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How Control Initiatives Affect Quality of G2B E-government

Services: A Multi-method Study

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Abstract: Service quality becomes the key bottleneck of the adoption of G2B e-government services. In this context, control is an important tool for e-government service providers to direct and coordinate the service process. Based on the control theory, we develop a conceptual model to understand how different control initiatives influence the service quality of G2B e-government services. A multi-method analysis combining qualitative and quantitative analysis was used to conduct the study. Through a case study of a typical G2B service provider, we identified important components of input control and process control and established the conceptual model. Then we tested the proposed model on the survey data from G2B service employees using structural equation modeling. The results suggests that customer-oriented training, service skill training and work motivation as input control initiatives significantly impact the service quality. Besides, coproduction with customers and internal supervision as process control initiatives also have a positive effect on service quality. Improved service quality ultimately predicts the performance of G2B service employees.

Keywords: G2B e-government services, service quality, input control, process control, employee performance

1. INTRODUCTION

The service quality of government-to-businesses (G2B) e-government services greatly determine the willingness of business to adopt the services^[1]. Many government agencies choose the service provider with high service quality reputation as their entrusted and authorized service provider. Consequently, G2B service providers require necessary initiatives to improve their service quality.

The service literature suggests management control is an important way to direct and coordinate their service process^[2]. Organizations would regulate employees' service behaviors by training, monitoring, evaluating and rewarding employees' activities^[2]. Under high control, employees display higher levels of motivation, job involvement, customer relationship orientation and internal relationships^[3]. Thus, they would feel more qualified for their job and provide higher quality service for customers. Therefore, we believe how employees react to control initiatives is important to understand how to improve their service quality and performance.

To the best of our knowledge, there are several significant gaps in previous studies. First, the role of control initiatives in service quality of G2B e-government services needed to be examined empirically. Sichtmann et al. (2011) proved the influence of control initiatives on service quality in the export context^[4]. Except for this, limited research has examined the impact of control initiatives on service quality. Second, different control initiatives of G2B service providers should have different impact on service quality. However, most studies did not focus on the effect of specific control initiatives.

To address these gap, we aim to examine how different control initiatives affect service quality and further employee performance of G2B e-government services. Based on the control theory, we develop our conceptual model using a case study of a typical G2B e-government service provider. Then we tested the model by survey data from a large number of G2B service employees. Our findings will provide valuable guidance to G2B e-government service providers about how to improve their service quality and performance.

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2. THEORETICAL BACKGROUND

Control is defined as attempts taken by organizations to impact the individuals' attitudes and behaviors to achieve organizational goals. Control mechanisms includes staffing, training and rewards, and evaluation and feedback. Generally, control mechanisms can be divided into input control and process control^[5].

2.1 The impact of input control on service quality

Input control plays an important role in regulating the antecedent conditions of service quality. Through training and motivation promotion mechanisms, input control improves service abilities and enthusiasm of employees and in turn guarantees their service quality. Training is the process in which employees was disciplined to deliver high-quality service. Some scholars have suggested more service training helps employees improve service quality^[6]. Work motivation refers to the driving force to determine the direction, intensity and persistence of the behaviors that relate to work. Higher work motivation appears to impact work productivity and effectiveness. Employees with high motivation exactly understand the importance of service quality^[7].

2.2 The impact of process control on service quality

Process control is expected to ensure service quality based on the transformation process of work. It regulates employee behaviors through standard operating procedures and the participation of customers^{[4][5]}. Therefore, work process standardization and coproduction with customers are two important elements of process control. Work process standardization refers to the process in which the service provider standardize the rules regarding behaviors of employees^[8]. It can reduce uncertainty in the service process so that employees can deliver quality service. Coproduction with customers means employees engage customers in the productions of their services. Customers' useful contribution to service process can potentially produce higher quality service.

2.3 The impact of service quality on employee performance

Previous studies have indicated that employees' perception of service quality predicts employee performance. Some scholars consider employee perceptions of job can impact their attitudes, behaviors and performance. In addition, Brown and Maxwell (2002)^[9] maintain responsiveness, assurance and empathy of service quality dimensions predict the customer perceptions of performance. Therefore, we consider service quality as the employee performance indicator.

3. QUALITATIVE EXPLORATION

We firstly conducted a case study to explore the specific control initiatives in the G2B services. Case study is the preferred approach to answer "how" and "why" questions and generate primary hypotheses.

3.1 Case study design

The case company took place in 2012 in a Chinese typical G2B service provider. It is the authorized agency to provide technical services about e-government taxation software to corporate customers. It had won first prize in the service quality evaluation in China in 2008, 2009 and 2011. We collected qualitative data both from company documents and interview process. Our research team conducted the interview process in January 2012. In all, 6 persons took part in the interviews (see in Table 1). Each individual interview lasted from 30 minutes to 60 minutes. We recorded the interviews digitally for later transcription with the agreement of the interviewees.

Table 1. Basic information of interviewees

Interviewee	Position in the case company
#A	The manager of supervisory department
#B	The supervisor of call center service
#C	The deputy director of service management
#D	The manager of branch service station
#E	The employee working at the frontline for 7 years
#F	The employee working at the frontline for 2.5 years

3.2 Case study findings

After analysis of interview data, we not only corroborated the input and process control initiatives in previous literature, but identified some specific control initiatives in G2B e-government services.

3.2.1 Findings of input control antecedents

Interviewees revealed that training (including customer-oriented training and service skill training), work motivation and team climate are closely related to the service quality.

(1) Customer-oriented training

Customer-oriented training aims to deepen understandings of employees that they must be customer-focused to achieve high service quality. The case company is committed to train its employees to understand the importance of service quality. Many interviewees stated they insisted on delivering high quality service and satisfying the needs of customer. #E mentioned their service attitude, *“Customers are always right. We must stand in the position of the customers to consider the issue.”* The manager of branch service station #D also stated the strict standards that drive them to improve their service quality, *“The service for customers is much important. An employee would be immediately dismissed once receiving complaints from customers.”*

(2) Service skill training

Service skill training is also critical to improve service quality of employees. Most of the interviewees mentioned that the company pay attention to develop their service skills by induction training, apprenticeship model and follow-up training. The manager of supervisory department #A described the training programs, *“Before the staff induction, I will provide new employees with enough training. I will illustrate how to deal with various situations with many examples. Different departments provide their own training on the basis of different business requirements.”* The deputy director of service management #C mentioned the positive effect of service skill training on service quality, *“Our company provides training in rotation. The training can help us to solve different kinds of problems. As a result, our service becomes better.”*

(3) Work motivation

Work motivation as the interaction process between employees and work environment potentially affects work outcomes. In the case company, employees are motivated by some organizational and individual factors. One important incentive policy is the rewards and penalties system. For employees who deliver good service, they will get the bonuses. On the contrary, employees will be penalized for their bad service. Thus, employees will have a clear perceptions of their service quality. #B introduced the reward policy in the company, *“We have set a base number of answering calls for the helpline employees. If employees reach this number, they can get corresponding performance pay and bonuses.”* Besides, interviewee #D mentioned an important individual factor that could motivate employees, *“Some employees come from the rural area. Their home is not here. So they can concentrate on their work. They work very hard.”* Focused work and a good remuneration system have motivated employees to deliver high-quality service.

(4) Team climate

Most interviewees mentioned the apprenticeship model in the company. Apprenticeship model refers to the experienced employees play the role of the masters of new employees and help them to be familiar with their jobs. Besides, employees can also get support from other colleagues. We summarized this antecedent input control initiative as team climate. In the team climate, employees' ideas are valued and team members are committed to achieve the common organizational objectives. #C who is responsible for service management emphasized the importance of the teamwork, *“The evaluation in the company include the team evaluation. We need internal coordination to complete tasks together.”* Employee #E also maintained, *“In the team, we will share our experience, simulate work situations, and hold work analysis meeting and record the discussions.”* Team climate could help employees achieve quality outcomes through their own and others' collective efforts.

3.2.2 Findings of process control antecedents

Through the interview process, work process standardization, coproduction with customers and internal supervision of process control were verified to be closely related to service quality.

(1) Work process standardization

Work process standardization routinizes service delivery procedures, which could enable behaviors of employees to comply with the quality standards of their company^[8]. The department manager (#A) mentioned that their service processes had been standardized, *“When answering the call, the helpline employees are required to record customers’ basic information, the problem they are consulting and the solution to the problem. This is the work over the years. And this has been a standardized process.”* Interviewee #D stated that they are required to follow the service standards to deliver service, *“The problems of customers are classified. Each type of problems has standard solving process. We are required to be familiar with those processes.”*

(2) Coproduction with customers

Service outcomes depends on not only employees’ behavior, but also customers’ behavior. Customer competence and motivation are critical to the effective coproduction. The case company indeed takes measures to improve customers’ abilities to coproduce service. First, it provides product training and system operation training for new customers so that they can solve some small problems by themselves. Second, employees could guide customers how to solve difficult problems through telephone or onsite service. Besides, to better collaborate with customers, employees adopt different service ways for customers with different competence. As #E stated, *“The cognitive levels of customers are different. We should solve problems of customers with patience. We should collaborate with customers to complete the service.”*

(3) Internal supervision

Internal supervision was identified to be another key measure to control quality of service. After standardizing the work process, the superiors need to closely monitor and evaluate the employees’ behaviors to ensure their complying with standards. In the case company, the major internal supervision measure is service quality evaluation. After the core services, the customers are expected to evaluate employees’ service quality. Meanwhile, the company set up a special supervision department to monitor employees’ service quality. The manager of the supervision department #A stated described that the responsibilities of the supervision department, *“We are responsible to supervise all businesses in the company including our service employees and helpline employees’ work. For helpline employees, we pay attention to their attitude towards the customers and their ability to solve the problem. For onsite service employees, we concern their attitude when delivering the onsite service, their technique and coordination and the timeliness of the service.”*

3.2.3 The Conceptual Model and Hypotheses

Based on the case study findings, we established the conceptual model (See Figure 1):

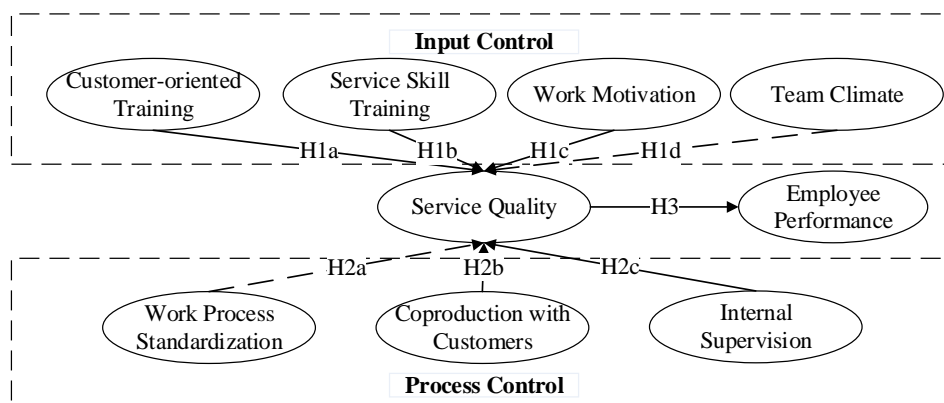


Figure 1. The conceptual model

4. QUANTITATIVE ASSESSMENT OF RESEARCH MODEL

We conducted a survey of frontline employees to test the proposed model empirically. We used structural equation modeling to analyze the survey data and thus examined the conceptual hypotheses.

4.1 Data Collection

We conducted our questionnaire through an online survey platform. Finally, we received 185 responses. 29 responses were removed due to too short answer time or incomplete data. Among the 156 valid responses, approximately 80% respondents' age is at the range of 20 to 30. Over 95% of which have a college degree or above. Besides, most of the respondents had rich experience, of which 60% had worked for 1 to 5 years and over 15% had more than 5-year work experiences.

4.2 Measurement Development

The scale of service quality is adapted from the instrument developed by Parasuraman et al. (1988)^[10]. We adopt the commonly used two dimensions (i.e., task performance and contextual performance) to measure the employee performance. The contextual performance scale are adapted from Van Scotter and Motowidlo (1996)^[11]. Because task performance is job specific, we develop the items of it according to the job requirements of delivering G2B service. Among the input control scales, the customer-oriented training scale is developed based on the study of Sichtmann et al. (2011)^[4]. Service skill training scale is assessed following the study of Salanova et al. (2005)^[12]. The work motivation scale is determined using the instrument developed by the Amabile et al (1994)^[13]. The items for team climate are developed from Bakker et al. (2004)^[14]. Among the process control scales, the work process standardization scale is adapted from the scale of Hsieh et al. (2001)^[8]. We adapt the coproduction with customers scale from Sichtmann et al. (2011)^[4]. We develop the internal supervision scale by adapting the instrument from Ravichandran et al. (2005)^[15].

4.3 Data Analysis

We used partial least squares (PLS) to analyze both the measurement model and structural model.

4.3.1 Quality of Measurement Model

To estimate the quality of measurement model, we perform the confirmatory factor analysis (CFA). The loadings of all items are significantly greater than the recommended threshold value of 0.7. The average variance extracted (AVE) scores ranged from 0.672 to 0.940 (>0.5). Thus, the measurement items showed good convergent validity. The results also indicated good discriminant validity. On the one hand, the square root of AVE for each construct was at least 0.13 greater than the construct's correlation with every other construct. On the other hand, measurement items loaded on their own construct significantly higher than their loadings on other constructs. Moreover, we also examined the reliability for all constructs. The Cronbach's alpha value ranged from 0.787 to 0.937. And the composite reliability value ranged from 0.873 to 0.969. They all exceeded the widely recommended minimum value of 0.7, indicating good reliability (See Table 2, 3, 4).

Table 2. Indicators of convergent validity and reliability

Latent Construct	Cronbachs Alpha	Composite	AVE
Customer-oriented training (COT)	0.881898	0.926699	0.808345
Service skill training (SST)	0.928545	0.954639	0.875288
Team climate (TC)	0.787249	0.873143	0.696687
Work motivation (WM)	0.936595	0.969214	0.940267
Work process standardization (WPS)	0.822182	0.918089	0.848595
Internal supervision (IS)	0.797384	0.907626	0.830901
Coproduction with customers (CC)	0.789764	0.903960	0.824819
Service quality (SQ)	0.835112	0.890585	0.671571
Employee performance (EP)	0.901194	0.931608	0.773583

Table 3. Construct correlations

	TC	CC	COT	EP	IS	SQ	SST	WM	WPS
TC	0.83								
CC	0.55	0.91							
COT	0.39	0.40	0.90						
EP	0.41	0.47	0.38	0.88					
IS	0.58	0.78	0.38	0.49	0.91				
SQ	0.43	0.52	0.53	0.62	0.55	0.82			
SST	0.36	0.25	0.49	0.31	0.31	0.55	0.94		
WM	0.28	0.29	0.56	0.34	0.30	0.53	0.65	0.96	
WPS	0.40	0.34	0.25	0.34	0.36	0.35	0.46	0.28	0.92

Table 4. Item cross loadings

	TC	CC	COT	EP	IS	SQ	SST	WM	WPS
TC1	0.85	0.44	0.40	0.40	0.45	0.40	0.28	0.23	0.31
TC2	0.79	0.38	0.21	0.21	0.47	0.25	0.25	0.19	0.28
TC3	0.85	0.52	0.33	0.36	0.52	0.39	0.36	0.27	0.39
CC1	0.46	0.92	0.34	0.41	0.77	0.52	0.31	0.33	0.34
CC2	0.54	0.88	0.39	0.44	0.63	0.42	0.13	0.18	0.27
COT1	0.31	0.34	0.91	0.32	0.33	0.55	0.50	0.58	0.23
COT2	0.43	0.39	0.91	0.37	0.34	0.43	0.41	0.48	0.19
COT3	0.34	0.34	0.86	0.35	0.36	0.43	0.40	0.44	0.24
EP2	0.35	0.38	0.34	0.93	0.42	0.55	0.29	0.32	0.33
EP3	0.37	0.42	0.35	0.91	0.46	0.59	0.30	0.30	0.28
EP4	0.40	0.46	0.40	0.80	0.48	0.50	0.16	0.20	0.17
EP6	0.31	0.38	0.26	0.86	0.37	0.53	0.35	0.34	0.43
IS1	0.53	0.69	0.33	0.41	0.92	0.54	0.36	0.31	0.35
IS4	0.52	0.73	0.36	0.49	0.89	0.47	0.20	0.24	0.30
SQ1	0.36	0.47	0.50	0.55	0.44	0.88	0.46	0.46	0.31
SQ2	0.34	0.42	0.55	0.47	0.44	0.77	0.33	0.35	0.20
SQ4	0.36	0.45	0.34	0.61	0.50	0.85	0.41	0.45	0.34
SQ5	0.34	0.36	0.36	0.37	0.43	0.74	0.60	0.49	0.29
SST2	0.32	0.22	0.49	0.27	0.25	0.48	0.92	0.63	0.37
SST3	0.32	0.23	0.45	0.29	0.31	0.54	0.96	0.59	0.44
SST4	0.38	0.25	0.44	0.32	0.32	0.51	0.91	0.62	0.49
WM1	0.28	0.30	0.56	0.34	0.31	0.54	0.62	0.97	0.27
WM2	0.27	0.27	0.53	0.31	0.28	0.49	0.65	0.96	0.28
WPS2	0.40	0.32	0.23	0.33	0.32	0.30	0.35	0.19	0.91
WPS3	0.34	0.31	0.22	0.30	0.34	0.34	0.49	0.32	0.93

4.3.2 Path Analysis

We conducted the path analysis for the structural model. The results of the structural analysis using SmartPLS support our proposed conceptual model overall (see Figure 2). The input control and process control constructs accounted for about 53.1% of the variance in service quality. And service quality explains about 39.1% of the variance in employee performance. Overall, the results show support for the significance of six hypotheses (H1a, H1b, H1c, H2b, H2c, H3). In contrast, the results failed to support H1d or H2a.

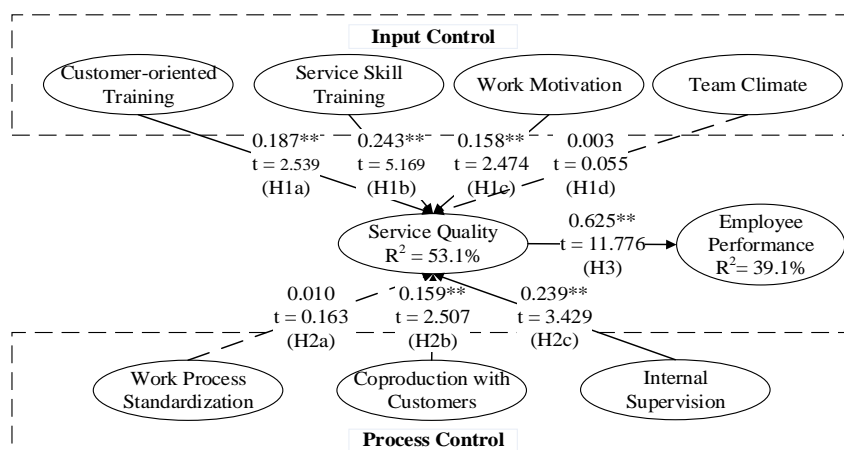


Figure 2. The path analysis results

5. DISCUSSION

5.1 Theoretical implications

This research offer the following important theoretical contributions. First, we examined the important role of control initiatives in improving service quality in such context. While extant literature suggested the high control impacts employees' behaviors and performance^[3], there is a lack of empirical study on the relationship of control with service quality. To the best of our knowledge, only Sichtmann et al. (2011)^[4] analyzed this relationship in the export context. We extend the control study to the G2B service delivery context.

Second, we compared the impact of different control initiatives on service quality. Among the input control initiatives, the service skill training is the most effective measure to influence the quality of the G2B service, followed by the customer-oriented training and work motivation. Only team climate do not contribute to the service quality. The reason for that may be the substitute effect of training. The training programs improve the service abilities of employees. Hence, the employees' need for seeking help from other colleagues is reduced to some extent. Among the process controls, internal supervision and coproduction with customers both significantly impact the service quality. However, the work process standardization has no significant effect on service quality. We surmise this could be explained by the relative intangibility and customer involvement attributes of services. Compared with the tangible work process, the intangibility of the service allows more flexible work process. Besides, to involve customers' in the service process, the employees are required to provide service in different ways for different customers. Therefore, standardized work process sometimes could not be helpful to deliver targeted service for customers.

Third, a multi-method analysis combining qualitative and quantitative analysis was undertaken in this study. Case study is the preferred approach to explore the potential antecedents, while structural equation modelling is appropriate to examine the impact of those antecedents. Furneaux and Wade (2011)^[16] have used the multi-method empirical study to conduct their study. Their research suggests that the reasonable combination of different empirical analysis methods could improve our understanding of the research issue.

5.2 Managerial implications

Our findings also have implications for management practices in the G2B e-government services. Our research gives the managers some advice to improve service quality of employees and their performance. Input and process control initiatives can be important management tools to manage employees' service quality and their performance. Our findings of control antecedents provide some useful guidance for control practices.

6. CONCLUSION

The purpose of this study is to examine the relationship between input and process control and service quality and how service quality influences the employee performance. We conduct the case study of a typical

G2B service provider to identify the specific control initiatives. After that we propose our conceptual model. Using the survey data and structural equation modeling, we test the hypotheses of the model. We show how the input controls and process controls can influence employees' service quality and performance. We believe our findings will provide insights for managers to improve the service quality through necessary control initiatives.

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