

Examination on the Relation among Untact Service Characteristics in Hotels, Service Convenience, and Customer Satisfaction

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Abstract

The purpose of this study is to see how untact service of a hotel influences on the service convenience recognized by a customer and also how service convenience recognized by a customer affects on customer satisfaction to come up with plans for utilizing untact service of a hotel and plans for expansion in the future. Survey was conducted on hotel users with experience of using untact service for investigation. Survey employees were selected and educated to provide sufficient explanation on the intention of research and how to acquire survey copies. Afterwards, respondents were selected and distributed with survey copies. Investigation period was for 33 days from March 11 to April 12, 2019. Total 350 copies were distributed, and 341 of them were collected. Among them, 11 copies with insufficient responses were excluded that total 330 copies were used for empirical analysis. As a result, the untact service characteristics of the hotel were classified into six factors: easiness, control, pleasure, saving, reliability, and convenience. Service convenience factors were functional, economic, psychological, and calculating conveniences. Customer satisfaction was a single factor. First of all, control, saving, and reliability among untact service characteristics turned out to overall influence on service convenience factors. Secondly, among service convenience, psychological convenience is what influences on customer satisfaction the most. This indicates that untact service for customers at a hotel shall be controlled by customers as they wish, and reliability on personal information control and, above all, various benefits given compared to face-to-face service are required to score benefits in hotel service.

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1. Introduction

Since service has been provided when employees meet customers face to face at a hotel so far, it was a general trend to

manage service quality focusing on the face-to-face service. The higher the quality of service recognized by a customer was, the higher the satisfaction and reliability of

a customer turned out to be. Therefore, it positively influenced on the formation of loyalty of a customer. Thereupon, the focus was on maintaining and managing customers with high loyalty [1]. Most of the previous studies have been conducted with focus on the quality of various types of human service ranging from the marketing to reservation or customer service at a hotel [2]. However, hotels sensitively reacting to the economic situations in Korea and abroad have been making an effort to reduce all the possible expenses under current keen competition and economic hardship. Especially, low to medium price hotels have been minimizing the human service and reducing expenses with untact service. Furthermore, there has been an increasing weight on untact service among the entire hotels.

As innovative technology and Internet have been globally commercialized, self-service channel based on technology In the field of service, in other words; untact service channel has been generalized. Untact service does not require human resources but provides service for customers to solve their own issues through self-service in the use of technology without face-to-face interaction. As untact service has been expanded, it is possible for service companies to significantly reduce human resource management expenses and accomplish financial outcome in connection with profit of a company [3]. Furthermore, adoption of untact service influences on the relationship with customers, satisfaction, and concentration [4], [5].

Such reality is well witnessed in the hotel industry. Hotels have been in a transition to move from face-to-face service channel to the untact service in the use of self-service technology providing various untact services and focusing on the quality management [6]. The oldest type of untact service is regarded as the reservation system in the use of telephone. Hotels have long been operating call center proceeding communication with customers [7]. However, it is now general to make reservation through homepage of a hotel due to the development of information

industry and Internet. At the same time, it has become generalized to use a cell phone in an increasing trend on various types of mobile service including the confirmation of room information, reservation, purchase, and check-in by utilizing applications [8].

In addition, artificial intelligence and robot are expected to be applied in the field of entertainment that is recognized as labor-intensive industry due to high reliance on human service. Among them, artificial intelligence or robot service has already been provided or will be provided in the fields of hotel, aviation, traveling, and food/beverage. In Japan, Hann_na Hotel located at Sasebo, Nakasaki, started service with artificial intelligence and robot as of July, 2015 attracting much attention. In Korea, Walkerhill has concluded MOU for the joint development of hotel robot service with LG Electronics on December 26, 2017 revealing how they planned to jointly proceed the development of hotel robot service and operation plans [9]. Hereupon, there has been an effort to provide service that was unprecedented in the field of entertainment in Korea and abroad [10].

It is required to see if service convenience provided with face-to-face service is provided in the untact service in the same manner, and also if it leads to customer satisfaction in this period when untact service is provided and attempted through various channels over face-to-face service by human resources.

Therefore, the purpose of this study is to see how untact service of a hotel influences on the service convenience recognized by a customer and also how service convenience recognized by a customer affects on customer satisfaction to come up with plans for utilizing untact service of a hotel and plans for expansion in the future.

2. Literature Review

2.1. Untact Service Characteristics

Untact service is defined to be service provided by using information communication and technology without direct contact between service provider and customer [11]. With the development of

various types of communication technology including Internet, untact service has been increasing. At the same time, tools such as telephone, TV, or cell phone as well as Internet are being used as a tool to make it feasible to explore information and proceed commercial transactions.

Untact service has several differences compared to traditional face-to-face service. The target of it is information making it feasible for service provider to communicate with multiple customers and use diverse communication tools. Therefore, the importance of direct face-to-face contact with physical environment, facility, and human resource providing service is lowered, while traditional communication tools such as telephone or TV, Internet, mobile communication, robot, and self-service technology tool serve an important role [12].

According to the researches about untact service, there are researches related to demographic characteristics of customers using untact service or conducted to derive factors for customer satisfaction or dissatisfaction in regard of untact service characteristics or for either accepting or denying untact service.

Dabholkar (1996) [13] has suggested to adopt untact service by the delivery speed, convenience of use, reliability, credibility, pleasure, and control of customers through research conducted on evaluation factors of a client by untact service. Meuter et al. (2000) [14] have classified factors of customer satisfaction and dissatisfaction on the untact service in service areas through CIT (Critical Incident Technique) with more than 800 cases related to untact service investigated in the website. Factors of untact service derived by them were stated to be solution of emergent and difficult problems, time and space saving, convenience of use, temporal and spatial access, and other related benefits and technologies. At the same time, they indicated how dissatisfaction factors included failure on technology and processing, issues with technical service or design, and carelessness of clients. In addition, according to researches conducted by Dabholkar (1996) and Meuter et al (2000), it was found that untact service reduced

unnecessary face-to-face contact between the traditional service provider, the service employees, and customers making customers prefer untact service as it was easy to be used. In this study, he suggested how factors of usability and convenience recognized by untact service influenced on the preference of customers.

Zhu et al. (2002) [15] have suggested seven features about untact service of convenience, saving, personal protection, convenience of use, accuracy, multi-functions, and advanced IT in the research conducted with a bank as a subject in the study. Van Rie et al. (2001) [16] have suggested saving, convenience, avoidance of personal contact, and control as factors for convenience recognized by customers 50). Yen (2005) has suggested efficiency, convenience of use, performance, recognized control, and convenience of Internet untact service as factors that influenced on customer satisfaction. In-hye Kim (2010) [17] has classified convenience, reliability, risk, saving, entertainment, and easiness as components among technology-based untact service characteristics in the study conducted on influential relationship of untact service characteristics and personal features on the intention of usage. Among them, she suggested how saving and entertainment significantly influenced on the attitude, and, especially, that saving influenced on the attitude the most.

Other than them, there are many studies conducted by many researchers in regard of untact service. In this study, it is intended to suggest convenience, control, pleasure, saving, reliability, and easiness commonly proposed by researchers as untact service characteristics.

2.2. Service Convenience

Convenience is defined to be subjective compensation or expectation preferred by consumers in regard of the use of products as a desire or request to be subjectively felt by consumers in terms of specific product characteristics. Other than them, Zeithaml (1998) [18] has indicated how convenience included both recognized quality and endogenous and exogenous features.

Keller (1993) [19] has defined convenience to be what was derived from products related or non-related features explaining it as functional convenience related to basic motivation, empirical convenience related to sentimental pleasure or diversity, and cognitive stimuli, and symbolic convenience related to social recognition, self-expression, or ego. Peter & Olson (1987) [20] have classified convenience into functional convenience, psychological convenience, and social convenience. Functional convenience means direct efficiency from using and consuming products, and psychological convenience indicates personal and indirect efficiency that is not much shown explicitly. Social convenience is also indirect efficiency, specifically indicating efficiency related to reaction of others on them as recognized by individuals. Relation convenience includes all types of convenience to be provided to customers as well as fundamental convenience of core service provided to customers to form and maintain the relationship of companies with clients. Schlesinger & Heskett (1991) [21] have suggested results of the study for how consumer group with high loyalty from formation of relationship with service companies enhanced profits of a company while reducing costs if providing services. Aaker (1991) [22] has explained the importance in relationship with loyal customers as to how it was feasible to predict sales by securing loyal customers and identify the flow of profits.

Systematic and practical studies about convenience to be recognized by customers by forming the relationship with service companies have been insufficiently conducted in the perspective of customers. However, Gwinner et al. (1998) [23] has classified convenience to be secured by customers after forming the continuous and long-term relationship with service companies into confirmative convenience, social convenience, and economic convenience. Confirmative convenience indicates how customers tend to have reliability on service providers by identifying the ability and attitude of service providers

by forming the continuous relationship with service providers and also obtain psychological stableness by resolving conflicts through confirmation as to how service will be properly performed. Social convenience indicates amicableness, personal recognition, friendship, and harmonizing relationship between company and customer. Lastly, economic convenience indicates price incentive for how low price is suggested to customers who purchase many items, and discount is offered to customers in long-term transactions. Most of the customers recognize the economic convenience not trying to replace service providers

Most of the studies have been conducted dealing with relational convenience in the perspective of companies so far. However, as convenience of customers serves a role of incentive in continuing the relationship, there is a need to conduct research as to what types of convenience there are for consumers to obtain from the company and how such convenience influences on behavioral intention of customers.

In this study, it is intended to identify convenience that customers intend to have from a company classifying it to functional convenience, psychological convenience, social convenience, and economic convenience according to previous studies. In addition, it aims to identify how such convenience influences on behavioral intention of customers.

2.3. Customer Satisfaction

Customer satisfaction is defined to emotion customers recognize after using service or product provided by the company. Understanding about positive or negative attitude of customers on service or product provided by the hotel company is to identify factors that influence on purchasing behaviors of customers. Therefore, it is a very important theoretical ground. In other words, it is judged how sustainable marketing plans are needed to continuously provide factors to improve the level of customer satisfaction. In addition, satisfaction is evaluated by value and emotion recognized by users as a result of

judgment as well as subjective experience on provided service or product [24]. In other words, customer satisfaction is defined as positive emotion created by provided service. This is the level of emotion that company is able to secure by corresponding to the expectation of customers. Customers tend to be satisfied with expected results or beyond them on provided service and product. However, if they recognize outcome that is less than their expectation, they tend to be dissatisfied. In this case, it is expected how reliability of a relevant company becomes lowered showing complaints against civil behaviors of customers. Reich et al.(2008) [25] have proved how the intention of repurchase and loyalty became higher through the relational marketing based on customer satisfaction on a study conducted on Japanese companies, and Foenell(1992) [26] have insisted how it was possible to increase customer satisfaction from improvement of relationship between customers and organizations in the company. Khaled et al. (2013) [27] have indicated results for how it was able to improve the level of customer satisfaction from customer relational marketing in the use of Internet, and customers with higher satisfaction are expected to improve with behaviors other than roles.

3. Proposed Methods

This study is intended to identify how hotel untact service characteristics influence on service convenience recognized by customers by using untact service on various technological grounds at a hotel and also if service convenience influences on customer satisfaction. For this, survey was used to collect data for empirical analysis, and survey paper was comprised of untact service characteristics, service convenience, customer satisfaction, and demographic variables. As for specific contents of survey, first part is to measure untact service characteristics constituting 22 questions by modifying them to be appropriate with this study based on previous researches. Second part is to measure service convenience constituting 17 questions. Third part is to measure customer satisfaction constituting 4

items. Last part is comprised of six items to check the demographic variables.

Survey was conducted on hotel users with experience of using untact service for investigation. Survey employees were selected and educated to provide sufficient explanation on the intention of research and how to acquire survey copies. Afterwards, respondents were selected and distributed with survey copies. Investigation period was for 33 days from March 11 to April 12, 2019. Total 350 copies were distributed, and 341 of them were collected. Among them, 11 copies with insufficient responses were excluded that total 330 copies were used for empirical analysis. Empirical analysis for achieving the purpose of this study was analyzed by using SPSS Ver.21 with valid samples from collected survey copies. Frequency analysis, reliability analysis, factor analysis, and multi-regression analysis were used for the analysis.

4. Results and Discussion

According to the results of frequency analysis for demographic characteristics on 330 respondents collected with their survey copies, there were 184 male respondents (55.8%) and 146 female respondents (44.2%). As for ages, there were 132 respondents in their 40s (40.1%), 98 respondents in their 30s (29.7%), and 62 respondents in their 50s (18.8%) in order. As for academic background, there were 238 college graduates (72.1%) as the highest proportion. As for job, there were 116 office workers (35.2%), 63 experts (19.2%), and 59 self-employed people (18.0%). As for monthly average household income, there were 95 respondents with less than KRW 2 to 3 million (28.8%), 92 respondents with less than KRW 3 to 4 million, and 70 respondents (21.1%) with less than KRW 4 to 5 million.

Then, this study has used correlation among variables preserving the meaning of original variables as much as possible while attempting to reducing variables by conducting exploratory factor analysis.

At this time, main factor analysis was used as factor deriving model, and characteristic value of 0.1 or higher was used as a criterion for deriving factors. In addition, Varimax

rotating method was used to simplify factor loads. Prior to the analysis, appropriateness of factor analysis was confirmed. In order to see if integration of features in the scope of factors was consistent, confidence verification was conducted to suggest value, Cronbach's α .

First of all, exploratory factor analysis was conducted on 22 questions to measure reliability of untact service characteristics at a hotel. Results are shown in the <Table 1>. According to the results of analysis on untact service characteristics, there were six factors with eigen value of 1.0 or higher.

Cumulative variance turned out to be higher than 60% that factor analysis results seemed to be significantly valid. In addition, KMO (Kaiser-Meyer-Olkin) value turned out to be high as 0.895, and Bartlett approximate chi-square turned out to be significant with $p=0.000$. Therefore, samples in this study turned out to be very appropriate for application of factor analysis. According to the results of factor analysis on untact service at a hotel, six types of easiness, control, pleasure, saving, reliability, and convenience were classified.

Table 1. Results of Factor Analysis of Untact Service Characteristics

Factor name	Metrics	factor loading	Eigen value	variance explanation power	Cronbach's α
Easiness	Easy for learning how to use	.803	3.014	15.171	.866
	Easy to use	.756			
	Reduce effort	.734			
	Not complicated	.693			
Control	Available to directly cancel	.801	2.824	14.119	.825
	Easy to cope with various situations	.752			
	Available to use in preferred ways	.704			
	Available to use without help of employees	.660			
Pleasure	Interesting use	.804	2.556	12.778	.809
	New experience	.743			
	Pleasure to use	.740			
	Pleasure more than face-to-face service	.601			
Saving	Save waiting time	.755	2.291	11.465	.788
	Faster than face-to-face service	.737			
	Fast in service and information learning	.694			
Reliability	Provide information without error	.817	1.962	9.819	.764
	Outstanding in protection of personal information	.802			
	Provide accurate service	.740			
Convenience	Convenient in using hours	.710	1.693	8.455	.709
	Convenient to access	.764			

In order to measure service convenience recognized by customers using untact service at a hotel, exploratory factor analysis was conducted on 17 items, and results are shown in <Table 2>. As a result of analysis on service convenience, there were four factors with characteristic value of 1.0 or higher, and cumulative analysis value was 62.315.

Therefore, results in factor analysis turned out to be very significant. According to results of factor analysis on service convenience, functional convenience, economic convenience, psychological convenience, and calculating convenience were classified.

Table 2. Results of Factor Analysis of Service Convenience

Factor name	Metrics	factor loading	Eigen value	variance explanation power	Cronbach's α
Functional convenience	Device accurately operating				
	Less breakdown on the device	.845			
	Convenient to use additional services	.832			
	Provide recent service	.774	3.236	33.843	.879
	Continuously provide service guidance	.756			
	Fast in processing complaints	.732			
Economic convenience		.710			
	No additional costs	.875			
	Affordable price in service	.831	2.116	15.865	.826
	Many discount benefits	.759			
	Additional benefits provided (mileage)	.755			
Psychological convenience	Affiliated service provided	.665			
	Available to select service at any time	.765			
	Increase of personal time due to fast service	.651	1.389	8.331	.797
	Pleasant service	.507			
Calculating convenience	Appropriate to express self character	.777			
	Appropriate with own image	.656	1.132	4.276	.765
	Fit to own life style	.559			

In order to measure reliability of customers from service convenience recognized by customers using untact service of a hotel, exploratory factor analysis was conducted on four items, and results are shown in <Table 3>. According to results of analysis on customer satisfaction, there was a

single factor with characteristic value of 1.0 or higher, and the name of it was decided to be customer satisfaction. Cumulative analysis value was 62.488 that factor analysis results turned out to be very significant.

Table 3. Factor Analysis Results of Customer Satisfaction

Factor name	Metrics	factor loading	Eigen value	variance explanation power	Cronbach's α
Customer satisfaction	Satisfaction on benefits provided by hotel	.856	1.022	62.488	.862
	Hotel service corresponds to my own expectation	.818			
	Satisfied with my own decision for choosing hotel service	.785			
	Satisfied with overall hotel service	.593			

In order to clarify the influence of untact service characteristics of a hotel on service convenience recognized by customers, multiple regression analysis was conducted. Results are shown in <Table 4>. According to analysis results of service convenience factors among untact service characteristics factors, easiness, control, saving, and

reliability significantly influenced on functional convenience ($F=45.806$, $p<.001$), control, saving, and reliability significantly influenced on economic convenience ($F=23.780$, $p<.01$) and psychological convenience ($F=24.578$, $p<.01$), and control and saving significantly influenced on calculating convenience ($F=14.430$, $p<.05$).

Table 4. Influential Relationship between Untact Service Characteristics and Service Convenience

Untact service characteristics	Service convenience							
	Functional convenience		Economic convenience		Psychological convenience		Calculating convenience	
	Standard regression coefficient	t value	Standard regression coefficient	t value	Standard regression coefficient	t value	Standard regression coefficient	t value
Easiness	.181	3.570**	.099	1.617	-.019	-.284	.088	.808
Control	.353	7.119**	.326	5.339**	.259	3.941**	.254	2.724*
Pleasure	.059	1.179	.051	.822	.057	.863	.100	1.004
Saving	.768	15.507*	.690	11.402*	.773	11.603*	.725	8.439*
Reliability	.133		.136		.154		.099	
Convenience	.049	2.648**	.073	2.227*	-.115	2.331*	.089	1.006
		.984		1.231		-1.743		1.019
Model evaluation	$R^2=.771$ Adjusted $R^2=.755$ F value=45.806***		$R^2=.587$ Adjusted $R^2=.563$ F value=23.780**		$R^2=.708$ Adjusted $R^2=.679$ F value=24.578**		$R^2=.701$ Adjusted $R^2=.653$ F value=14.430*	

* $p<.05$, ** $p<.01$, *** $p<.001$

In order to clarify the influence of service convenience recognized by customers using untact service of a hotel on customer satisfaction, multiple regression analysis was

conducted, and results are shown in <Table 5>.

These results indicate how F-value was 8.018 in $p=.000$, and explanatory power of

regression formula turned out to be 38.4%. In addition, all usability, reliability, responsiveness, confirmation, and sympathy among service quality factors turned out to

be positively influential. In addition, confirmation among service quality factors turned out to be the most influential.

Table 5. Influential Relationship between Service Convenience and Customer Satisfaction

Service convenience	Customer satisfaction	
	Standard regression coefficient	t value
Functional convenience	.292	9.398 ^{**}
Economic convenience	.062	2.005 [*]
Psychological convenience	.741	23.876 ^{**}
Calculating convenience	.127	4.109 ^{**}
$R^2=.384$, Adjusted $R^2=.313$, F value=8.018 ^{***}		

* $p<.05$, ** $p<.01$, *** $p<.001$

5. Conclusion

This study has conducted empirical analysis based on theoretical research in various grounds of technology to see how untact service characteristics influenced on service convenience recognized by customers and also how service convenience influenced on customer satisfaction on customers. Implications are suggested as follows according to results of analysis.

First of all, as for academic suggestions of this study, it seems that this study is differentiated from other previous studies as it identified untact service characteristics in terms of expanding scope of service in the field of hotel, attempt on new service, and reinforcement of the service, and also influential relationship between service convenience and customer satisfaction as this study made it possible to compare the influential relationship with human service in existing hotels.

In addition, as for practical suggestions of this study, this study seems to be differentiated from other previous studies in terms of customer satisfaction in existing hotel industry as this study identified how a new trend of Internet of Things was applied to the scope of hotel industry based on service constituting an advanced area of service and also how service quality of Internet of Things influenced on customer satisfaction.

As for practical implications, first of all,

control, saving, and reliability among untact service characteristics turned out to overall influence on service convenience factors. This indicates that untact service for customers at a hotel shall be controlled by customers as they wish, and reliability on personal information control and, above all, various benefits given compared to face-to-face service are required to score benefits in hotel service. Therefore, they shall be considered to add untact service in replacement of human service for hotel. In addition, service convenience factor that is influenced by untact service characteristics the most is the functional convenience. What this result indicates is how it is important to provide various additional services to make it convenient prepare when providing untact service without causing inconvenience while providing the most up-to-date service.

Secondly, among service convenience, psychological convenience is what influences on customer satisfaction the most. This gives a belief for hotel customers to select face-to-face service based on human resources if it is inconvenience to use untact service. At the same time, what is the most important is to provide detailed instructions about what customers are able to benefit with when using untact service. These measures might improve customer satisfaction.

As for limit of this study, untact service used at a hotel is based on telephone or homepage reservation, limited smart phone

or robot service. Hotel users still tend to use limited service and evaluate the entire service when assessing untact service. Therefore, it might be erroneous to generalize results of this study to the entire untact service.

In spite of them, untact service is expected to expand to overall areas of entertainment including hotels. Therefore, continuous research is required. Hereupon, various researches shall be conducted on customer management or managerial outcome after analyzing the customer needs on untact service.

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