

The Impact of Employee Satisfaction on Quality and Profitability in High-contact Service Industries

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Abstract:

The extant operations management literature has extensively investigated the associations among quality, customer satisfaction, and firm profitability. However, the influence of employee attributes on these performance dimensions has rarely been examined. In this study we investigate the impact of employee satisfaction on operational performance in high-contact service industries. Based on an empirical study of 206 service shops in Hong Kong, we examined the hypothesized relationships among employee satisfaction, service quality, customer satisfaction, and firm profitability. Using structural equations modeling, we found that employee satisfaction is significantly related to service quality and to customer satisfaction, while the latter in turn influences firm profitability. We also found that firm profitability has a moderate non-recursive effect on employee satisfaction, leading to a “satisfaction-quality-profit cycle”. Our empirical investigation suggests that employee satisfaction is an important consideration for operations managers to boost service quality and customer satisfaction. We provide empirical evidence that employee satisfaction plays a significant role in enhancing the operational performance of organizations in the high-contact service sector.

Keywords: Employee satisfaction, service quality, customer satisfaction, firm profitability, empirical research

1. Introduction

In response to the pressure of globalization, increasingly competitive markets, and volatile market dynamics, many organizations are actively seeking ways to add value to their services and improve their service quality. Organizations are usually keen on making operational efficiency a priority. Operations management (OM) has emphasized the optimization of operational processes as a means to profitably deliver value to customers and to meet or even exceed customer expectations. Substantial research has been devoted to such topics as designing, managing, and optimizing service delivery systems, with a view to raising service quality and operational efficiency (e.g., Frei et al. 1999, Soteriou and Zenios 1999, Hill 2007, Saccania et al. 2007). Many firms have enthusiastically applied the operation-centric approach and demonstrated that it is an effective means for improving organizational efficiency. Nevertheless, the impact of human resources on operational systems has often been overlooked (Boudreau et al. 2003). The importance of employee attitudes, such as job satisfaction, employee loyalty, and organizational commitment, and their impacts on operational performance have largely been neglected in the extant OM literature (Boudreau 2004).

On the other hand, issues related to human resources have been widely investigated in the disciplines of organizational behavior (OB) and psychology for many decades. The pervasive interest in human resources among OB researchers and practitioners is grounded on the premise that employee attributes are crucial to organizational effectiveness (Vroom 1964, Schwab and Cummings 1970), which ultimately influences a firm's profitability. A vast amount of research has been conducted to examine employee attributes and to what extent employee attributes influence employee morale, commitment, and job performance (e.g., Becker et al. 1996, Meyer et al. 2004).

Yet, OM and human resources seem to have a long history of separateness (Boudreau et al. 2003). Although human resources and operations are intimately tied to each other in virtually all business scenarios, the impact of employee attributes on operations systems has remained largely unexplored. The studies of the impact of employee attributes on operations are particularly essential in the service industry where activities of service employees connect organizations to their customers, and operations managers rely heavily on service employees' personal interactions to impress customers (Chase 1981, Heskett et al. 1994, Oliva and Sterman 2001).

In this research we attempt to address a fundamental question in OM: Does employee satisfaction have an impact on the operational performance in high-contact service industries where there are direct and close contacts between employees and customers? If so, what are the likely relationships among employee satisfaction, service quality, customer satisfaction and firm profitability? We empirically examined the consequences of employee satisfaction in service operations through a survey of 206 service shops in Hong Kong and the development of theory-based structural equations models.

2. Theoretical Background and Hypothesis Development

2.1 Theoretical Background

Research on employee attributes and performance has traditionally resided in the domain of organizational psychology, not OM. However, as operations managers are increasingly involved in service management (Oliva and Sterman 2001, Ukko et al. 2007), they find employee attributes potentially a vital factor for operational efficiency. On the other hand, the relationship between employee attributes and performance has long been of interest to behavior researchers. The interest of behavior psychologists in studying the linkage between

employee satisfaction and work behaviors goes back to the Hawthorne studies (Roethlisberger and Dickson 1939) – a landmark study that ushered in the organizational behavior perspective. In spite of decades of research, the findings have remained elusive. In their meta-analysis, Mathieu and Zajac (1990) concluded that employee satisfaction has little direct influence on business performance in most instances. Although much research has been successfully conducted to correlate employee satisfaction with individual work behaviors such as turnover, absenteeism, lateness, drug use, and sabotage (Fisher and Locke 1992), the relationship between employee satisfaction and operational performance is less explicit as little rigorous empirical research has been conducted. In particular, from the perspective of strategic operations management, employee satisfaction is not achieved without a cost in view of the fact that reducing expenses on employees is a viable choice for achieving operational efficiency.

Although much research in OM has been conducted to investigate the relationships between quality, customer satisfaction and business performance (e.g., Heim and Sinha 2001, Balasubramanian et al. 2003, Nagar and Rajan 2005), research on the impact of employee satisfaction on operational performance is relatively scarce. In the last decade, the importance of human resources to operational performance has been noted by a few researchers. Roth and Jackson III (1995) revealed that organizational knowledge residing in employees is the primary determinant of superior service quality, influencing market performance. On the other hand, factor productivity, i.e., efforts to become leaner and more efficient, may cause service quality to diminish. Lee and Miller (1999) maintained that a dedicated workforce may serve as a valuable, scarce, non-imitable resource to enhance profitability from a strategic perspective. Oliva and Serman (2001) found that managers' attempt to maximize throughput per employee eventually reduces employees' attention given

to customers. The reduction of time per customer, while resulting in an immediate increase in throughput, eventually gives rise to a vicious cycle of erosion of service standards.

It is generally agreed that service employees are often the first party to represent the whole service firm and therefore are pivotal to shaping customers' perception of service quality (e.g., Parasuraman et al. 1985, Hartline and Ferrell 1996). Bateson (1985) considered service employees' job as a 'three-cornered fight', in which the customer and the organization are at the two ends, while service employees are 'caught-in-the-middle' among them. It is important for service employees to meet the target of productivity performance in the organization and to fulfill customers' needs and external quality goals. However, there are limited studies that attempt to investigate the relationship between organizational strategies and service employees' attributes (e.g., Hartline et al. 2000, Sirdeshmukh et al. 2002). Relatively few studies have examined the relationship between service employees' attributes and service quality (Hartline et al. 2000, Singh and Sirdeshmukh 2000). Earlier studies by Brown and Peterson (1993) identified a weak relationship between employees' satisfaction and performance ($r = 0.15$). Nevertheless, it is reasonable to expect that this relationship may be stronger in the small and high-contact service industries.

Inspired by the service-profit chain (Heskett et al. 1994, Heskett et al. 1997), attempts to examine the impact of employee attributes on business performance from the perspective of OM have been increasing. Investigating into the model of the Malcolm Baldrige National Quality Award (MNBQA), Meyer and Collier (2001) showed that human resources management practices are related to customer satisfaction in a health care environment. Goldstein (2003) illustrated the importance of employee development in service strategy design to managing service encounters in hospitals. Based on interviews in the private sector and further education colleges, Voss et al. (2005) developed an empirical model to account

for the impact of employee satisfaction on service quality and customer satisfaction. Though such stream of research is still rare, it provides some theoretical grounds and preliminary evidence for the importance of employee satisfaction in service operations.

High-contact service industries typically involve activities in which service employees and customers have close and direct interactions for a prolonged period (Chase 1981). A high contact environment of services is characterized by longer communication time, intimacy of communication, and richness of the information exchanged (Kellogg and Chase 1995). Through close contacts, service employees and customers have ample opportunities to build up their ties and exchange information about purchase. This enhances the ability of service employees to deliver a high level of service quality and influence their customers' purchase decisions, contributing to sales performance. Researchers have argued that satisfied employees are more committed to serving customers (e.g., Loveman 1998, Silvestro and Cross 2000, Yoon and Suh 2003). Small service firms are more likely to experience constraints on organizational resources, therefore they rely more on the motivation of individual employees in providing good services to customers (McCartan-Quinn and Carson 2003, Haugh and McKee 2004, Coviello et al. 2006). In line with the above arguments, we believe that satisfied employees in a small, high-contact environment are more likely to have greater influence on service quality, customer purchase, and sales performance. Thus, small organizations in the high-contact service sector are particularly suited for examining how employee satisfaction affects organizational performance through service quality and direct customer contacts.

2.2 Development of Hypotheses

Previous studies have provided some empirical support and theoretical backing that employee satisfaction, service quality, customer satisfaction, and firm profitability are likely to be

associated to one another. We develop the following hypotheses and establish our research model grounded in pertinent theories and empirical works accordingly.

Employee satisfaction and service quality. Yoon and Suh (2003) showed that satisfied employees are more likely to work harder and provide better services via organizational citizenship behaviors. Employees who are satisfied with their jobs tend to be more involved in their employing organizations, and more dedicated to delivering services with a high level of quality. Previous research has also suggested that loyal employees are more eager to and more capable of delivering a higher level of service quality (Loveman 1998, Silvestro and Cross 2000). Researchers have argued that service quality is influenced by job satisfaction of employees (e.g., Bowen and Schneider 1985, Hartline and Ferrell 1996). Hartline and Ferrell (1996) found evidence that job satisfaction felt by customer-contact employees is associated with service quality.

The argument that employee satisfaction improves service quality is grounded on the theory of equity in social exchanges (Gouldner 1960, Homans 1961, Blau 1964, Organ 1977). Although there are different views on social exchange theory, theorists agree that social exchange involves a series of interactions to generate obligations (Emerson 1976, Cropanzano and Mitchell 2005) that are unspecified (Blau 1964). These interactions are usually seen as independent of the actions of another person (Blau 1964). The underlying reason is that an exchange requires a bidirectional transaction – something is given and something is returned (Cropanzano and Mitchell 2005). The transaction also has the potential of generating high-quality relationships among the parties involved (Cropanzano and Mitchell 2005). The underlying assumption of equity in social exchanges is that most people expect social justice or equity to prevail in interpersonal transactions (Organ 1977,

Cropanzano et al. 2003). An individual accorded some manner of social gift that is inequitably in excess of what is anticipated will experience gratitude and feel an obligation to reciprocate the benefactor (Gouldner 1960, Organ 1977). Such positive reciprocal relationships evolve over time into trusting, loyal, and mutual commitments (Cropanzano and Mitchell 2005).

In the context of social exchange theory, when an employer offers favorable working conditions that make its service employees satisfied, the latter will in return tend to be committed to making an extra effort to the organization as a means of reciprocity for their employer (Wayne et al. 1997, Flynn 2005), leading to a higher level of service quality. Based on the theory of equity in social exchanges, we posit that employee satisfaction leads to higher service quality. Hence,

Hypothesis 1: Employee satisfaction has a positive influence on service quality.

Service quality and customer satisfaction. Many researchers have studied the relationship between service quality and customer satisfaction (Roth and Van Der Velde 1991, Roth and Jackson III 1995). Prior studies have considered service quality as an antecedent of customer satisfaction (Cronin and Taylor 1992, Anderson et al. 1994, Gotlieb et al. 1994). Empirical findings showed that service quality is related to customer satisfaction (Babakus et al. 2004). Customers who are satisfied with the perceived service quality will have a favorable emotional response, i.e., customer satisfaction. Research in service marketing considers customer satisfaction as an affective construct (e.g., Westbrook and Reilly 1983, Oliver 1997, Olsen 2002). Westbrook and Reilly (1983) suggested that customer satisfaction is an emotional response to the experiences provided by and associated with particular products purchased or services provided. Similarly, Oliver (1997) pointed out that customer judgment

of a product or service would produce a pleasurable level of fulfillment (i.e., customer satisfaction). The emotive nature of customer satisfaction directly affects behavioral intentions of repurchases and referrals (Gotlieb et al. 1994, Oliver 1997).

The relationship between service quality and customer satisfaction can be accounted for by the attitude theory proposed by Lazarus (1991) and Bagozzi (1992). Lazarus (1991) proposed that appraisal processes of internal and situational conditions lead to emotional responses; in turn, these induce coping activities: appraisal → emotional response → coping. Bagozzi (1992) applied Lazarus' (1991) theory of emotion and adaptation to explain how attitudes might be linked to behavioral intentions. His theoretical framework suggests that appraisal leads to emotional response, which in turn induces coping behaviors. Bagozzi (1992) proposed that individuals typically engage in activities because of a desire to achieve certain outcomes. Accordingly, if an individual's appraisal of an activity indicates that the person has achieved the planned outcome, then "desire-outcome fulfillment" exists and an affective response follows, leading to satisfaction (Gotlieb et al. 1994).

When applied to service encounters, the framework infers that a favorable cognitive service quality evaluation, i.e., appraisal, leads to a primarily emotive satisfaction assessment (Bagozzi 1992, Brady and Robertson 2001). We therefore suggest the following hypothesis that service quality affects customer satisfaction.

Hypothesis 2: Service quality has a positive influence on customer satisfaction.

Employee satisfaction and customer satisfaction. Research in consumer psychology has shown that exposing customers to happy employees results in customers having a positive attitudinal bias towards a product (Howard and Gengler 2001). Likewise, research in organizational behavior has revealed that the hostility of service employees has a direct

impact on the hostile mood of customers (Doucet 2004), leading to customer dissatisfaction regardless of the performance of the core tasks of the services delivered to fulfill customer needs.

The direct relationship between employee satisfaction and customer satisfaction is established based on the theory of emotional contagion (Sutton and Rafaeli 1988, Hatfield et al. 1992, Hatfield et al. 1994, Barsade 2002). Emotional contagion is defined as the tendency of a person to *automatically* mimic and synchronize expressions, postures, and vocalizations with those of another person and, consequently, to converge emotionally (Hatfield et al. 1992, Hatfield et al. 1994). This process occurs through the conscious or unconscious induction of emotion states and behavioral attitudes (Schoenewolf 1990).

Barsade (2002) discussed a model of emotional contagion to explain how group emotional contagion processes operate. It starts when a person enters a group, they are exposed themselves to other group members' emotions. He perceives the group members' emotions expressed primarily through their nonverbal signals, including facial expressions, vocalizations, postures, and movements. The group members' expressed emotion is then transferred to him. This transfer involves mimicry of facial expressions, speech rates, and body movements of the senders. Affective feedback from such mimicry then produces corresponding emotional experiences. Research has shown that mimicry is more likely when there is a relational bond between two parties. Moreover, mimicry is more probable when the receiver "likes" a sender.

Accordingly, we conjecture that when customers are exposed to the emotional displays of employees, they experience corresponding changes in their own affective status (Pugh 2001, Barsade 2002). Service employees with a high level of job satisfaction will appear to the customer more balanced and pleased with their environment, leading to positive influence on

the level of customer satisfaction (Homburg and Stock 2004). In contrast, dissatisfied service employees are likely to display unpleasant emotions to customers, reducing the level of customer satisfaction through emotional contagion. Based on this argument, we propose that

Hypothesis 3: Employee satisfaction has a positive influence on customer satisfaction.

Customer satisfaction and firm profitability. Customer satisfaction has a long-term financial impact on the business (Nagar and Rajan 2005). Previous research has investigated the linkage of customer satisfaction and its various outcomes, such as customer loyalty (Stank et al. 1999, Verhoef 2003) and profitability (Anderson et al. 1994, Mittal and Kamakura 2001). Highly satisfied customers of a firm are likely to purchase more frequently, in greater volume and buy other goods and services offered by the same service provider (Anderson et al. 1994, Gronholdt et al. 2000). Research in accounting has also shown that customer satisfaction is an intangible asset and a leading indicator of business unit revenues (Ittner and Larcker 1998). Customer satisfaction has a positive impact on firm profitability due to a number of reasons. First, customer satisfaction enhances customer loyalty and influences customers' future repurchase intentions and behaviors (e.g., Stank et al. 1999, Verhoef 2003). When this happens, the profitability of a firm would increase (Anderson et al. 1994, Mittal and Kamakura 2001). Second, highly satisfied customers are willing to pay premium prices and less price-sensitive (Anderson et al. 1994). This implies customers tend to pay for the benefits they receive and be tolerant of increases in price, ultimately increasing the economic performance of the firm. The last premise is that satisfaction results in enhanced overall reputation of the firm; in turn, this can be beneficial to establishing and maintaining relationships with key suppliers and distributors (Anderson et al. 1994). Reputation can provide a halo effect on the firm that positively influences customer evaluation. This

discussion suggests that customer satisfaction generates more future sales, reduces price elasticity, and increases the reputation of the firm. Thus, we hypothesize that

Hypothesis 4: Customer satisfaction has a positive influence on firm profitability.

3. Methodology

3.1 Sample

This study focuses on small firms from high-contact service industries in Hong Kong. We identified twelve main shopping areas in Hong Kong (e.g., Tsimshatsui and Causeway Bay) and randomly selected five major shopping centers or avenues from each area. We controlled firm size by choosing small service organizations with 2-5 service employees. Service employees are defined as customer-contact persons whose major responsibility is serving customers and selling products in shops. Being small organizations, their employee satisfaction level tends to be more consistent (George and Bettenhausen 1990) and easier to capture. We avoided choosing large chain stores (e.g., McDonald's) as customer satisfaction of such firms is more likely reflected at the corporate level rather than at an individual shop. That is, customer satisfaction with a particular store at a certain location might not make the customer loyal to that particular shop. Instead, customer satisfaction with a particular shop might only contribute to customers' overall loyalty to the whole chain (e.g., satisfied customers are loyal to any of McDonald's restaurants). Nevertheless, we intended to cover different types of service shops (except for those with low customer contacts, such as convenient stores) to strengthen the generalizability of our study. Table 1 shows the major service sectors covered in our sample.

3.2 Data collection procedures

We conducted a pilot study with eight different types of service shops, through which we verified relevance of the measurement indicators to their corresponding constructs, appropriateness of the questionnaire wording, and the clarity of the instructions to fill in the survey. Upon completing the pilot study, we made minor modifications to the questionnaire in order to improve its validity and readability. We prepared survey packets, which included a “shop-in-charge” questionnaire and two “service employee” questionnaires. The persons in charge of a shop are responsible for answering questions on customer satisfaction and firm profitability. They are normally the shop proprietors or shop managers with the ultimate responsibility for profits, and thus are capable of providing very reliable financial information. Although customers are more preferred to be the informants of customer satisfaction, empirical findings from similar studies have demonstrated that internal and external measures of customer satisfaction are highly correlated (Schneider and Bowen 1985, Goldstein 2003), justifying our study’s use of internal measures of customer satisfaction (Soteriou and Zenios 1999).

Service employees refer to staff members who are directly responsible for service deliveries in shops. They therefore are relevant informants of employee satisfaction and service quality. We surveyed two service employees in each shop. Psychology and OB researchers have advocated the use of multiple informants from a business unit where subjectivity in judgment is anticipated (Becker and Gerhart 1996). Our questionnaire was developed in English and translated to Chinese. To maximize translation equivalence, we followed Mullen’s (1995) suggestion that the questionnaire items are to be translated into a foreign language and then back-translated to identify any discrepancies in meaning on syntax.

We deployed a research team consisting of one of the authors as the leader, a research assistant, and some student helpers to solicit the participation of service shops in our study. From our experience, deploying a team rather than relying on individuals improves the response rate. Our research team visited each shop in person to show our sincerity and clearly explain our requirements. For instance, we required the shop-in-charge to fill in the questionnaire based on actual accounting data and recent customer survey data, if available. To further enhance the respondent rate and reduce the non-respondent bias, we rewarded each respondent a cash coupon of HK\$50 (US\$6.5), which is roughly the wage of two hours of an unskilled service employee in Hong Kong. Experimental psychologists have shown that recruiting participants with monetary rewards greatly improves the quality of responses (Camerer and Hogarth 1999, Brase et al. 2006). To the best of our knowledge, there is no reason to believe that such a practice would induce any systematic bias to the study. Our research team distributed the questionnaires in person to each of the three respondents. The respondents were allowed to complete the questionnaire at different time and different places (e.g., work vs. home) at their convenience. This helped mitigate the problem of transient mood state and common stimulus cues – a source of common method bias (Podsakoff and Organ 1986). Our research team then collected the questionnaire from each respondent individually at his or her convenient time and rewarded the respondent the cash coupon. The research team also re-visited individual participants that had not returned the questionnaire by the due date to re-invite them to participate. Revisiting indeed helped improve the response rate.

Almost 300 shops were visited over a twelve-month period. However, because of company policies of not responding to surveys or confidentiality of the information sought, we only obtained 651 questionnaires from 223 shops. We dropped the returns of 17 shops because data on either the shop-in-charge or one of the service employee questionnaires were missing

or the questionnaires were not duly completed, leaving 206 sets of usable questionnaires from 618 participants (Table 1).

(----- Table 1 about here -----)

3.3 Variable measures

The measures used in this study were drawn from well-established instruments in psychology, human resources management, or operations management. A complete list of the items used is exhibited in the Appendix.

Employee satisfaction: We intended to capture the degree to which service employees are satisfied with their job. We used indicators from the Job Descriptive Index (Smith et al. 1969, Jacobs and Solomon 1977, Balzer et al. 1997), which is widely adopted in psychology or organizational behavior research. We chose four questions out of the five classical satisfaction facets, namely salary, job nature, promotion, and relationship with colleagues listed in the Job Descriptive Index. We did not measure their relationship with supervisors. This is because such a relationship might highly depend on their performance in service delivery (Teas 1981) – a close indicator of service quality in this research. Respondents were asked to rate on each item on a seven-point Likert scale anchored at 1 = “totally disagree” and 7 = “totally agree”.

Service quality: We adopted the SERVQUAL instrument developed by Parasuraman et al. (1988) and Parasuraman et al. (1991). The SERVQUAL instrument suggests there are five dimensions of perceived service quality, namely tangibles, reliability, responsiveness, assurance, and empathy. Consistent with previous research on service quality (e.g., Gotlieb et al. 1994), we chose an item from each of the five dimensions that are most relevant to the service sectors being studied, instead of using all 22 items. Respondents were asked to rate

each item on a seven-point Likert-type scale anchored at 1 = “totally disagree” and 7 = “totally agree”.

Customer satisfaction: Customer satisfaction is defined as the pleasurable emotional state of a customer from their experience with a shop, i.e., a summary evaluative response (Fornell 1992, Anderson et al. 1994). This summary response contains evaluations of the key facets that customers consider important in the service context (Oliver 1997). Compared with more transaction-specific measures of performance, an overall evaluation is more likely to influence customer repurchases (Gustafsson et al. 2005). Four questions related to feature performance that drive satisfaction were developed, including enquiry service, price, customer service in transactions, and service handling of dissatisfaction (Heskett et al. 1997, Oliver 1997, Gustafsson et al. 2005). A seven-point Likert-type scale anchored at 1 = “totally disagree” and 7 = “totally agree” was used.

Firm profitability: Firm profitability reflects the financial performance of a shop. Consistent with previous research, we chose return on assets (ROA), return on sales (ROS), return on investment (ROI), and overall profitability as indicators (Staw and Epstein 2000, Schneider et al. 2003). Perceptual data were obtained. We asked the shop in-charge persons to assess their shops’ profitability relative to industry norms (Delaney and Huselid 1996, Sakakibara et al. 1997) with regard to the above four indicators on a seven-point Likert-type scale ranging from 1 = “much lower” to 7 = “much higher”. Although perceptual data may impose limitations through increased measurement error, the use of such measures is not without precedence (Powell 1995, Delaney and Huselid 1996). Researchers have found measures of perceived organizational performance data to correlate positively (with moderate to strong associations) with objective measures of firm performance (Dollinger and Golden 1992, Powell 1992).

3.4 Interrater Agreement and Reliability

We obtained responses on employee satisfaction and service quality from two service employees in each shop. We estimated within-shop interrater agreement following suggestions in psychology (James et al. 1984, Lindell and Brandt 1999). The average within-group interrater reliability values, $r_{wg(j)}$, for the constructs of employee satisfaction and service quality were 0.937 and 0.950, respectively. The interrater reliability values are higher than those obtained in similar types of research studies (e.g., Ryan et al. 1996, Schneider et al. 2003) and than the commonly accepted criterion of 0.7 (James 1982), suggesting sufficient within-group agreement to aggregate the data to the shop level for analysis.

We used intra-class correlation (ICC) statistics, ICC(1) and ICC(2), to assess interrater reliability (Bartko 1976, Shrout and Fleiss 1979, Schneider et al. 1998) within shops. ICC(1) compares the variance between units of analysis (shops) to the variance within units of analysis using the individual ratings of each respondent. ICC(2) assesses the relative status of between and within variability using the average ratings of respondents within each unit (Bartko 1976, Schneider et al. 1998). The ICC(1) values were 0.529 and 0.436 for employee satisfaction and service quality, respectively, which are much higher than the cutoff value of 0.12 (James 1982), indicating a sufficient inter-shop variability ratio. The ICC(2) values were 0.692 and 0.607 for employee satisfaction and service quality, respectively, which are slightly higher than the cutoff point of 0.60 recommended in the fields of psychology (Glick 1985) and OM (Boyer and Verma 2000), rendering sufficient interrater reliability within the shops for further analysis at the shop level.

3.5 Common method variance (CMV)

When two or more variables are collected from the same respondents and an attempt is made to interpret their correlation, a problem of CMV could happen (Podsakoff and Organ 1986). There are two relations that might be affected by this problem in our study, namely the relations between (1) employee satisfaction and service quality, and (2) customer satisfaction and firm profitability. One proactive approach to avoid the CMV is to separate the measurement items within the questionnaire, which was adopted in this research. We also applied Harman's one-factor test to assess the influence of CMV (Podsakoff and Organ 1986) in our collected data. We conducted Harman's one factor tests on items for employee satisfaction and service quality, and on items for customer satisfaction and firm profitability. The results of both tests show that two factors were clearly produced, suggesting that common method bias was not serious in our study. Tables 2 and 3 show the results of Harman's one factor tests for the pair of constructs employee satisfaction and service quality and the pair of constructs customer satisfaction and firm profitability. Further analysis of CMV is presented in Section 6.

(----- Tables 2 and 3 about here -----)

4. Data Analysis and Results

We applied structural equations modeling (SEM) to examine our proposed model, using Analysis of Moment Structures (AMOS). We followed Anderson and Gerbing's (1988) two-step approach to estimate a measurement model prior to the structural model. In what follows, we present the results of the measurement models analysis, structural models analysis, hypothesis testing, and comparison of competing models.

4.1. Measurement models results

We assessed the convergent and discriminant validity of the scales by the method outlined in Fornell and Larcker (1981) and Chau (1997). Convergent validity can be assessed by the significance of the *t*-values for item loadings, construct (composite) reliability, and average variance extracted (AVE) (Fornell and Larcker 1981, Chau 1997). All the item loadings for the constructs were significant, with *t*-values higher than 7.66 ($p < 0.001$). In addition, as shown in the Appendix, all the measures of our instrument were found to be highly reliable with construct reliability greater than 0.8 (Nunnally 1978). The values of construct reliability ranged from 0.833 for service quality to 0.945 for firm profitability. The AVE values were all above the suggested criterion of 0.5 (Fornell and Larcker 1981), with a range from 0.505 to 0.812. These results provide sufficient evidence of convergent validity of the scales.

Discriminant validity can be evaluated by fixing the correlation between any pair of related constructs at 1.0, prior to re-estimating the modified model (Segars and Grover 1993, Chau 1997, Li et al. 2007, Skerlavaj et al. 2007). A significant difference in the chi-square statistics between the fixed and unconstrained models indicates high discriminant validity. By fixing the correlation between any pair of related constructs in the measurement models to the perfect correlation of 1.0, the chi-square values increased by at least 259.285. With an increase in one degree of freedom, these chi-square values were highly significant at $p = 0.01$ ($\Delta\chi^2 \geq 6.635$). In addition, discriminant validity exists if the AVEs of two constructs are greater than their squared correlation (Fornell and Larcker 1981, Chau 1997). For example, the AVEs for employee satisfaction, service quality, customer satisfaction, and firm profitability were 0.609, 0.505, 0.713 and 0.812, respectively, while the highest value of the squared correlation between any pair of these constructs was only 0.180.

Table 4 shows the results of the analysis of the individual measurement models (Chau 1997) of the four constructs. The values of absolute fit measures for employee satisfaction, service quality, customer satisfaction, and firm profitability were above their corresponding acceptable criteria, suggesting the measurement models are capable of predicting the observed covariance or correlation matrix. The values of comparative fit measures were also above the acceptable criteria, providing evidence against the hypothesis of a null model. All the results of absolute fit measures and comparative fit measures support the belief that the measurement models achieve satisfactory fit and are ready to be used in the analysis of structural models.

(----- Table 4 about here -----)

4.2. Structural models results and hypotheses testing

Table 5 shows the goodness-of-fit statistics for our hypothesized model (Model H). The overall fit of our structural model was good: $\chi^2 = 135.560$ ($p = 0.092$; *n.s.*), $\chi^2/df = 1.179$, GFI = 0.928, AGFI = 0.904, CFI = 0.990, NFI = 0.940, NNFI = 0.989 and RMSR = 0.030. All the four hypothetical relationships were supported at the significance level of $p = 0.01$. The estimate of the standardized path coefficient (P) indicates that the linkage between employee satisfaction and service quality (Hypothesis 1) is highly significant ($P = 0.423$, $t = 4.778$, $p < 0.001$). Both employee satisfaction and service quality have a significant and direct impact on customer satisfaction, supporting Hypothesis 2 ($P=0.287$, $t=3.33$, $p<0.001$) and Hypothesis 3 ($P = 0.234$, $t = 2.77$, $p < 0.01$), respectively. The relationship between customer satisfaction and firm profitability (Hypothesis 4) is also highly significant at $p = 0.001$ ($P = 0.270$, $t = 3.64$). The hypothesized model and its path estimates are shown in Figure 1.

(----- Table 5 about here -----)

(----- Figure 1 about here -----)

4.3. Comparison of competing models

SEM is best conducted in the form of comparisons among different plausible models that can be justified theoretically (Cudeck and Browne 1983, Baumgarner and Homburg 1996, Shah and Goldstein 2006). Bentler and Chou (1987) pointed out that in an ideal situation, a researcher should build a few alternative models that shed light on the key features of the hypothesized model. We developed three competing models based on alternative arguments in the literature.

The term “emotional labor” refers to the effort, planning, and control needed to express organizationally desired emotion during interpersonal transactions (Morris and Feldman 1996). The job of service employees requires emotional labor, i.e., they are required to display a positive state of emotion during service encounters. Accordingly, it is argued that even if employees are dissatisfied with their jobs, they might still display a balanced and pleasant attitude to create a friendly service environment (Hochschild 1983, Pugh 2001). In addition, service organizations take various measures, such as recruitment and selection, and rewards and punishments, to assure that their employees will conform to normative expectations of service standards (Sutton and Rafaeli 1988). As a result, employee emotions during service encounters should be under the control of management, instead of being influenced by job satisfaction (Morris and Feldman 1996). Following this line of thought, the direct impact of employee satisfaction on customer satisfaction through emotional contagion

should be minimal. We thus developed our first alternative model, Model A₁, postulating that employee satisfaction does not have a direct impact on customer satisfaction.

The balanced theory supports the notion that organizational performance also leads to employee satisfaction. The argument suggests that financially and market successful organizations provide superior benefits to employees, yielding a higher level of employee satisfaction, including job security, pay and promotion opportunities (Koys 2001, Schneider et al. 2003). In addition, firm profitability might increase the reputation of a firm, making it a more attractive organization to work for. The management is likely to attribute the business success to the capabilities and efforts of their service employees, leading to positive evaluations of their performance. Successful business performance also enhances the self-esteem of the service employees, positively influencing their job satisfaction levels. The second alternative model, Model A₂, was developed along this line of reasoning.

Some researchers have argued that job performance will influence employee satisfaction, but employee satisfaction will not affect job performance, e.g., quality of service delivery (Bagozzi 1980, Brown et al. 1993). Their rationale is that satisfaction leading to higher job performance is relatively difficult to justify. For employee satisfaction to influence service quality or customer satisfaction, a person must not only be aware of his or her own feelings of satisfaction, but must also attribute the satisfaction feelings to specific aspects of his or her job and decide to act in accordance with those feelings (Bagozzi 1980). Iaffaldano and Muchinsky (1985) described that employee satisfaction and job performance as an illusory correlation – a perceived relation between two variables that we intuitively think should exist, but in fact does not. Accordingly, we developed the third alternative model, Model A₃, assuming that employee satisfaction does not have any effect on service quality or customer satisfaction, but firm profitability leads to employee satisfaction.

The results of the analysis of the alternative models are also shown in Table 5. Compared with the hypothesized model ($\chi^2 = 135.560$), Model A₁ ($\chi^2 = 143.587$) has a significantly higher χ^2 value ($\Delta\chi^2 = 8.027$). With an increase in one degree of freedom, the change in the χ^2 value is highly significant at $p = 0.01$ ($\Delta\chi^2 > 6.635$). Thus Model A₁ was rejected, providing evidence against the alternative hypothesis that employee satisfaction does not have a direct impact on customer satisfaction. However, Model A₂ appears to be a significantly better fit model as compared with the hypothesized model. With a decrease in one degree of freedom, the χ^2 value decreases by 4.723 ($\Delta\chi^2 = 135.560-130.837$), which is significant at $p = 0.05$ level ($\Delta\chi^2 > 3.841$). This indicates that firm profitability has a moderate non-recursive effect on employee satisfaction. The estimated path coefficient was 0.181 ($p = 0.028$, $t = 2.20$), while all of the original hypotheses remain significant at $p = 0.05$. The χ^2 value for Model A₃ ($\chi^2 = 163.789$) is much higher than that of hypothesized model ($\chi^2 = 135.560$). The increase in χ^2 value is highly significant at $p < 0.01$ for an increase in one degree of freedom ($\Delta\chi^2 > 6.635$). The analysis of Model A₃ provides strong evidence against the hypothesis that employee satisfaction does not have any impact on service quality or customer satisfaction. All statistical indices in Table 5 suggest that Model A₂ is the best fit structural model among all the tested models. Consequently, Model A₂, instead of the hypothesized model (Model H), was selected because it best represents the “true model”. Figure 2 displays the alternative models and their estimates.

(----- Figure 2 about here -----)

5. Discussion and Conclusions

In this study we developed and tested theory-based empirical models that depict the associations among employee satisfaction, quality, customer satisfaction, and profitability in

high-contact service industries. The results lend strong support for the assertion that employee satisfaction is an important determinant of operational performance. According to Chase and Bowen (1991), the drivers of service quality and competitive performance are linked to people, processes, and technology. Similarly, Roth and Jackson (1995) revealed that knowledgeable employees are a primary determinant of service quality, while factor productivity – the effort to become lean – has a hidden cost of reduced service quality. Oliva and Sterman (2001) unambiguously showed that maximizing throughput that drives employees to working overtime traps service organizations in a vicious cycle of declining service quality, causing severe and permanent financial losses. These studies indicate that service quality and customer satisfaction could be easily impaired by human factors, holding back overall performance.

Our study, complementing previous studies, explicitly shows that employee satisfaction is crucial to achieving quality and profitability in the service industry. The results support the hypotheses that employee satisfaction leads to higher service quality and that it influences customer satisfaction directly. Service quality and customer satisfaction eventually lead to financial gains. Our research provides strong evidence to support the fundamental relationship among employee satisfaction, service quality, customer satisfaction, and firm profitability. This supports the conceptual framework of the “balanced scorecard” (Kaplan and Norton, 1996), where employee morale and growth, internal business process, customer satisfaction and financial measures are regarded as four balanced quadrants that drive the strategic initiatives of an organization. The entire organization will be thrown out of balance, causing strategic efforts in operations to collapse in case of a lack of focus on any of these four perspectives. Following this line of thought, our findings also suggest that a right balance between these four perspectives is necessary in small service firms.

Our findings bear some practical implications for service operations management. Managers in high-contact service industries often face a similar dilemma when initiating strategic actions to enhance profitability, namely whether to focus on employees or customers. Our results suggest that organizational profitability emanates from satisfied employees. Organizations in high-contact service industries should thus focus their effort on improving employee satisfaction, and satisfied employees will uphold the service quality and ensure customer satisfaction. Employee satisfaction is one of the important considerations for operations managers to boost service quality and customer satisfaction, and plays a significant role in enhancing the operational performance of organizations in high-contact service sectors.

Our alternative model, Model A₂, lends some support for the assertion that firm profitability has a non-recursive effect on employee satisfaction, i.e., employee satisfaction and organizational performance may be reciprocally related. Accordingly, we speculate that employee satisfaction influences operational performance through a “satisfaction-quality-profit cycle”, implying that employee satisfaction contributes to the profits of a service firm through a cyclic effect. In other words, provided that the employees are satisfied to offer services with a high level of quality to satisfy customers, the impact of employee satisfaction on firm performance might be somewhat “self-sustainable”. These findings suggest that service firms should not be overly concerned about the on-going costs for sustaining employee satisfaction in the long run. However, in practice, the cost of improving employee satisfaction is often the first area to receive cuts when firms are trying to tighten their belts financially. Our research findings, together with previous evidence of the vicious cycle of erosion of service standards by Oliva and Sterman (2001), suggest a re-consideration of such strategy.

Our research highlights the issue of emotional contagion in high-contact service industries. This suggests that the need for service managers to maintain a pleasure and harmony atmosphere among themselves in shops. They might also need to make a greater effort to enable employees to display pleasant emotions when they offer services to customers. Formal and informal training could focus on instilling the employees with the thought that service quality involves also transferring positive emotions to customers. In particular, research has shown that small service firms are characterized by frequent and informal communication between employees and customers (Ram 1994, Haugh and McKee 2004). Emotional contagion is more likely to happen under this circumstance.

The impact of employee satisfaction on quality and profitability might be particularly important for small service firms. Formal control systems and procedures in small service firms tend to be either non-existent or incomplete (McCartan-Quinn and Carson 2003), making a satisfied employee's own initiatives in the service processes and his/her own motivation to deliver customized services especially important. Researchers also argue that small and localized firms facilitate the growth of stronger cultures since it is easier for values and beliefs to become shared (Sathe 1983, Haugh and McKee 2004). A collective organizational culture, together with high employee satisfaction levels, should lead to consistently high service quality.

6. Limitations and Further Research

Several potential limitations pertinent to this study necessitate some discussion here. Although a longitudinal design appears to be more appropriate, it may not be feasible in practice. This is because the impact of employee satisfaction on service quality or customer satisfaction is likely to occur rather immediately, while the impact of customer satisfaction on firm profitability could evolve in vague time windows. In particular, our research involves

the testing of a non-recursive structural equation model. It is difficult, if not impossible, to conceptualize time-lagged reciprocal effects that develop simultaneously or interactively in no specific time frame. As suggested by Wong and Law (1999), under this situation, a cross-sectional non-recursive model is a viable representation of the reality.

There are some limitations related to data collection. Employee satisfaction and service quality are important but subjective constructs in this research. These two variables, however, were obtained from the same source (the same two employees), and thus susceptible to CMV. Therefore, we escalated the unit of analysis (Smith et al. 1983, Podsakoff and Organ 1986). In escalating the unit of analysis, we took one rating from the first service employee and the other rating from the second service employee. Accordingly, the data on employee satisfaction, service quality, and customer satisfaction, together with firm profitability, were obtained independently from three different staff members. We then re-examined the final model, Model A₂. As shown in Figure 3, all path estimates are comparable to those of the original model in Figure 2, providing some evidence of the robustness of the final model.

(----- Figure 3 about here -----)

In order to further examine if internal measures of service quality and customer satisfaction are reliable sources in this research, we collected additional data from both customers and employees. We contacted over 50 shops that initially agreed to let us survey both their customers and employees. In each shop, we randomly surveyed three employees and five customers. Finally, we obtained over a four-month period a valid sample of 38 shops involving 114 employees and 190 customers. Each customer was surveyed in different time periods (in the afternoon or evening on different days) to avoid the “clustering effect”. We examined the correlations between the average ratings of employees and customers. We

found that, even for such a relatively small sample size ($n = 38$), all the data on service quality and customer satisfaction rated by customers and service employees were highly correlated at $p < 0.1$. This provides additional empirical support for the use of internal measures of service quality and customer satisfaction in the study. Tables 6 and 7 show the correlation matrices for the indicators of service quality and customer satisfaction, respectively.

(----- Tables 6 and 7 about here -----)

We further assessed CMV through the Marker-Variable Technique (Lindell and Whitney, 2001), which takes advantage of a special marker-variable that is deliberately prepared and incorporated into a survey questionnaire along with the research variables of interest. In this approach, a marker-variable is implemented such that the marker-variable is theoretically unrelated to the research variables. As the marker-variable is assumed to have no relationship with the research variables, CMV can be assessed based on the correlation between the marker-variable and the indicators of interest (Malhotra et al., 2006). We added a marker-variable by including a question that asks service employees their “satisfaction levels with the living environment”. Based on the additional sample of 38 shops, we did not find any significantly correlation between the marker-variable and the five indicators of service quality. The values of the correlation test between the marker-variable and the five indicators were 0.059 ($p = 0.725$), 0.266 ($p = 0.107$), 0.139 ($p = 0.404$), 0.125 ($p = 0.456$) and -0.087 ($p = 0.456$) for tangibles, reliability, responsiveness, assurance and empathy, respectively, indicating CMV was rather limited in this research.

We conducted our research in labor-intensive service shops where service employees have direct contact with customers. This means that our results may not be readily generalized to

low-contact service firms, e.g., convenient stores or postal services. In addition, our research findings tend to be more valid in labor-intensive service sectors, rather than knowledge-intensive service sectors such as accounting and legal services. We focused on small service shops, which implies that our results may not be generalized to large service organizations or organizations with many chain stores.

For future research, we believe that it would be interesting to find out the relationship between employee satisfaction and organizational learning. For example, would a lack of employee satisfaction impede organizational learning, hindering operational efficiency? Following this line of thought, we also suggest that researchers examine the relationship between employee satisfaction and innovativeness. For instance, is employee satisfaction a necessary condition for innovativeness in the manufacturing industry? We hope this research will provide an impetus to OM researchers to more critically examine the relationships between employee attributes and operational performance.

Acknowledgments:

The authors are thankful for the constructive comments of the Associate Editor and three reviewers on an earlier version of this paper. This paper was supported in part by The Hong Kong Polytechnic University under grant number A-PA2Y.

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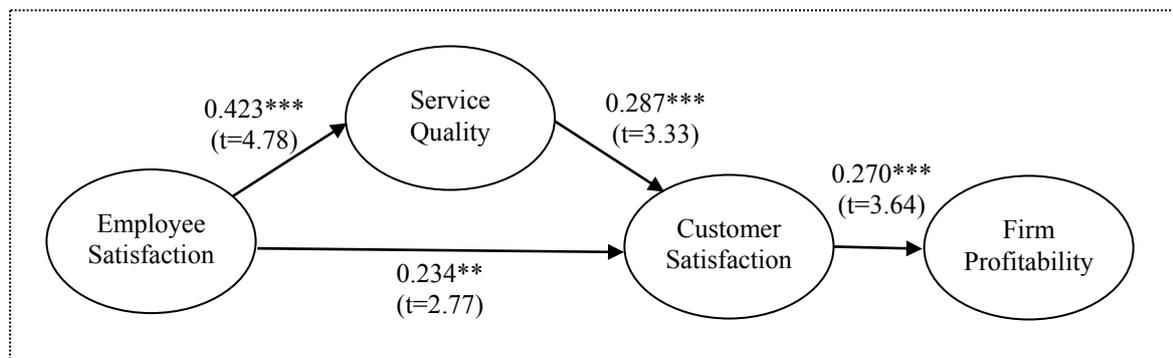
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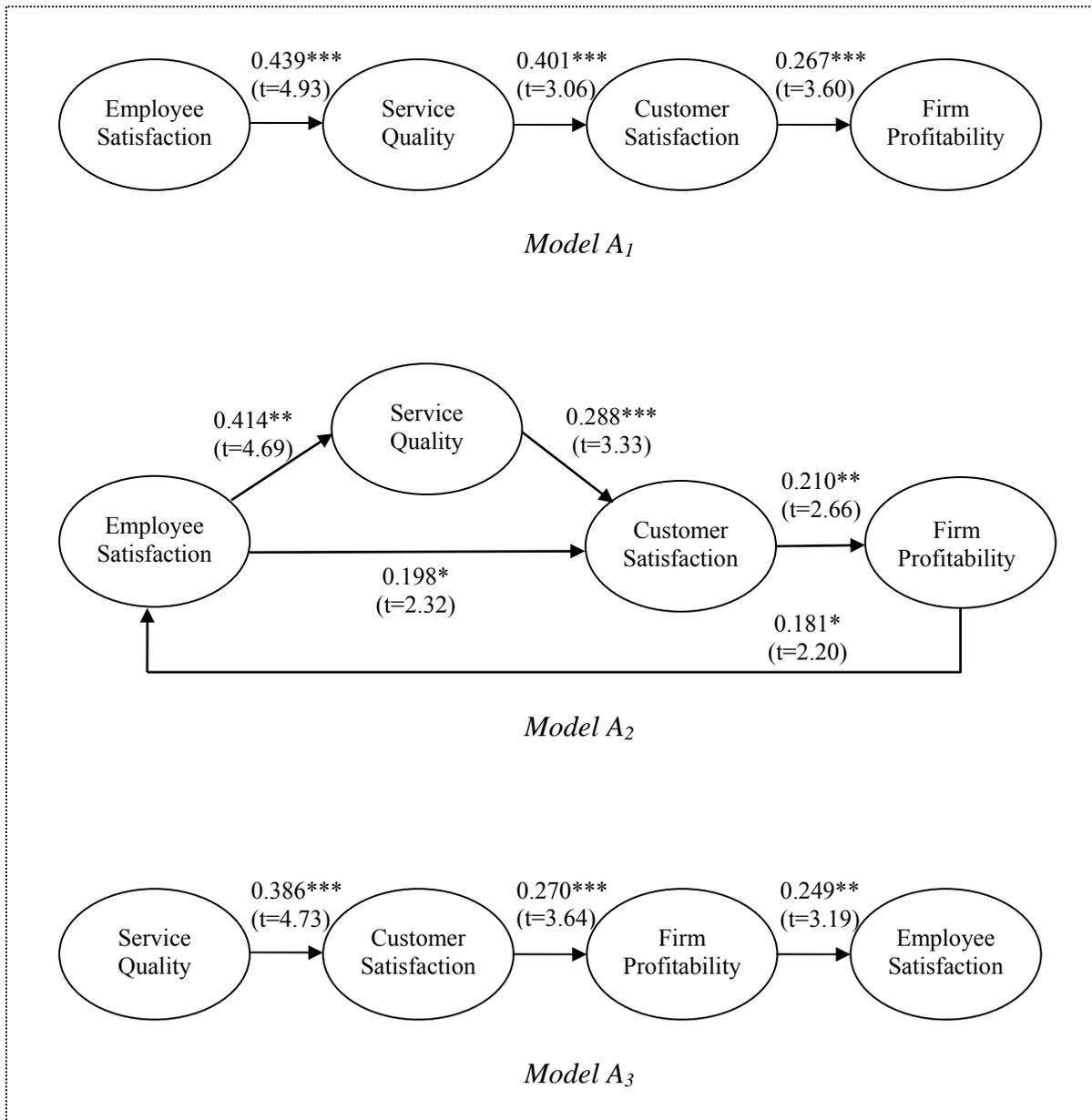
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Figures and Tables:



*** $p < .001$; ** $p < .01$

Figure 1 Hypothesized model (Model H) and its path estimates



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

Figure 2 Alternative models and their path estimates



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

Figure 3 The model and its estimates after escalating the unit of analysis

Table 1 Distribution of sampled shops

Service Sector	Number of shops
Agency service (e.g., estate agencies and travel agencies)	45
Beauty care services (e.g., salons and beauty shops)	40
Catering (e.g., steakhouses)	21
Fashion retailing (e.g., dress shops and shoes shops)	38
Optical services (e.g., optometry shops and optical shops)	22
Retailing of health care products (e.g., cosmetic shops)	10
Retailing of valuable products (e.g., jewelry shops)	10
Others	20
Total	206

Table 2 Harman's one-factor test of employee satisfaction and service quality

	Factor 1 (Employee satisfaction)	Factor 2 (Service quality)
Satisfaction with salary	.820	.092
Satisfaction with promotion opportunities	.862	.094
Satisfaction with job nature	.748	.244
Satisfaction with relationships with fellow workers	.598	.305
Service quality – Tangibles	.224	.686
Service quality – Reliability	.116	.770
Service quality – Responsiveness	.141	.622
Service quality – Assurance	.244	.764
Service quality – Empathy	.077	.601

Table 3 Harman's one-factor test of customer satisfaction and firm profitability

	Factor 1 (Customer satisfaction)	Factor 2 (Firm profitability)
Price	.766	.087
Enquiry service	.878	.118
Customer service in transactions	.866	.119
Service handling of dissatisfaction	.823	.129
Overall profitability	.126	.857
Return of assets	.097	.891
Return of sales	.102	.931
Return on investment	.160	.891

Table 4 Goodness of fit indices for measurement models

Goodness of Fit Measures	Criteria	Employee satisfaction	Service quality	Customer Satisfaction	Firm profitability
<i>Absolute Fit Measures</i>					
Distinct Parameters	-	8	15	8	8
Chi-square χ^2 of Estimated Model	-	3.697	7.484	5.506	5.323
Degree of Freedom (<i>df</i>)	-	2	5	2	2
Probability of χ^2	$\geq .05$	.157	.187	.064	.070
Chi-square/Degree of Freedom (χ^2/df)	≤ 3.0	1.849	1.497	2.753	2.662
Goodness of Fit Index (GFI)	$\geq .90$	.991	.986	.987	.987
Root Mean Square Residual (RMSR)	$\leq .10$	.064	.037	.092	.090
<i>Comparative Fit Measures</i>					
Normed Fit Index (NFI)	$\geq .90$	.990	.980	.990	.993
Non-normed Fit Index (NNFI)	$\geq .90$	.986	.986	.981	.987
Comparative Fit Index (CFI)	$\geq .90$	.995	.993	.994	.996
Adjusted Goodness of Fit Index (AGFI)	$\geq .90$	.954	.958	.937	.937

Table 5 Goodness of fit indices of hypothesized and competing structural models

Goodness of Fit Measures	Criteria	Model H	Model A ₁	Model A ₂	Model A ₃
<i>Absolute Fit Measure</i>					
Distinct Parameters	-	153	153	153	153
Chi-square (χ^2) of Estimated Model	-	135.560	143.587	130.837	163.789
Degree of Freedom (<i>df</i>)	-	115	116	114	116
Probability of χ^2	$\geq .05$	.092	.042 [#]	.134	.002 [#]
Chi-square/Degree of Freedom (χ^2/df)	≤ 3.0	1.179	1.238	1.175	1.412
Goodness of Fit Index (GFI)	$\geq .90$	.928	.924	.930	.917
Root Mean Square Residual (RMSR)	$\leq .10$	.030	.034	.027	.045
<i>Comparative Fit Measures</i>					
Normed Fit Index (NFI)	$\geq .90$	.940	.937	.942	.928
Non-normed Fit Index (NNFI)	$\geq .90$	.989	.985	.991	.974
Comparative Fit Index (CFI)	$\geq .90$	.990	.987	.992	.978
Adjusted Goodness of Fit Index (AGFI)	$\geq .90$	.904	.898 [#]	.906	.892 [#]

[#]:indexes below suggested criterion

Table 6 Results of zero-order correlations between the average ratings of employees and customers on different items of service quality.

Items	Employees				
	1.	2.	3.	4.	5.
Customers 1. Tangibles	.368*				
2. Reliability	.418**	.332*			
3. Responsiveness	.296	.250	.360*		
4. Assurance	.503**	.350*	.339*	.381*	
5. Empathy	-.143	-.218	-.142	-.054	.312[†]

[†]p<0.1

*p < 0.05

**p < 0.01

Table 7 Results of zero-order correlations between the average ratings of employees and customers on different items of customer satisfaction

Items	Employees			
	1.	2.	3.	4.
Customers 1. Price	.437*			
2. Enquiry service	.211	.360*		
3. Transactions service	.342*	.292	.334*	
4. Handling dissatisfaction service	.359*	.239	.336*	.426**

[†]p<0.1

*p < 0.05

**p < 0.01

The appendix: Questionnaires and their measurement properties

(a) Service employee questionnaire

Responses to the following questions ranged from “1=totally disagree” to “7=totally agree”.

<i>Employee satisfaction</i> [Cronbach’s $\alpha=0.857$, $r_{wg(j)}=0.937$, ICC(1)=0.529, ICC(2)=0.692, AVE=0.609, Construct reliability=0.856]	
ES1	We are satisfied with the salary of this company. (0.828) ¹
ES2	We are satisfied with the s promotion opportunity of this company. (0.862)
ES3	We are satisfied with the job nature of this company. (0.778)
ES4	We are satisfied with the relationship of my fellow workers of this company. (0.635)
ES5*	We are satisfied with the supervision of my supervisor of this company.

<i>Service quality</i> [Cronbach’s $\alpha=0.829$, $r_{wg(j)}=0.950$, ICC(1)=0.436, ICC(2)=0.607, AVE=0.505, Construct reliability=0.833]	
SQ1	Our appearance is neat and appropriate. (0.709)
SQ2	We provide services at the time we promise to do so. (0.779)
SQ3	We provide prompt services to our customers. (0.640)
SQ4	We can be trusted by our customers. (0.807)
SQ5	We do not understand our customers’ need. (reverse) (0.594)

(b) Shop-in-Charge questionnaire

Responses to the following questions ranged from “1=totally disagree” to “7=totally agree”.

<i>Customer satisfaction</i> [Cronbach’s $\alpha=0.906$, AVE=0.713, Construct reliability=0.908]	
Our customers are satisfied with	
CS1	the price of their purchased product(s) in this company. (0.772)
CS2	the enquiry service provided by this company. (0.883)
CS3	the customer service in transactions. (0.886)
CS4	the service of handling customer dissatisfaction in this company. (0.831)

Responses to the following questions ranged from “1=much lower”, through “4=no change” to “7=much higher” for financial performance of the firm as compared to industrial norms.

<i>Firm profitability</i> [Cronbach’s $\alpha=0.945$, AVE=0.812, Construct reliability=0.945]	
FP1	Overall profitability (0.870)
FP2	Return on assets (0.898)
FP3	Return of sales (0.934)
FP4	Return on investment (0.901)

¹Standardarized path weight from the latent variable to the measurement item.

*Deleted item.