

Analysis of the Key Success Factors of Self-Service Technology to use in Service Industry in Taiwan

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Abstract - In Taiwan, the service delivery system, customers not only interact with the personnel but also with the environment. For examples, using the internet bank transfers and automatic deposit slips, ATM cash machines, high speed rail station and Metro stations of automatic ticketing machines, automatic public and private parking lots payment machines, self-service gas stations, discount stores and supermarket price checker, vending machines and so on. This research will discuss with the important factors of self-service technology and customer's perceived value successfully.

Purpose –Due to the technology and advances in information technology (IT) services, making self-service technology is not only generally more integrated into people's daily life and work now. This study aims to analyze the factors of self-service technology that can create competitive advantages for the service industry in Taiwan. This research has four purposes: (1) verify the relationship between the success factors and customers perceived value to use self-service technology in service industry in Taiwan. (2) examine whether customer's perceived value has mediating effect. (3) understand customer's intentions to use SST. (4) provide academic and practice to use self-service technology in the future.

Design/ Methodology /approach –This research on the theory of planned behavior (TPB) is an extension of the widely accepted theory of reasoned action (Ajzen 1985). TPB builds on existing attitudinal theories by proposing that perceived behavioral control is a necessary antecedent to the prediction of intentions and behavior (Collier & Sherrell 2010). In order to test the conceptual framework (Figure 1), to develop a survey consisting of 26 items to suit the measures for each construct were adapted, to facilitate data collection, adopted convenience sampling of this study, with the working of each item slightly changed to apply to the particular self-service technology. Customers who had been used the one of self-service technology experience in Taiwan completed the questionnaire survey. Then to test the mediation of customer's perceived value, following Baron and Kenny's (1986) recommendations to examine the direct and indirect effects on perceived value. The sampling method resulted in a total of 450 (80.2%) valid responses to the questionnaires. In terms of gender, 57.8% of the respondents were female while 42.2% were male. The biggest group of respondents in terms of age was 25-45 (92.5%). A 5-point Likert scale was used to measure each of the constructs in the model. The questionnaire was tested and found to have high reliability and correlations, as shown in Table 1.

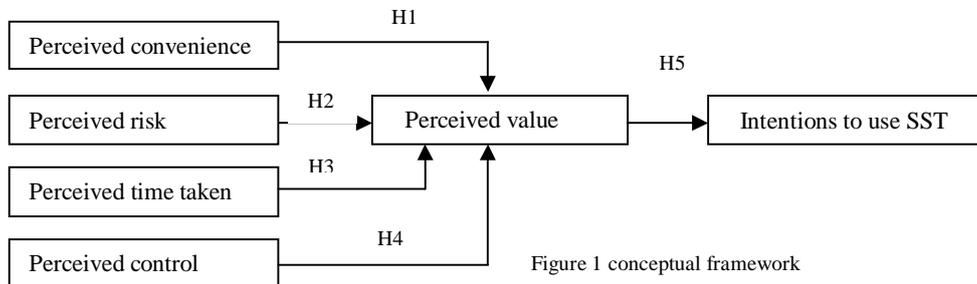


Figure 1 conceptual framework

- H1: A customer's perceived convenience will have a positive relationship with the customer perceived value.
- H2: A customer's perceived risk will have a positive relationship with the customer perceived value.
- H3: A customer's perceived time taken will have a positive relationship with the customer perceived value.
- H4: A customer's perceived control will have a positive relationship with the customer perceived value.
- H5: A customer's perceived value with a self-service technology will have a positive relationship with the intention to use an SST in the future.

Table 1 Means, standard deviations and correlations of constructs for users of SST

	Items	Cronbach α	Mean	Sd.	1	2	3	4	5	6
1. Perceived convenience	3	0.671	4.33	0.529	—					
2. Perceived risk	5	0.832	3.70	0.667	0.082*	—				
3. Perceived time taken	5	0.730	4.21	0.403	0.386**	0.133**	—			
4. Perceived control	6	0.664	4.18	0.391	0.366**	0.265**	0.423**	—		
5. Perceived value	4	0.604	4.15	0.413	0.274***	0.250***	0.350***	0.322***	—	
6. Use intention	3	0.711	4.34	0.466	0.565**	0.172**	0.557**	0.485**	0.428***	—

Cronbach α : 0.604~0.832 > 0.6 (Bagozzi & Yi, 1988); *p<0.05, **p<0.01, ***p<0.001

Findings – The results showed that perceived convenience, perceived risk, perceived time taken, and perceived control do impact the intentions of customers to use an SST in the future in the service industry in Taiwan. However, their impact was mediated through the constructs of customer’s perceived value, higher SST perceived value and increased SST usage intentions, as shown in Table 2. In Taiwan, customer’s perceived time taken is the most important key factor of SST to use in service industry.

Table 2 Structural framework test results for users of SST

	Hypothesized relationship	Standardized estimate	t-values	p-values	R ²	Hypothesis supported
H1	Perceived convenience → Perceived value	0.274	5.938	0.000***	0.075	Yes
H2	Perceived risk → Perceived value	0.285	6.143	0.000***	0.081	Yes
H3	Perceived time taken → Perceived value	0.350	7.785	0.000***	0.123	Yes
H4	Perceived control → Perceived value	0.322	6.990	0.000***	0.104	Yes
H5	Perceived value → Use intention	0.428	9.773	0.000***	0.183	Yes
Multiple regression						
	Perceived convenience → Perceived value	0.068	1.153	0.250		
	Perceived risk → Perceived value	0.081	1.436	0.152		
	Perceived time taken → Perceived value	0.103 (1)	1.831	0.068*		
	Perceived control → Perceived value	-0.016	-0.232	0.817		
R ² = 0.249						

*p<0.1, **p<0.01, ***p<0.001; (1): Relative influence power

Research Results - In this study to understand of what criteria are necessary to evaluate customer’s intentions to use an SST in the future in Taiwan. From this research, a customer’s perceived convenience, perceived risk, perceived time taken, perceived control were found to be variables associated with what customers perceived value form an SST. However, this research found that perceived time taken has a much stronger influence customer’s perceived value.

Managerial implications – SST development is rapid and a growing trend of service encounter in Taiwan. In this research found that a customer’s perceived convenience, perceived risk, perceived time taken, and perceived control were influence through mediating variables rather than as a direct link. A customer's perceived value will be more important, it will increase the willingness to use these benefits.

Limitations and future research – The expansion of this research questionnaire sample size, the internal and external validity is limited. According to the research, different service delivery system of SST to use that can find more influence factors.

Keywords self-service technology, theory of planned behavior, perceived value, intentions