

Restaurant Employees' Attitudinal and Behavioral Changes by the Implementation of Computing Technology

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컴퓨팅 테그놀로지 도입에 따른 레스토랑 종사자들의 태도와 행동의 변화

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Abstract

Computing Technology implementation suggests a dramatic change in work or organizational environment. The study aims to examine how IT adoption affected employees' attitudes toward jobs and behaviors toward customers in restaurant operations. The employee attitudinal variables examined in the study included employees' perceptions on internal work motivation, general job satisfaction, and pride in organization, while positive employee behaviors were used to examine employees' behavioral changes induced by IT implementation. The study sampled employees of full-service and mid-scale restaurants. To test the relationships among the employees of full-service and variables proposed in the research model changed by the IT implementation, six hypotheses were proposed. This study is meaningful in making a progress in finding a support for a link between task perceptions and attitudes in organizational environment change. The practical contribution of this research lies in for restaurant owners or managers to obtain a better perspective of the technology adoption and implementation decisions.

Key words : Computing technology, restaurants, attitudes, behaviors, employees.

Introduction

Considering Information Technology (IT) adoption is assumed to lead to a remarkable change in work or organizational environment (Howard & Frink 1996, Douglas C 1999), the present study intends to examine how IT adoption affected employees' attitudes toward jobs and behaviors toward customers in restaurant operations. This study is meaningful in making a progress in finding a support for a link between task perceptions and attitudes in organizational environment change.

Organizations face growing turbulence in the business environment. In dealing with environmental turbulence, information has become a strategic resource which can be used effectively in seeking competitive advantage within the business (Camison C 2000). Organizational redesign is important in shaping managerial actions due to its effect on the change in technologies, processes, and structure of the organization un-

der the redesigning process (Huber & Glick 1993). IT, being considered as a primary component in organizational redesign, develops changes in organizational roles, skill requirements, interactions or communication patterns, career paths, bases of power, strategies, and culture (Guzzo & Klein 1991). IT is fundamental in enabling the innovative redesign of core business processes (Brancheau *et al* 1996, Hammer & Champy 1993), while allowing firms to break long-standing business rules, becoming a stimulus for business process redesign (Hammer & Champy 1993, Wastell *et al* 1994). New IT systems can directly contribute to reduction in the costs of production, coordination, and information (Earl & Kuan 1994).

Previous publications have offered fairly clear and consistent evidences for the effects of work redesign on the organizations. In particular, they demonstrated that employees who perceived changes made in their jobs have expressed higher levels of motivation, satisfaction, or both towards their jobs (Griffin RW 1991, Orpen C 1979). Arnett *et al* (2002) examined the effect of work environment on job satisfaction and

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found that employees tended to be satisfied with their jobs when they believed that they had a good work environment.

As shown from the previous research, work environmental conditions were demonstrated with different perspectives of the relationships to job satisfaction variables. Howard & Frink (1996) indicated that environmental changes, including information system implementation, resulted in employees' attitudinal changes in the jobs, such as internal work motivation and employee satisfaction. Then, employees who were the most satisfied with their jobs exhibited the most pride in their organizations (Arnett *et al* 2002). Employees' encouraged pride in the organization, in turn, encourages positive employee behaviors (Arnett *et al* 2002).

The study examines employees' attitudinal and behavioral changes presumably caused by the organizational change, which is IT implementation, in the restaurant operations. This empirical study intends to investigate employees' changes in the attitudes toward jobs and behaviors toward customers by the IT adoption. The employee attitudinal variables examined in the study encompass employees' perceptions on internal work motivation, general job satisfaction, and pride in organization, while positive employee behaviors were used to examine employees' behavioral changes induced by IT implementation. As far as knowledge is concerned, there has not been research examining employee attitudes towards jobs by the work environmental change with IT implementation in the restaurant settings. Fig. 1 describes the research model developed based on the literature review. Employee perceptions, attitudes and behaviors towards jobs, and their relationships were elaborated in the review of literature.

Study Objectives

The present study is meaningful in that it pursued examination of employees in the restaurant operations to identify how they feel about IT adoption. Here IT adoption is considered as the change of the dynamic environment. There has been little research on the investigation of the impact of IT on the employees' perceptions, in particular, in the situation with IT adoption considered as the dynamic environmental change in the work place.

In pursuing examining restaurant employees' changes in attitudes and behaviors towards jobs by the IT implementation, the study developed five research objectives. In the case of restaurants which have been under the organizational change

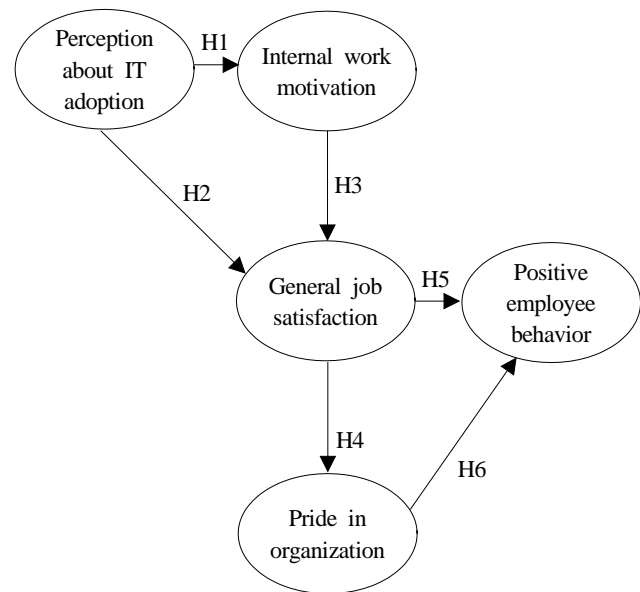


Fig. 1. Research framework.

induced by the IT implementation, 1) to examine the effects of employees' perceptions about IT adoption on their internal work motivation and general job satisfaction, respectively, 2) to examine the relationship of employees' perceptions on internal work motivation to their general job satisfaction, 3) to examine the relationship of employees' perceptions on general job satisfaction to their pride in the organization, 4) to examine if employees' pride in the organization affects employees' behavior toward customers positively, and 5) to examine if employees' perceptions on general job satisfaction affects employees' behavior toward customers positively.

Literature Review

Researchers have stated that employees' perceptions on the implementation of advanced technologies may elevate their attitudes toward jobs, such as internal work motivation and general job satisfaction (Hackman & Oldham 1980, Griffin RW 1983, Orphen C 1979, Arnett *et al* 2002, Engstrom *et al* 2005). "Internal work motivation is the degree to which the employee is self-motivated to perform effectively on the job; that is, the employee experiences positive internal feelings when working effectively on the job and negative internal feelings when doing poorly" (Hackman & Oldham 1980). General satisfaction is an overall measure of the degree to which the employee is satisfied with their job situation. The studies (Griffin RW 1983, Orphen C 1979) have shown that employees

who perceived that they have been made in their jobs positively expressed higher motivation, satisfaction, or both. Arnett and colleagues (2002) demonstrated that employees experiencing and feeling a good working environment would be satisfied with their jobs. Engstrom *et al* (2005) empirically tested and demonstrated that IT support enhanced employees' job satisfaction, including personal development, internal motivation and the total scores for psycho social aspects of job satisfaction for the group who were offered with the support, compared to the other group who were not offered with the support. Based on the above-mentioned research (Hackman & Oldham 1980, Griffin RW 1983, Orphen C 1979, Arnett *et al*. 2002, Engstrom *et al* 2005). the following hypotheses were proposed.

In the restaurant operations which have been implemented with IT,

H1: As employees' perceptions about use of IT applications increase, they will show higher internal work motivation.

H2: As employees' perceptions about use of IT applications increase, they will show higher general job satisfaction.

Internal work motivation is expected to be positively related to general job satisfaction (Campion & Stevens 1991). In a study whose subjects were employees of four different municipalities in the American Midwest and Southwest, internal work motivation significantly influenced general job satisfaction (Howard & Frink 1996). The more internal work motivation an individual has, the more satisfied the individual appears to be, indicating that motivation is an important determinant for general job satisfaction.

H3: As employees' internal work motivation increases, they will show higher general job satisfaction.

Pride perception represents a belief that one is competent and viewed positively by others. Pride in an organization results from specific perceptions of the organization and from experiences with that organization. Employees who were the most satisfied with their jobs would exhibit the most pride in their organizations (Arnett *et al* 2002).

H4: As employees' general job satisfaction increase, they will show higher pride in the organization.

Employee satisfaction is expected to have a direct causal effect on employee-customer relationships (Maister *et al* 2001). Raising employee satisfaction will improve the customer relationships. There was a study examining the factors influencing customer-oriented pro-social behavior of customer-contact employees. The study included the analysis of the structural relationship between job attitudes, such as job satisfaction and organizational commitment, and customer-oriented pro-social behavior of employees. The findings indicated that the greater the job satisfaction, the greater the role-prescribed customer service of employees.

H5: Employees' general job satisfaction will have a positive relationship with their behavior toward customers.

In turn, enhanced pride in the organization will encourage positive employee behavior (Arnett *et al* 2002). Developing a good relationship with employees is a precursor for a company to building a good relationship with customers. In an empirical study conducted in prominent hotel-casino corporation, a positive relationship has been demonstrated between pride in the organization and positive employee behavior (Arnett *et al* 2002).

H6: Employees' pride in the organization will have a positive relationship with their behavior toward customers.

Hence, it can be assumed that job satisfaction influences employee behavior in two ways. First, it has a direct effect, which is demonstrated by the significant relationship between job satisfaction and positive employee behavior. Second, it affects positive employee behavior indirectly by encouraging pride in the organization, which, in turn, encourages positive employee behavior.

Study Method

1. Data Collection

The study sample is comprised of employees of full-service, mid-scale restaurants in Korea. The targeted restaurants were owned by a firm having sixty-five chains in the country. The restaurants were selected for the study, because they have been recently implemented with IT. In winter of 2004, the survey was performed for the employees of the chosen restau-

rants. The eligibility of employees for the study included their working experiences for the restaurant industry for longer than six months to verify their knowledge on the restaurant operations and IT. One of the author communicated with the company head quarter for the distribution of the surveys to the restaurants. They confirmed that the survey should be conducted anonymously. That is, the company sent out surveys to all the restaurants of the company to certain number of employees. When employees filled in the survey, they were supposed not to state their names. Herein, the survey collector did not know who filled in which survey. The survey process verified the confidentiality of the survey. A total of 288 questionnaires were returned out of the 465 questionnaires disseminated, while 266 completed surveys were used for the data analysis, representing an effective response rate of 57%.

2. Survey

The survey was based on the previous research on employee perceptions and IT, and an in-depth interview with expert panels of technology and restaurant managers. The expert panels included two corporate-level managers and four store-level managers. The developed survey was pilot-tested to groups of managers and employees of multi-unit restaurants in Korea, which verified items relevancy and wording accuracy.

A total of five perceptual, attitudinal, and behavioral variables were measured in Part 1: perceptual and attitudinal variables include perceptions toward IT adoption, internal work motivation, general job satisfaction, pride in organization, and positive employee behavior. Employees' perceptions about IT implementation in their job place were measured with ten items obtained from previous research and refined for this research (Howard & Fric 1996, Camison C 2000). The sentence 'by adoption of IT system' was inserted in the beginning of each question to measure the effect derived from IT adoption. For measurement of the items, a 5-point Likert-type scale was used (1=strongly not needed, 5=strongly needed). Perceptions about internal work motivation and general job satisfaction were generated from the Job Diagnostic Survey (JDS) (Hackman & Oldham 1975), which were also measured using a 5-point Likert-type scale (1=strongly disagree, 5=strongly agree). The scales to measure pride in organization were composed of three items which were derived from previous studies (Benkhoff B 1997, Arnett *et al* 2002). Positive employee behavior was measured with three items derived from previous studies (Maister *et al* 2001, Arnett *et al* 2002).

Demographics of respondents (gender, age, education, current position, and years of experience) were measured in the part 2 of the survey. For the survey, IT was defined as all the computing systems used for the restaurant operations. IT includes Point-of-Sale systems and other softwares used in the back-of-the house.

3. Data Analysis

The collected data was analyzed using SPSS 15.0, while all the variables were performed on descriptive statistics. Reliability test was conducted for latent constructs to examine if individual indicator variables are good to represent the designated construct. Amos 7.0 was utilized to test the structural equation model which included the proposed hypotheses in the research framework. A measurement model was tested for the uni-dimensionality of the constructs in the research model.

Study Findings

1. Respondents' Demographics

More than eighty percent (86.5%) of surveyed employees were on non-managerial positions. More than two-thirds of the respondents were female (69.2%). In terms of education, two-thirds of the respondents obtained high school degree (67.7%), while sixteen percent had a college education. The ranges of their work experiences spread from a year (44.3%), 1~3 years (35.9%), and longer than 3 years (20%). In addition, they had work experiences in restaurant operations from a year (29.3%), 1~3 years (42.8%), and longer than 3 years (27.8%).

2. Measurement Model

To check the unidimensionality of each construct, internal consistency and confirmatory factor analysis were conducted on the five latent constructs. To ensure the purification of the measurement scale for each constructs, reliability test was done. All the coefficient alphas of the five constructs surpassed Nunnally's (1978) 0.70 criteria for reliability acceptability, such as 0.89 for perception on IT, 0.84 for internal work motivation, 0.82 for general job satisfaction, 0.89 for pride in Organization, and 0.86 for positive behavior. Having the factor analysis done, items with weak contributions to coefficient alpha and low item-to-total correlations (<0.40) were removed for further analyses. Two items from perceptions on IT, two items from internal work motivation, and two items from general

job satisfaction were removed, respectively. After that, factor loadings were examined to assure convergent validity of each construct with all loadings exceeding 0.60 (Hair *et al* 1998) (see Table 1). The suggested measurement model showed a

good-fit with overall statistics ($\chi^2=202.30$, $df=139$ ($p<0.01$); Comparative Fit Index (CFI)=0.97; Root Square Error of Approximation (RMSEA)=0.05; Tucker-Lewis coefficient (TLI)=0.96, Goodness of Fit Index (GFI)=0.91).

Table 1. Measurement Constructs^a in the model

	Standardized loading (<i>t</i> value)	AVE	CCR	Item-to-total correlation	Cronbach alpha
[1] IT Perception		0.49	0.88		0.89
Per1	0.64 (fixed)			0.62	
Per2	0.74 (13.99)			0.72	
Per3	0.71 (9.25)			0.65	
Per4 ^b				0.14	
Per5	0.69 (8.98)			0.67	
Per6	0.72 (9.25)			0.69	
Per7	0.73 (9.44)			0.66	
Per8 ^b				0.22	
Per9	0.69 (9.08)			0.70	
Per10	0.65 (8.65)			0.65	
[2] Internal work motivation		0.74	0.85		0.84
Motivation 1	0.88 (fixed)			0.73	
Motivation 2	0.84 (11.21)			0.73	
Motivation 3 ^b				0.30	
Motivation 4 ^b				0.08	
[3] General job satisfaction		0.61	0.82		0.82
General_sat1	0.74 (fixed)			0.62	
General_sat2 ^b				0.13	
General_sat3	0.85 (12.02)			0.74	
General_sat4	0.75 (11.06)			0.65	
General_sat5 ^b				0.16	
[4] Pride in organization		0.74	0.89		0.89
Pride1	0.77 (fixed)			0.72	
Pride2	0.93 (15.72)			0.84	
Pride3	0.87 (15.05)			0.80	
[5] Positive behavior		0.67	0.86		0.86
Positive1	0.83 (fixed)			0.73	
Positive2	0.86 (15.05)			0.79	
Positive3	0.77 (13.46)			0.69	

Note: AVE=average variance extracted; CCR=composite construct reliability.

^a Hypothesized measurement model with standardized parameter estimates for the full sample ($N=259$).

^b Items were deleted after reliability test.

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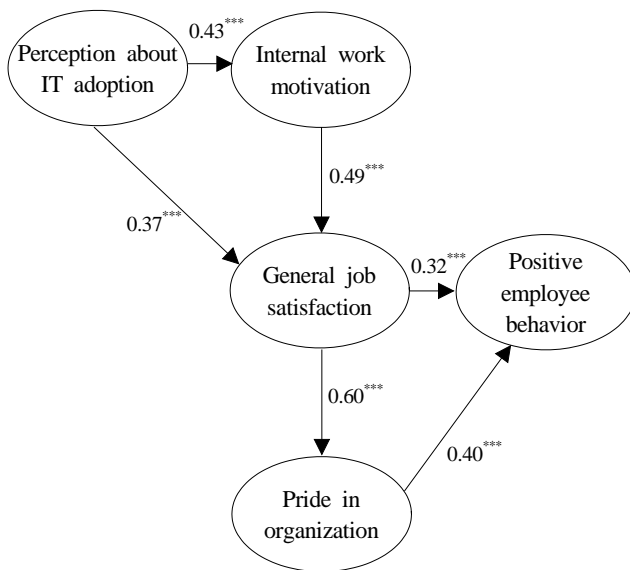


Fig. 2. SEM results in the research model.

Discriminant validity was checked using the square root of the average variance (AVE) shared between a construct and its measures (Fornell & Larcker 1981). Discriminant validity is verified as the proportion of variance extracted in each construct exceeds the square of the zero-order correlation coefficients, indicating its correlation with other factors. One pair of scales with the highest correlation was pride in organization and positive behavior ($\Phi=0.54$, $\Phi^2=0.29$, see Table 2). The AVE estimates for pride in organization and positive behavior were 0.74 and 0.67, respectively, exceeding the correlation coefficient of 0.54, which indicates adequate discriminant validity.

3. Results of Structural Equation Model

Table 3 indicates the results of the hypotheses testing in the research model. All six proposed hypotheses were supported

at an alpha of 0.05 level. Hypothesis 1 and 2 investigated the effects of perceptions toward IT on internal work motivation and general job satisfaction, respectively. Both hypotheses, hypothesis 1 (IT perception \rightarrow internal work motivation, $\beta=0.43$, $p<0.001$) and hypothesis 2 (IT perception \rightarrow general job satisfaction, $\beta=0.37$, $p<0.001$) were supported by SEM statistics. With a positive path coefficient, the more restaurant employees feel positive toward using IT in their work, they tend to have higher work motivation and job satisfaction with their job. The findings are consistent with the previous studies (Griffin RW 1983, Orpen C 1979). Employees might believe that they are working in a good environment by using IT in their work place, and these positive internal feelings made them self-motivated and satisfied with their job.

Hypothesis 3 deals with the impact of employees' work motivation on general job satisfaction. SEM analysis resulted in a positive and significant relationship (H3: internal work motivation \rightarrow general job satisfaction, $\beta=0.49$, $p<0.001$). The finding explains when restaurant employees are motivated in their work, they would like to have higher job satisfaction. It is indicating that although IT perception is an antecedent for general job satisfaction, motivation can also be an important determinant for general job satisfaction. It can be described that high perception about IT implementation increased general job satisfaction mediated by internal work motivation.

Hypothesis 4 and 5 relate general job satisfaction to pride in the organization and positive employee behaviors, respectively. Hypothesis 4 (general job satisfaction \rightarrow pride in the organization, $\beta=0.60$, $p<0.001$) and hypothesis 5 (general job satisfaction \rightarrow positive employee behaviors, $\beta=0.32$, $p<0.001$) were supported. Therefore, when employees are more satisfied with their jobs, they would have higher pride in the organization and result in positive employee behaviors. Low job satis

Table 2. Results of discriminant validity

	1	2	3	4	5	6	7	M	SD
IT perception	1.00							3.97	0.59
Work motivation	0.36**	1.00						3.49	0.72
Job satisfaction	0.45**	0.53**	1.00					3.39	0.66
Pride in organization	0.47**	0.38**	0.50**	1.00				3.75	0.74
Positive behavior	0.45**	0.37**	0.45**	0.54**	1.00			3.96	0.69

** $p<0.01$ (2-tailed).

Table 3. Hypotheses testing results in the structural equation model

Path	Standardized path estimate	<i>p</i> -value	Hypotheses testing
H1: IT perception → Internal work motivation	0.43	<0.01	Accepted
H2: IT perception → General job satisfaction	0.37	<0.01	Accepted
H3: Internal work motivation → General job satisfaction	0.49	<0.01	Accepted
H4: General job satisfaction → Pride in the organization	0.60	<0.01	Accepted
H5: General job satisfaction → Positive behavior	0.32	<0.01	Accepted
H6: Pride in the organization → Positive behaviors	0.40	<0.01	Accepted

faction has the potential of causing low quality service encounter performances on the part of the employee which will lead to customer dissatisfaction and negative word-of-mouth communication (Bitner MJ 1990). One of the most important drivers of work quality and client relationships was employee satisfaction (Maister *et al* 2001).

Hypothesis 6 addressed the relationships between pride in the organization and positive employee behaviors. Hypothesis 6 (pride in the organization → positive employee behaviors, $\beta=0.40$, $p<0.001$) came out with positive and significant path coefficients. Restaurant employees, when they feel more pride in their organization, they are more likely to reveal positive behaviors. The results suggest that more organizations need to focus on improving employee pride. Many organizations have specific programs designed to improve employee satisfaction, however fewer organizations make a little effort to increase employee pride.

The statistics from SEM were used to determine if the proposed model fits the data. With all the diagnostic statistics ($\chi^2=198.046$, $df=111$; $p<0.001$; $CMIN/DF=1.784$; $CFI=0.958$; $GFI=0.916$; $AGFI=0.885$; $RMSEA=0.055$, $TLI=0.948$), the proposed model turned out a good fit to the data, while the results are depicted in Table 3. Therefore, the proposed model is not rejected.

Conclusion and Discussions

Using a survey, this research investigated the effects of IT perception on employees' attitudes toward job and behaviors toward customers in multi-unit restaurants. To measure the attitudes, employees' perceptions on internal work motivation, general job satisfaction, and pride in the organization were examined. The sample of the study consisted of employees in the full service, multi-unit chain restaurants. To test the rela-

tionships among attitudinal and behavioral variables in the time of IT implementation in the restaurant operations, a research model was proposed based on the literature review.

There has been little research on the use of IT in the industry segments, like restaurant and food service management. Specifically, this study might give an answer to the question like, in a people-intensive business, how the introduction of technology influences staff effectiveness, productivity and moral. Developments in IT affect employees' emotional status. Employees tended to be satisfied with their jobs when they believed that they had a good work environment. IT implementation results in an improvement of employees' working condition that leads to their job satisfaction.

This study also suggests that both job satisfaction and pride in the organization are important factors that influence employee behaviors. General job satisfaction can be increased by enhancing IT perception, both directly and indirectly through internal work motivation. Therefore, as the model suggests, the perception of IT may have the influence on positive employee behaviors mediated by general job satisfaction.

One of the practical contributions of this research is to obtain a better perspective of the technology adoption and implementation decisions. Ansel & Dyer (1999) concluded that IT use in restaurants could provide such benefits as minimization of costs, better management of employees, revenue management and a competitive advantage, and an ability to analyze customer preferences and tailor menus towards specific costs. This paper accelerates the benefits of IT use in restaurants by adding the positive employees' attitudes and behaviors. Customer loyalty must begin with employee loyalty. IT adoption could be one of the factors that influence employee loyalty. Viewing the benefit of adopting IT in restaurant settings from the perspective of human resource management would be one of the contributions to the body of literature.

Since IT clearly presents opportunities for restaurant firms, what remains important is decisions related to restaurant firms' adoption and implementation of new technology. If the owner has a short-term perspective to analyzing investments, he would not consider investing in a new technology, while the owner who has recognized the value of IT and views the impact of new technology to be positive, he would have a willingness to invest in the use of technology. A suggestion is made for future research that disparity would be examined in the employee perceptions and behaviors among operations with difference in the degree of IT use or adoption. The expected results may offer practical information for use by owners or managers regarding employees' attitudinal and behavioral changes induced by IT implementation across a variety of restaurant sectors.

국문 초록

컴퓨팅 테그놀로지 도입은 직장이나 조직내에서 커다란 변화를 가져온다고 한다. 이 연구는 레스토랑 내에서의 IT 도입이 종사자들의 직업에 대한 태도와 고객에 대한 행동에 미치는 영향을 파악하는 것을 목적으로 한다. 이 연구에서 IT 도입에 따른 종사자들의 태도를 측정하는 변수는 IT 도입에 대한 인식, 내적 동기 부여, 전반적인 직업의 만족도, 조직에 대한 궁지이며, 종사자들의 행동 변수로는 고객에 대한 긍정적인 행동이 사용되었다. 이 연구의 표본은 full-service, mid-scale의 레스토랑에 종사하는 종업원들이다. 제안된 연구 모형에 포함된, IT 도입에 따른 종사자들의 태도와 행동의 변화를 조사하기 위하여 6개의 가설이 수립되었다. 이 연구는 조직 환경의 변화에 따른 직무에 대한 인식과 태도의 연관성에 대한 지식을 발전시킨다는 면에서 의미가 있다. 이 연구의 산업계에 대한 실증적인 공헌은 레스토랑 owner나 manager에게 컴퓨터 기술 도입에 대한 결정을 하는데 유용한 시사점을 줄 수 있다는 것이다.

References

- Ansel D, Dyer C (1999) A framework for restaurant information technology. *The Cornell Hotel and Restaurant Administration Quarterly* 40: 74-84.
- Arnett DB, Laverie, DA, McLane C (2002) Using job satisfaction and pride as internal-marketing tools. *Cornell Hotel and Restaurant Administration Quarterly*: 87-96.
- Benkhoff B (1997) Ignoring commitment is costly: New approaches establish the missing link between commitment and performance. *Human Relations* 50: 701-726.
- Bitner MJ (1990) Evaluating service encounters: The effects of physical surroundings and employee responses. *Journal of Marketing* 54: 69-82.
- Brancheau JC, Janz BD, Whtherbe JC (1996) Key issues in information systems management: 1994-95 SIM Delphi results. *MIS Quarterly* 20: 225-242.
- Camison C (2000) Strategic attitudes and information technologies in the hospitality business: an empirical analysis. *International Journal of Hospitality Management* 19: 125-143.
- Campion MA, Stevens MJ (1991) Neglected questions in job design: How people design jobs, task-job predictability, and influence of training. *Journal of Business & Psychology* 6: 169-191.
- Douglas C (1999) Organization redesign: the current state and projected trends. *Management Decision* 37: 621-627.
- Earl MJ, Kuan B (1994) How new is business process redesign? *European Management Journal* 12: 20-30.
- Engstrom M, Ljunggren B, Lindqvist R, Carlsson M (2005) Staff perceptions of job satisfaction and life situation before and 6 and 12 months after increased information technology support in dementia care. *Journal of Telemedicine and Telecare* 11: 304-309.
- Fornell C, Larcker D (1981) Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research* 18: 39-50.
- Griffin RW (1991) Effects of work redesign on employee perceptions, attitudes, and behaviors: A long-term investigation. *The Academy of Management Journal* 34: 425-435.
- Guzzo R, Klein K (1991) HR communication in times of change, in Schuler RS and Walker J (Eds). *Managing HR in the information age*. BNA Books, Washington, DC.
- Hackman JR, Oldham GR (1980) *Work redesign*. Addison-Wesley, Reading, MA.
- Hackman JR, Oldham GR (1975) Development of the job diagnostic survey. *Journal of Applied Psychology* 60: 159-170.
- Hackman JR, Oldham GR (1980) *Working redesign*. Addison-Wesley, Reading, MA.
- Hair JF, Tatham RL, Anderson RE, Black W (1998) *Multivariate data analysis* 5th ed. Prentice Hall, Upper Saddle River, NJ.
- Hammer M, Champy (1993) *Reengineering the corporation: A manifesto for business revolution*. Nicholas Brealey Publi-

- shing, London.
- Howard JL, Frink DD (1996) The effects of organizational restructure on employee satisfaction. *Group & Organization Management* 21: 278-303.
- Huber GP, Glick WH (1993) Sources and forms of organizational change, in Huber GP & Glick WH(Eds). *Organization change and redesign*. Oxford University Press, Oxford.
- Maister D, Green CH, Galford RM (2001) *The trusted advisor*. Free Press, New York.
- Nunnally JC (1978) *Psychometric theory*. McGraw-Hill, New York.
- Orphen C (1979) The effects of job enrichment on employee satisfaction, motivation, involvement, and performance: A field experiment. *Human Relations* 32: 189-217.
- Wastell DC, White P, Kawaiek P (1994) A methodology for business process redesign: Experiences and issues. *Journal of Strategic Information Systems* 3: 23-40.
- Yetton PW, Johnston KD, Craig JF (1993) The pencil-less architect's office: A deviant case study of the dynamics of strategic change and information technology in the Proceedings of the International Conference on Information Systems, Orlando, USA, pp. 145-156.
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