceptions by various hours of using tablets in workplace

Subscale	<0.5 hr Mean (SD)	1-2 hrs Mean (SD)	3-4 hrs Mean (SD)	>5 hrs Mean (SD)	F value
(1)Effective communication	3.98 (.50)	4.19 (.47)	4.10 (.40)	4.25 (.57)	5.07*a
(2)Stimulating consumption	3.83 (.52)	4.10 (.54)	3.86 (.43)	4.39 (.61)	6.40*b
(3)Building friendship/trust	3.92 (.62)	4.10 (.57)	3.91 (.46)	3.46 (.66)	2.08
Total scale	3.92 (.50)	4.14 (.48)	3.92 (.38)	4.38 (.56)	5.05*c

*a: those who used tablets 3-4 hrs/day had significant higher rating than those who used tablets less than 0.5 hrs/day

*b: those who used tablets 3-4 hrs/day had significant higher rating than those who used tablets less than 0.5 hrs/day

*c: those who used tablets 3-4 hrs/day had significant higher rating than those who used tablets less than 0.5 hrs/day

Moreover, significant differences were found on respondents' perceptions by various divisions in Taiwan (see Table 7). Those who worked in southern Taiwan had significant higher rating than those who worked in northern and central Taiwan for the subscales of effective communication, stimulating consumption, building friendship/trust, and the total perception scale.

Table 7. Description of respondents' perceptions by various hours of using tablets in workplace

Subscale	North Mean (SD)	Central Mean (SD)	South Mean (SD)	East Mean (SD)	F value
(1)Effective communication	4.02 (.51)	4.07 (.52)	4.42 (.37)	4.03 (.38)	5.62*a
(2)Stimulating consumption	3.92 (.57)	3.96 (.55)	4.34 (.40)	4.04 (.43)	5.23*b
(3)Building friendship/trust	3.96 (.56)	4.00 (.59)	4.30 (.47)	4.16 (.33)	3.34*c
Total scale	3.98 (.50)	4.02 (.51)	4.36 (.35)	4.07 (.33)	5.47*d

*a: those who worked in southern Taiwan had significant higher rating than those who worked in northern and central Taiwan
*b: those who worked in southern Taiwan had significant higher rating than those who worked in northern and central Taiwan
*c: those who worked in southern Taiwan had significant higher rating than those who worked in northern and central Taiwan
*d: those who worked in southern Taiwan had significant higher rating than those who worked in northern and central Taiwan

CONCLUSIONS AND RECOMMENDATIONS

Most of the hair salon employees were unmarried females, aged 20-30 who worked over 7 years, had high school diplomas, earned NT$10,001~30,000 monthly, and used tablet computers for over 1 year in workplace. Over half of the hair salon employees used tablet computers in workplace and nearly forty percent of them used tablet computers 1-2 hours daily in workplace. Based on the hair salon employees' perceptions toward using tablet computers in workplace, using tablet computers can achieve the purpose of "effective communication" more than "stimulating consumption" and "building friendship/trust with consumers." The demographics, such as gender, age, marital status, monthly income, education level, job titles did not affect hair salon employees' perceptions toward using tablet computers in workplace. Hair salon employees who used tablet computers 3-4 hours daily in workplace gave higher scores than those using tablet computers less than 0.5 hour on the overall perceptions, "effective communication," "building friendship/trust," and "stimulating consumption" towards using tablet computers in workplace. Hair stylists of the hair and beauty salons in southern Taiwan gave higher scores than those who in northern and central Taiwan on the overall perceptions, "effective communication," "building friendship/trust," and "stimulating consumption" towards using tablet computers in workplace. Based on the above results, the researchers suggested hair salon's employees use tablet computers in workplace to assure effective communication with consumers, friendship/trust building with consumers and increasing consumption. As tablet technology continues to improve, it is becoming increasingly integrated into the workplace. Hair salon employees should grasp the opportunity and use the tablet technology to effectively communicate, stimulate consumption, and build friendship and trust with customers.

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