In pursuit of service productivity and customer satisfaction: the role of resources

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Abstract

Purpose – In today's global marketplace, the mantra of many service firms is enhanced efficiency and productivity. To increase their bottom line, firms must also expand revenue. They thus face the challenge of ways to increase revenue through customer satisfaction while also achieving productivity gains. The current study aims to offer insight into the role of various resources that encourage frontline employees (FLEs) to become engaged in the pursuit of achieving organisational goals, ultimately enhancing service productivity and customer satisfaction.

Design/methodology/approach – A total of 252 customer-FLE dyadic data were collected at a medium-sized retail bank in Ho Chi Minh City, Vietnam.

Findings – Results show that personal (self-efficacy) and organisational resources impact FLE productivity directly and indirectly through employee engagement. Importantly, service productivity is then positively associated with customer satisfaction.

Research limitations/implications – Extending previous investigations based on the job demands-resources model and theories of self-efficacy and conservation of resources, this study's findings empirically support anecdotal accounts of the positive productivity–customer satisfaction relationship.

Practical implications – The results also highlight the importance of the management of human and organisational resources to attain this two-pronged goal.

Originality value – Using dyadic data (customers and FLEs) collected at a medium-sized retail bank, the authors refute the trade-off effect between attaining employee productivity and customer satisfaction in the service industry. This paper further fills research need to study how various resources available to FLEs can achieve desirable organisational outcomes in service firms – the improvement of both service productivity and customer satisfaction.

Keywords Frontline employees, Customer satisfaction, Resources, Employee engagement, Service productivity

Paper type Research paper

Introduction

To achieve bottom line results that are sustainable, contemporary service organisations are increasingly expected to grow revenues while, at the same time, reduce costs – that is, to "achieve more with less" (Huang and Rust, 2014). This has been referred to as a "dual emphasis" strategy (Mittal *et al.*, 2005). However, the simultaneous adoption of a productivity/efficiency orientation (which centres on achieving cost reductions and internal efficiencies) and a quality/revenue orientation (with a focus on high levels of customer satisfaction for consequent revenue growth) presents challenges that often results in productivity gain but service quality deterioration (Huang and Rust, 2014). This trade-off is especially prominent in the service sector, unlike manufacturing industries in which increasing quality and productivity go hand in hand (Anderson *et al.*, 1997; Rust and Huang, 2012).

To illustrate, Starbucks, in an effort to reduce costs and increase revenue, introduced sales targets for frontline employees (henceforth FLEs), requiring them to deliver a superior service experience while also performing a dual sales–service role (Yu *et al.*, 2013). In a further effort to drive efficiency, the company introduced automatic espresso machines instead of in-store coffee grinding. However, this move compromised the quality of customer experience, which is Starbucks' key value proposition. The negative correlation between productivity and customer satisfaction in service firms is not surprising (Marinova *et al.*, 2008).

The importance of the role of FLEs in increasing and maintaining a service brand's image and corporate reputation and generating customer satisfaction is uncontested (Singh, 2000). FLEs face a three-cornered struggle in which the customer (requiring courteous, prompt and professional service) and the organisation (demanding adherence to display rules, efficiency and productivity) are at opposing ends of a continuum, and the FLE is caught in the middle (Bateson, 1985; Singh, 2000). The recent focus of service firms is on how to assign FLEs, who have hitherto had a predominately customer service role, the added responsibility of achieving revenue targets and improving customer service (Mittal *et al.*, 2005; Yu *et al.*, 2013). Recognizing the potential of increased FLE productivity, many service companies (e.g. Starbucks, Comcast Corp, Wells Fargo, Singapore Airlines, Formosa Hotels, Taiwan Post and Qantas Airways) have embarked on a dual-emphasis strategy to increase profitability (Huang and Rust, 2014).

Service organisations today have a strategic imperative to pursue both improved productivity/efficiency and enhanced customer satisfaction. Various means of achieving this goal have been proposed, including improving processes through technology, continuous training of FLEs and learning to cope with stressful service encounters (Surachartkumtonkun *et al.*, 2015). Anderson *et al.* (1997) further emphasise the better management of frontline resources to increase employee productivity, stating the following:

> [R]ather than increasing current levels of investment in capital and labor, reallocation of resources can increase productivity via changes in strategy, processes and organisational structure and values (p. 131).

Although resources available to FLEs could be crucial determinants of desired business outcomes, the extant literature lacks empirical evidence regarding the role of such resources in achieving employee efficiency and customer satisfaction (Bakker and Demerouti, 2007). Therefore, the present research emphasizes accessible resources to successfully achieve these twin goals.

The aims of this study are threefold. We first investigate the interplay of resources at different levels. Next, we examine how the personal and organisational resources of FLEs contribute to achieve higher levels of service productivity. Lastly, we explore the nature of the association between FLE productivity and customer satisfaction.

Our research contributes to the service management and marketing literature. It is generally accepted that there is a trade-off between FLE productivity and customer satisfaction. However, this study uncovers the underlying mechanism linking various organisational and personal resources to customer satisfaction and provides empirical evidence on the compatibility of FLE productivity with customer satisfaction. In doing so, the study findings add to the recent body of work by Rust and Huang (2012), Huang and Rust (2014) and Marinova *et al.* (2008).

Literature review

Conceptual framework

Our main research question is:

> *RQ1.* How do various resources available to FLEs impact the achievement of the dual goal of service firms? (Figure 1).

To address this question, we construct the conceptual model that reflects the *motivational process* of the job demands-resources (JD-R) model (Menguc *et al.*, 2013). The assumption underlying our model is that FLEs in service firms perform jobs entailing considerable emotional demands (Steinberg and Figart, 1999).

The JD-R model has been applied to understand how the characteristics of work environments affect employee well-being and job performance across service sectors (Bakker *et al.*, 2007; Menguc *et al.*, 2013; Schaufeli and Bakker, 2004). This model underlines job resources that drive desirable organisational outcomes and meet job demands that often lead to emotional exhaustion and burnout. Particularly, job-related resources serve as motivators to achieve work goals, reduce costs incurred from job demands and stimulate personal growth and development (Demerouti *et al.*, 2001; Xanthopoulou *et al.*, 2007), that is, FLEs with accessible and retainable resources can be motivated to engage further in their jobs, be more likely be retained and perform better (Bakker and Demerouti, 2007; Schaufeli and Bakker, 2004; Xanthopoulou *et al.*, 2007). These resources are of importance for FLEs who are required to perform emotionally demanding jobs (Bakker *et al.*, 2007; Demerouti *et al.*, 2001).

We also integrate self-efficacy as a personal resource in our conceptual model to suggest that FLEs use to get motivated to deliver quality service efficiently. Perceived self-efficacy influences "self-motivation through [its] impact on goals and aspirations" (Bandura, 2000, p. 120). Individuals are prone to take decisive actions when they believe that they can produce desired, and prevent undesired, results. This means that efficacy beliefs serve as a vital personal resource to enable employees to perform given tasks even in the face of difficulties (Bandura, 2000). Perceived efficacy in the service contexts operates as a powerful motivator to deal with the high demands of a job (Demerouti *et al.*, 2001; Heuven *et al.*, 2006) and determine employee adaptation to work environments (Xanthopoulou *et al.*, 2007; Xanthopoulou, 2009). In this sense, self-efficacy theory complements the JD-R model in that it effectively explains both employee and organisational effectiveness.
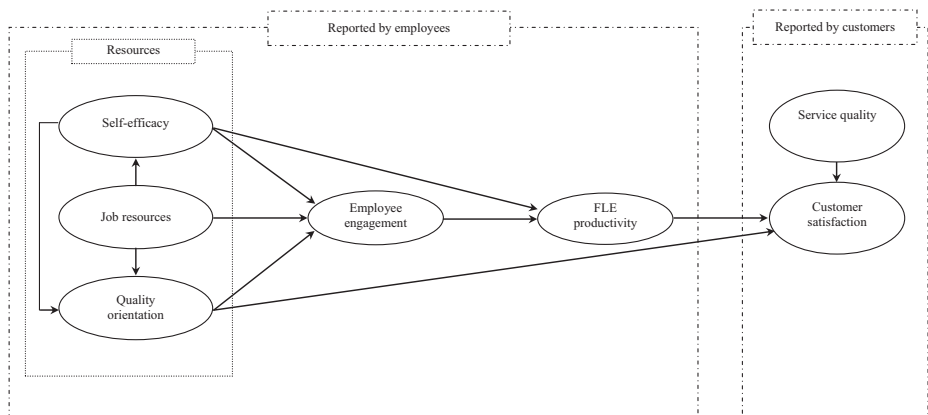

Figure 1.
Conceptual model

Resources used to motivate employee can be understood further in the conservation of resources (COR) theory (Halbensleben *et al.*, 2014; Hobfoll 1989). This theory highlights the basic human motivation for resource creation, conservation and accumulation. Individuals not only use their resources to cope with external threats and prevent negative consequences but also strive to protect and accumulate their resources to produce more positive results. This implies that FLEs with accessible and retainable resources can be motivated to achieve organisational outcomes such as enhanced work engagement and reduced turnover intention (Schaufeli and Bakker, 2004; Xanthopoulou *et al.*, 2007; Xanthopoulou, 2009).

Resources available to frontline employees
FLEs deploy different resources to perform their prescribed role at work. The literature suggests that the availability of such resources positively influence engagement and job performance. They are specific to the job (working relationship with a supervisor and team support), the individual (self-efficacy) and the organisation (quality orientation) (Wollard and Shuck, 2011). Job-specific resources are intrinsic to the individual and embedded in the organisation at large, in interpersonal and social relations, in the work organisation and at the level of each task (Bakker and Demerouti, 2007). Some examples of job resources are autonomy, social support, supervisory coaching, performance feedback and opportunities for professional development (Menguc *et al.*, 2013; Saks, 2006).

Of these job resources, the importance of social support in the workplace has been underscored in the literature. According to Kahn (1990), supportive interpersonal relationships at work engender psychologically safe environments, that is, employees in a supportive workplace feel safe, thus allowing them to perform without fear of failure (Saks, 2006). In service contexts, team support among FLEs is essential to determine service quality because service excellence often occurs as the result of employees working together (Berry, 1995). Team members' willingness to help others in serving customers also creates employee perceptions of a positive service climate (de Jong *et al.*, 2004).

The working relationship quality between FLEs and their immediate supervisor is another work-related resource that influences employee performance and attitudinal outcomes (Janssen and van Yperen, 2004). It is derived from the leader-member exchange theory, which underlines the quality of interactions between supervisors and their subordinates (Gerstner and Day, 1997). While high-quality exchange relationships translate into reciprocal influence based on mutual trust and respect, low-quality relationships are characterised by role-defined and contractual exchanges that impose a top-down influence (Janssen and van Yperen, 2004). In high-quality relationships, supervisors tend to provide support and autonomy that allows their employees to initiate, control and carry out their tasks. Employees then reciprocate through performance improvement as they are intrinsically motivated and more confident.

Self-efficacy is regarded as a personal resource that FLEs can use to perform their job. Self-efficacy, defined as one's belief in his/her ability to complete tasks, is a psychological mechanism that triggers human behaviour (Bandura, 1977). The cognitive appraisal of individuals' capabilities is related to psychological resilience, which enables individuals to control and influence their environments effectively. Hence, self-efficacy is viewed as a personal resource that initiates coping behaviours and exerts the effort needed to produce positive consequences (Bandura, 2000).

Self-efficacy is malleable; therefore, it tends to increase over time, as employees build confidence in fulfilling their role in the organisation through social learning processes (Gist and Mitchell, 1992). It is associated with either specific tasks and situations or general traits, which can differ conceptually and psychometrically (Stajkovic and Luthans, 1998). While

specific self-efficacy refers to "how well one believes he [or she] can perform given the specific social context and the particular task", general efficacy rarely accounts for "the variability in self-perceptions across diverse domains" (Stajkovic and Luthans, 1998, p. 244). In other words, general efficacy is related to employees' self-reflection in general (e.g. "I am an efficient worker"). Specific efficacy is associated with their self-appraisals of task performance in the given social setting (e.g. "I will succeed in this task"). The present study focuses on specific efficacy because it is affected by contextual variations in the job resources available to FLEs and idiosyncratic self-referent appraisals.

Quality orientation is an organisational resource that affects FLE work performance. It refers to a service organisation's strategic focus on achieving high levels of service quality and customer satisfaction (Marinova *et al.*, 2008). It manifests in managerial practices and priorities oriented towards the delivery of superior customer service (Marinova *et al.*, 2008). These practices and priorities set management directions and actions that guide employees to attain desirable organisational outcomes. When employees share the perception that delivering high service quality is important to management, quality orientation becomes part of the organisational culture that shapes employee attitudes and behaviours (Deshpandé and Webster, 1989). Accordingly, we view quality orientation as a resource that is embedded in the organisation.

Quality orientation is conceptually akin to the concept of service climate (Salanova *et al.*, 2005; Schneider *et al.*, 1998) defined as "employee perceptions of the practices, procedures, and behaviours that get rewarded, supported, and expected with regard to customer service and customer service quality" (Schneider *et al.*, 1998, p. 151). Considering that both constructs' conceptualisation lies in a service culture that prioritises the delivery of superior customer service, it is reasonable to assume their conceptual similarity. Prior studies have shown the significant effect of service climate on customer satisfaction (Johnson, 1996) and service quality perceptions (de Jong *et al.*, 2004; Schneider *et al.*, 1998).

Relationships between resources
The organisational behaviour literature indicates that job-specific resources enhance FLEs' self-efficacy. These resources make employees "feel more capable of controlling their work environment, [thus allowing them to become] more confident and proud of the work they do [and to] find meaning in it" (Xanthopoulou *et al.*, 2007, p. 136). Conversely, poor work resources lead to a lack of employee efficacy beliefs (Schaufeli and Salanova, 2007). Hence, we expect such resources to boost FLE efficacy.

H1. Job resources are positively related to FLE self-efficacy.

Schneider *et al.* (1998) maintain that job-related and personal resources fall broadly into the category of "general facilitative conditions". The conditions that sustain employee performance include the removal of work obstacles, supervisory support and human resource policies. As such, resources as facilitative working conditions substantiate strategic orientations (Bakker and Demerouti, 2007) and direct employee attitudes and behaviours (Marinova *et al.*, 2008).

The resource-quality orientation association is implicitly suggested in the literature. In a qualitative study to uncover the themes related to employee perceptions of service excellence, Schneider *et al.* (1992) observe that job resources are prerequisites to shape the quality orientation of a firm. Similarly, de Jong *et al.* (2004) report that intra-team support in boundary-spanning self-managing units at a retail bank positively affects employee perceptions of group-based practices related to service excellence.

As aforementioned, perceived efficacy enables employees to control and influence their environments to achieve favourable business outcomes (Bandura, 2000). Self-efficacy can be a facilitating condition that employees activate to deal with work obstacles. When facilitating conditions support management quality-oriented practices and priorities, a firm can build strategic orientation towards service quality (Schneider *et al.*, 1998).

H2. (a) Job-related resources and (b) self-efficacy is positively associated with quality orientation.

Antecedents of employee engagement
Of the numerous definitions of employee engagement in the literature, we use Kahn's (1990) multifaceted conceptualisation. According to Kahn, it refers to as "the harnessing of organisation members' selves to their work roles" (p. 694). Engaged employees go beyond a physical presence at work and express themselves physically, cognitively and emotionally during role performances.

Researchers have indicated that the availability of job-related resources leads to employee engagement. Particularly, Wollard and Shuck (2011), who reviewed published psychology and management works since 1990, identified the antecedents of employee engagement at the individual and organisational levels. Individual-level antecedents include a safe and meaningful workplace, work–life balance, personal involvement, personality traits and self-efficacy. Organisational-level antecedents include organisational culture (e.g. corporate social responsibility, mission and vision and workplace climate), managerial practices (e.g. encouragement, feedback, leadership and support) and job characteristics (e.g. clear expectations, job fit, task levels, learning opportunities and rewards). Organisational-level resources motivate customer-contact employees to become more engaged in their jobs (Salanova *et al.*, 2005; Schaufeli and Bakker, 2004).

Kahn (1990) views social support as a significant engagement precursor. In line with this perspective, Saks (2006) notes that a supportive workplace in an educational setting is critical for teachers to engage in their work. Rich *et al.* (2010) also find organisational support to have a greater positive impact on engagement than individual antecedents. Conversely, poor supervisor support along with a lack of external resources results in employee disengagement (Demerouti *et al.*, 2001).

The literature provides empirical evidence of the link between self-efficacy and employee engagement. In an educational setting, self-efficacious teachers tend to experience higher levels of work-related flow over time (Salanova *et al.*, 2006). Likewise, Heuven *et al.* (2006) observe that flight attendants who carry out emotional labour activate self-efficacy as a personal resource enabling them to be enthusiastic, energetic and passionate about their jobs. Xanthopoulou *et al.* (2007) further highlights efficacy beliefs that mediate the relationship between job-related resources and engagement.

A strategic direction that values customer service is as another necessary organisational resource to facilitate engagement (Wollard and Shuck, 2011). Quality orientation offers employees the supportive environment necessary for work engagement and influences FLEs' willingness and ability to provide quality customer service (Pimpakorn and Patterson, 2010). Research in the health-care environment discloses the strong, positive effect of a ward's service orientation on nurses' work engagement (Abdelhadi and Drach-Zahavy, 2012). In this regard, we presume that when employees recognize cultural orientation towards service quality, they become enthusiastic and dedicated to their work and put forth the effort and energy to deliver excellent service.

H3. (a) Job-specific resources, (b) self-efficacy and (c) quality orientation are positively related to employee engagement.

Drivers of frontline employee productivity

Efforts have been made to investigate the impact of self-efficacy and employee engagement on service employee productivity; however, their simultaneous impact has not been tested. As noted by Johnston and Jones (2004), there has been a lack of research investigating service productivity and its antecedents and outcomes. A scarcity of research on productivity in service settings is attributable to its complexity compared to productivity in manufacturing contexts. As opposed to manufacturing productivity, service productivity comprises multifaceted processes, consisting of internal efficiency (inputs induced by providers and customers), external efficiency (outputs from provider–customer interaction and customers' perceived service quality) and capacity efficiency (through effective resource management to meet demands) (Grönroos and Ojasalo, 2004). Productivity in services therefore is operationalised to measure the output value of the service process to reflect the heterogeneous service production inputs and customer participation in the process that considers the perceived quality variation (Johnston and Jones, 2004). In view of this conceptualisation, we consider service productivity as FLEs' operational efficiency in their in-role job performance that involves back-office operations and service encounters.

Research has shown that FLE performance is positively linked to self-efficacy. In a meta-analysis of 114 empirical studies over 20 years, Stajkovic and Luthans (1998) find the strongest association of self-efficacy with employee performance when compared to work-related attitudes, personality and other variables (e.g. education level, skills and goal setting), whereas they find a weaker relationship in actual work settings involving complex tasks. Luthans and Peterson (2002) also demonstrate that engaged employees and efficacious managers are important determinants of manager effectiveness. We thus expect self-efficacious employees to be more efficient and productive at work.

H4. FLE self-efficacy is positively associated with service productivity.

In addition to self-efficacy, recent work provides support for the direct impact of employee engagement on service performance. For example, Menguc *et al.* (2013) find that in a Canadian retail context, employee engagement improves customer perceptions of employee performance. A series of empirical studies by Karatepe (2012) and Karatepe and Aga (2016) further confirm this linkage in the hospitality and banking industry. The logic behind this relationship is that engaged employees tend to perform better than non-engaged employees because they feel happy, joyful and enthusiastic at work; are physically and mentally fit; build and use their personal and job resources; and influence others' engagement (Bakker, 2008). Such positive emotions elicited from work engagement enable employees to be more productive by widening their thoughts and actions and creating personal resources for future use (Fredrickson, 2001). FLEs who are energetic, enthusiastic and engrossed into their work even go beyond their prescribed roles (Rich *et al.*, 2010) and display customer-oriented behaviour for excellent service delivery (Pimpakorn and Patterson, 2010). Echoing these findings, we propose the following:

H5. Employee engagement is positively related to service productivity.

Customer satisfaction determinants
The influence of quality orientation on customer satisfaction can be inferred from Johnson's (1996) work. Of the eight dimensions of organisational practices that facilitate the delivery of superior service, Johnson reports that employee information seeking and attempting to meet customer expectations and needs, employee training and rewards and recognition have strong positive correlations with overall customer satisfaction. Such quality-oriented practices and priorities embodied in service culture are conducive to achieving high customer satisfaction levels.

Customer perceptions of service quality as a precursor of customer satisfaction have been well documented across various service contexts (Anderson and Sullivan, 1993; Cronin *et al.*, 2000; Spreng and Mackoy, 1996). Taken altogether, we expect FLEs who express favourable views of quality-oriented management practices to satisfy customers. We also expect customers who perceive high service quality to be satisfied.

H6. Quality orientation is positively related to customer satisfaction.

H7. Service quality is positively associated with customer satisfaction.

Despite the importance of achieving both customer satisfaction and employee productivity for a firm's financial success (Mittal *et al.*, 2005), there is little empirical evidence of this linkage in the literature. Some studies have examined the association of employees' work satisfaction with job performance (Janssen and van Yperen, 2004; Karatepe, 2012). Others argue in favour of both positive and negative relationships between customer satisfaction and employee productivity. On one hand, the trade-off between productivity and customer satisfaction in service firms is evident (Anderson *et al.*, 1997; Huang and Rust, 2014; Rust and Huang, 2012), although their simultaneous achievement is desirable for sustainable growth in the current marketplace (Mittal *et al.*, 2005). On the other hand, a positive relationship is inferred from Heskett *et al.*'s (1994) service-profit chain model, positing that the high value customers place on employees' efficient service delivery drive customer satisfaction and then profitability through customer loyalty. Taking into consideration the conflicting perspectives, we assume no linkage between the variables.

H8. FLE productivity has no significant relationship with customer satisfaction.

Methods
Data collection procedures and sample
Following Groth *et al.*'s (2009) procedures, dyadic data are collected from FLEs and customers in a retail bank in Ho Chi Minh City, Vietnam. Selecting a single bank for analysis allows us to control for possible confounding effects due to the variability in organisational (i.e. climate) and contextual (i.e. high- and medium-contact service) factors. We approached a medium-sized bank listed in Vietnam's Top 500 Companies in 2011 and requested its participation in this study and provision of a list of customer service representatives. The unit of analysis is a discrete service interaction between employees and their customers.

We prepared the English version of the questionnaire, translated it into Vietnamese and then back-translated it into English (Brislin, 1970). A comparison between the two translated versions was made to ensure conceptual equivalence. The translation accuracy was then audited by a bilingual researcher. We conducted 20 in-depth interviews with employees and customers of the bank to assess informants' understandings and the relevance of the questionnaire items. Based on the pre-test results, awkward or unclear phrasing was altered to fit to the study context.

We provided each participating employee with a pair of matching customer and employee questionnaires, an information sheet containing the study purpose and instructions and an envelope with a seal. Employees asked each customer to take part in completing the survey immediately after the service transaction. If the customer counterpart agreed, the employees simultaneously completed their questionnaire. Customers were instructed to put their completed survey into the envelope and seal them so that they were ensured confidentiality. The customers then handed the sealed envelopes back to the employees, who returned the completed survey pairs to us. Employees were informed that breaking the sealed envelopes would invalidate the questionnaire. Neither participating employees nor customers knew about the research topic; the information provided to all participants suggested that the study was about "satisfaction with services". The pairs of surveys were number coded to help track the one-to-one dyad. These procedures resulted in a total of 252 useable dyadic responses, representing a response rate of approximately 60 per cent.

We examined non-response bias as recommended in Armstrong and Overton (1977). A comparison of female and male customers revealed no significant difference in *service quality* ($F = 0.07$, $p = 0.79$) and *customer satisfaction* ($F = 5.25$, $p = 0.02$). In terms of FLEs' job tenure, we found no statistical significance in *self-efficacy* ($F = 1.77$, $p = 0.18$), *team support* ($F = 0.02$, $p = 0.88$), *working relationship with a supervisor* ($F = 0.09$, $p = 0.77$), *quality orientation* ($F = 1.88$, $p = 0.17$) and *FLE productivity* ($F = 0.04$, $p = 0.85$). Therefore, we concluded that non-response bias was not present in our data.

The employee respondents had a mean age of 33.4 years and mean employment tenure of 1.8 years. A majority of respondents (96 per cent) were female, which is typical of customer service representatives in retail banking in Vietnam. The average demographics of surveyed customers were: 40 per cent male, 40.3 years old, about 70 per cent with a college or advanced degree and a 2.4-year relationship with the bank.

Survey instruments

Measures for all constructs consisted of multiple items based on the previous literature and were modified to fit the context of this study. Specifically, s*elf-efficacy* was measured with three items adapted from Spreitzer (1995), *quality orientation* with four items from Marinova *et al.* (2008) and *team support* with six items from de Jong *et al.* (2004). Following Pimpakorn and Patterson (2010), we measured *employee engagement* with 12 items, tapping into the tripartite sub-dimensions: *vigor* with 4 items, *dedication* with 3 items and *absorption* with 5 items. All of these constructs were measured using a seven-point Likert scale (1 = strongly disagree to 7 = strongly agree). We assessed *working relationship with a supervisor* with seven items from Janssen and van Yperen (2004) using a seven-point scale (1 = a very low extent to 7 = a very high extent). Bi-dimensionally conceptualisation of *FLE productivity* was measured using eight items: *contact output* with five items and *backroom work* with three items (Singh, 2000). These items were evaluated using a seven-point scale (1 = very minimal to 7 = outstanding).

Customer service evaluations included *service quality* (measured with three items from Cronin *et al.*, 2000) and *customer satisfaction* (measured with 4 items from Chan *et al.*, 2010). Both constructs were measured using a seven-point Likert scale.

Control variables

We included age, gender and job tenure of FLEs as control variables affecting employee self-efficacy and work engagement and productivity (Karatepe and Aga, 2016; Karatepe and Ngeche, 2012). We also controlled for variables that might have confounding effects on customer satisfaction – customer gender, age, occupation, education and income, as well as

relationship length with the bank and frequency of use (Wang *et al.*, 2013). The inclusion of these variables in our model allowed for a more robust test of hypotheses.

Results

Test for a measurement model

We tested the factorial validity of the measurement model using confirmatory factor analysis (CFA) with maximum likelihood estimation in Mplus. The goodness-of-fit indices of our initially hypothesised model indicated a poor fit to the data ($\chi^2_{(1,349)}$ = 2,479.25, RMSEA = 0.06, CFI = 0.89, TLI = 0.89 and SRMR = 0.05). An inspection of the modification indices for factor loadings revealed cross-loading and low R^2 (< 0.4) for several items. For parsimony, we re-specified the model with these items being deleted (Byrne, 2011) and found a substantial improvement of the model fit ($\chi^2_{(712)}$ = 1,165.26, RMSEA = 0.05, CFI = 0.94, TLI = 0.93, and SRMR = 0.05).

Past work has suggested that all but the three latent variables (*job resources, employee engagement* and *FLE productivity*) are unidimensional. These constructs have a second-order factor structure: *job resources* as a bi-dimensional construct, including team support and working relationship with a supervisor; *employee engagement* as a tripartite construct, consisting of the sub-dimensions of vigor, dedication and absorption (Kahn, 1990); and *FLE productivity* as a higher-order explained by the two first-order factors of contact outputs and backroom work (Singh, 2000). Accordingly, we compared an uncorrelated, first-order CFA model with a second-order model. Results indicated that the second-order CFA model fit the data better ($\Delta\chi^2_{(3)}$ = 188.67, p < 0.001). We estimated an overall fit of the re-specified model of $\chi^2_{(715)}$ = 976.59, RMSEA = 0.04, CFI = 0.96, TLI = 0.96 and SRMR = 0.05, representing a reasonable fit to the sample data.

To ensure the internal consistency of each factor, we examined its Cronbach's alpha (α) and composite reliability (ρ). Both estimates for the respective factor (0.82 to 0.93) were above the recommended threshold of 0.70 (Table I). Given the acceptable fit indices, reliability coefficients and adequate size of parameter estimates of each latent construct, our measurement model was considered psychometrically valid.

Construct validity tests

We assessed the construct validity of the latent constructs using the criteria suggested by Fornell and Larcker (1981) and Anderson and Gerbing (1988). For convergent validity, we examined the strength of factor loadings, the significance of *t-values* and estimates of the average variance extracted (AVE). As indicated in Table I, all factor loadings were statistically significant and strong. We also found that all AVE estimates (0.65 to 0.82) were above the recommended cut-off of 0.50 (Table II). Consequently, all indicators provided evidence of convergence validity.

In terms of discriminant validity, we compared a construct AVE with shared variance with another latent construct (Fornell and Larcker, 1981). All squared correlations between the latent variables were below each of the construct AVEs (Table II), thus supporting discriminant validity.

An inspection of the correlations between the variables in Table II revealed no serious problem regarding multicollinearity. Further tests indicated a very low level of VIFs (all less than 1.80), which suggested no multicollinearity issue.

Common method bias

Although we obtained the measures of predictor and criterion variables from different sources (employees and customers), our data might still have common method bias because

Items	$\alpha\ (\rho)$	$\lambda\ (\gamma)$	t-value	R^2
Job resources				
Team support	*0.93 (0.93)*	*(0.85)*	*(24.76)*	*0.68*
We help each other in serving our customers when needed		0.83	38.05	0.70
Each team member is personally responsible for the assistance of other members in serving the customer		0.86	44.65	0.74
Members can always count on each other for support		0.86	45.83	0.75
Each team member is involved with what is going on in our team		0.87	47.87	0.76
Members are always willing to help each other		0.84	39.12	0.70
Working relationship with a supervisor	*0.88 (0.88)*	*(0.87)*	*(35.28)*	*0.79*
My working relationship with my supervisor is effective		0.85	35.90	0.72
I have enough confidence in my supervisor that I would defend and justify his/her decisions if he/she were not present to do so		0.79	28.10	0.63
My supervisor considers my suggestions for change		0.81	29.64	0.65
My supervisor and I suited to each other		0.78	26.33	0.60
Self-efficacy	*0.89 (0.89)*			
I am confident about my ability to do my job		0.88	42.96	0.77
I am self-assured about my capabilities to perform my work activities		0.91	48.95	0.82
I have mastered the skills necessary for my job		0.77	25.69	0.59
Employee engagement				
Vigor	*0.82 (0.82)*	*(0.93)*	*(33.72)*	*0.86*
At work, I feel full of energy		0.79	25.20	0.62
When I get up in the morning, I feel like going to work		0.79	26.08	0.63
In my job, I am mentally very resilient		0.76	23.01	0.58
Dedication	*0.82 (0.83)*	*(0.85)*	*(32.81)*	*0.74*
I feel happy when I am working intensely		0.76	24.96	0.58
I get carried away when I am working		0.87	35.88	0.76
It is difficult to detach myself from my job		0.74	21.86	0.55
Absorption	*0.86 (0.87)*	*(0.91)*	*(57.93)*	*0.85*
I find the work that I do full of meaning and purpose		0.87	38.88	0.75
My job inspires me		0.89	40.75	0.79
Quality orientation	*0.83 (0.84)*			
Management of the bank places the highest priority on delivering the best-quality customer service		0.86	33.22	0.74
Management of the bank focuses on ensuring the highest levels of customer satisfaction		0.85	32.42	0.72
Management of the bank views customer complaints as opportunities to improve future customer satisfaction		0.69	18.11	0.48
FLE productivity				
Contact output	*0.88 (0.88)*	*(0.88)*	*(27.43)*	*0.85*
My typical customer interaction time		0.74	22.20	0.54
My productivity in meeting my quotas and targets		0.78	26.87	0.61
My overall performance in reaching objectives		0.83	34.17	0.70
Following the bank's suggested customer service procedures		0.77	25.22	0.59

Table I.
Results of CFA

Items	$\alpha\,(\rho)$	$\lambda\,(\gamma)$	t-value	R^2
The expected number of customers I typically serve in a week		0.74	22.33	0.54
Backroom work	*0.89 (0.89)*	*(0.91)*	*(50.67)*	*0.73*
Providing accurate and complete paperwork		0.85	37.46	0.73
Overall knowledge of bank policies and procedures		0.84	36.26	0.71
Keeping abreast of my bank's policies		0.87	41.83	0.76
Customer perception of service quality	*0.92 (0.92)*			
The employee provided service reliability consistently and dependably		0.80	31.21	0.64
The employee was willing and able to provide service in a timely manner		0.87	44.69	0.75
The employee was competent		0.76	25.32	0.57
The employee was approachable and easy to contact		0.85	39.86	0.72
The employee was trustworthy and honest		0.76	25.20	0.57
The employee made effort to understand my needs		0.80	31.23	0.64
Customer satisfaction	*0.93 (0.93)*			
I am happy with my decision to use the bank		0.89	53.11	0.79
My choice of the bank was a wise one		0.89	52.04	0.79
I feel good about my decision to use the bank		0.93	67.36	0.86

Table I.

Variable	1	2	3	4	5	6	7
Job resources	(0.74)						
Self-efficacy	0.57	(0.73)					
Employee engagement	0.60	0.50	(0.81)				
Quality orientation	0.64	0.48	0.62	(0.65)			
FLE productivity	0.40	0.63	0.49	0.36	(0.80)		
Customer perception of service quality	0.09	0.07	0.14	−0.01	0.10	(0.67)	
Customer satisfaction	0.01	0.09	0.10	−0.10	0.15	0.62	(0.82)

Note: Parentheses indicate AVEs of each construct

Table II.
Correlations and
AVE estimates of the
constructs

of the use of self-reporting. Following Podsakoff *et al.* (2003), we assessed the presence of common method variance (CMV). We estimated a latent CMV factor on which all items in the model were loaded on one factor in CFA. The χ^2 difference between a single-factor model and the hypothesised measurement model was found to be insignificant ($\Delta\chi^2_{(10)} = 51.74$, $p < 0.001$). We further used the correlational marker technique to rule out such bias (Lindell and Whitney, 2001). We selected a marker variable theoretically unrelated to other variables and calculated the correlations between the variables. We found insignificant correlations between the marker variable and others. All of the significant bivariate correlations were found to remain significant, even after partialling out the effects of the marker variable. As a result, we concluded that common method bias was not of concern and thus had little influence on the significance of the paths.

Test for a structural model
Given the adequacy of the proposed factor structure and the relationships between the latent and measured variables, we examined the relationships between latent constructs (Figure 1). The fit indices of the hypothesised structural model indicated a reasonable fit to the sample data ($\chi^2_{(1,107)}$ = 1,475.26, RMSEA = 0.04, CFI = 0.95, TLI = 0.95 and SRMR = 0.06).

As illustrated in Figure 2, all paths hypothesised in the conceptual model, except one, were found to be statistically significant. Specifically, *job resources* positively and significantly predicted *self-efficacy* (β = 0.60, t = 11.72), which supports *H1*. The former explained 39 per cent of the variance in the latter.

Self-efficacy (β = 0.18, t = 2.17) and *job resources* (β = 0.53, t = 6.55) positively and significantly impacted *quality orientation* with employee variables being controlled. Both antecedents explained 44 per cent of the variance in *quality orientation*. These results provide empirical support for *H2a* and *H2b*: self-efficacious employees who work in a supportive environment positively perceive managerial practices and priorities oriented towards superior service delivery.

All but one resource was positively related to *employee engagement*: *job resources*, β = 0.37, t = 4.40 and *quality orientation*, β = 0.39, t = 4.73 (supporting *H3a* and *H3c*). *Self-efficacy* was an insignificant predictor (*H3b* is not supported). These predictors explained 49 per cent of the engagement variance. Job-specific and organisational resources affected engagement positively, even after controlling for employee age, gender and job tenure.

All things being equal, *FLE productivity* was positively predicted by both *self-efficacy* (β = 0.51, t = 7.84) and *employee engagement* (β = 0.24, t = 3.36). The antecedents accounted for almost half of the variance in *FLE productivity* (45 per cent). The results remain unchanged with no control variables. These findings provide empirical evidence supporting *H4* and *H5*.

Finally, *customer satisfaction* was related positively and significantly to *FLE productivity* (β = 0.16, t = 2.49) and *service quality* (β = 0.62, t = 14.14) but negatively to *quality orientation* (β = −0.13, t = −2.13) after controlling for customer gender, age, occupation, education and income along with patronage length and frequency. These paths explained 44 per cent of the variance in *customer satisfaction*. Our results thus support *H6* and *H7* but reject *H8*.
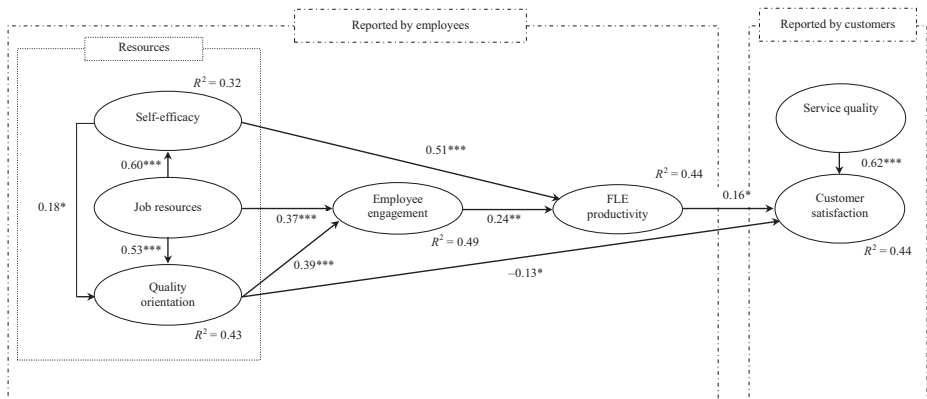

Figure 2.
Full structural model with confounding variables being controlled

Notes: *p < 0.05; **p < 0.01; ***p < 0.001; two-tailed

Furthermore, we estimated the effect of multiple mediators in the resources–customer satisfaction relationship using bootstrapping in Mplus. This procedure is superior to the causal steps and product-of-coefficients approaches because it takes into consideration multiple mediators, the potential non-normal sampling distribution of the indirect effects and the small sample size (Preacher and Hayes, 2008). Our model has several different indirect effects of *job resources* on *customer satisfaction*. With 5,000 bootstrapped samples, we found only one path from *job resources* to *customer satisfaction* via *self-efficacy* and *FLE productivity* to be significant (bootstrap estimate = 0.05 at $p < 0.05$ with bias-corrected 95 per cent confidence interval of 0.005 to 0.085). All other mediating effects were insignificant. This indicates that FLE job competency can be enhanced if the service firm provides its employees with social support, which improves service productivity and ultimately customer satisfaction.

Discussion

The purpose of this study is to examine the extent to which operational efficiencies and customer satisfaction can be simultaneously achieved through effective employment of resources available to FLEs. Guided by the JD-R model and theories of self-efficacy and COR along with empirical evidence in the literature, we formulate and test hypotheses that various resources would affect service productivity through employee engagement, which in turn influences customer satisfaction.

We find that customer satisfaction is positively predicted by both employee productivity and customer perception of service quality and negatively affected by quality orientation. Our finding on the positive influence of FLE service productivity is notable because it not only provides empirical support for earlier anecdotal work contemplating this association (Heskett *et al.*, 1994) but also refutes the trade-off effect in service industries (Anderson *et al.*, 1997; Huang and Rust, 2014; Rust and Huang, 2012). The negative effect of quality orientation on customer satisfaction found in this study is inconsistent with previous research results, suggesting that employees who favour customer-oriented practices exert themselves to achieve customer satisfaction (Johnson, 1996). In other words, management practices designed to enhance the service delivery of FLEs do not necessarily lead to satisfied customers. This reflects the need for further investigation in these areas.

We also observe that employee productivity is predicted by employee engagement and self-efficacy. The predictive power of employee engagement on employee in-role performance corresponds to the findings of Menguc *et al.* (2013), Pimpakorn and Patterson (2010) and Rich *et al.* (2010) (β ranging from 0.11 to 0.25). Interestingly, self-efficacy is a much stronger determinant of service productivity than employee engagement (Figure 2). This implies that employees' self-confidence in their effective control of and influence on the work environment carries more weight in improving job efficiency than the attention, energy and devotion that they display during their role performance. These findings echo the previous observations that self-efficacy is a better predictor of employee productivity compared to other attitudinal- and personality-related variables (Luthans and Peterson, 2002; Stajkovic and Luthans, 1998).

Finally, we demonstrate that self-efficacy is significantly predicted by job resources, which in turn influences employee productivity and thus customer satisfaction. That is, job resources are prerequisites for the enhancement of job competency and service productivity of FLEs, thereby positively impacting customer satisfaction. Our results confirm the overarching theories that underlie the role of resources: social support through teamwork and high-quality supervisor interactions is instrumental for FLEs in achieving the dual business objectives. This finding complements the extant literature

suggesting that employees in resourceful workplaces can deal with job demands to meet organisational goals (Demerouti *et al.*, 2001; Heuven *et al.*, 2006; Xanthopoulou *et al.*, 2007).

Implications for theory and practice
The theoretical implications of this study encompass two domains:

(1) applying a range of theories that underscore the resources as employee motivators to understand the underlying mechanism linking various resources to customer satisfaction; and

(2) providing empirical evidence on the compatibility of employee productivity with customer satisfaction.

Specifically, the current study finds that service firms that invest in social rapport such as teamwork and positive supervisor–employee relationship can improve both FLE productivity *and* customer satisfaction. Although considerable efforts have been made to examine the importance of resources in keeping employees motivated and engaged, little is yet known about how the resources available to FLEs affect service productivity and customer satisfaction. Using the customer-FLE dyads, this study extends previous investigations by examining the impact of resources on achieving desirable organisational outcomes in medium-contact service firms.

Most importantly, the study results empirically affirm anecdotal evidence regarding the positive relationship between the service productivity of FLEs and customer satisfaction. Our findings also dispute the conventional notion of the productivity-satisfaction trade-off in services from the perspectives of both employees and customers. The study findings add to the recent body of work by Rust and Huang (2012), Huang and Rust (2014) and Marinova *et al.* (2008) by focusing on the FLE level and providing empirical evidence from a medium-contact banking service in an emerging market. Therefore, the present study can contribute to filling the research gap and enriching the literature.

The study findings inform managers of the management of human and organisational resources. Particularly, our results suggest some practical provisions that directly and indirectly relate to an employee's ability to deliver efficient and effective service and, at the same time, to satisfy customers. Service firms can provide FLEs with appropriate job resources that build supportive teams among FLEs and develop and maintain favourable social exchanges with their supervisors. A sense of support in the team can be created through cross-training programs, group meetings and role-play exercises "aimed at consensus building on service delivery standards, joint problem identification and analysis of customer complaints, the provision of assistance to colleagues in dealing with customers, and groupware and shared databases that facilitate information exchange" (de Jong *et al.*, 2004, p. 32). Firms can also introduce mandatory communications and rapport-building mentoring programs to enhance the quality of employee–supervisor interactions.

Limitations and recommendations for future studies
Like all studies of this nature, this study has some limitations. First, although customer satisfaction is rated by customers, FLE productivity is rated by the employees themselves. While research has accumulated considerable evidence that employee self-reported behaviours have validity and are significantly correlated with the judgements of managers, supervisors' or managers' assessment of FLEs' reported productivity would provide some convergent validity regarding this measurement. Furthermore, prior studies that make use

of objective performance metrics have found evidence of a productivity–customer satisfaction paradox. There is further opportunity to affirm our finding of the comparability of FLE productivity and customer satisfaction when an objective metric of productivity is used.

Second, it is necessary to identify and test potential moderators. Despite the complexity of our model, we did not test for the possible intervening effects. For example, both task complexity and performance *locus* have been shown to moderate the relationship between self-efficacy and work performance (Stajkovic and Luthans, 1998). While the present study examines relatively less complex jobs (i.e. customer service officers), it would be worthwhile to examine more complex service roles, such as a range of professional services (e.g. financial professionals, doctors, IT services and the like), to see the extent to which task complexity moderates the self-efficacy-productivity linkage.

Moreover, this study examines only one service industry – the medium-contact service of retail banking. Recent work by Rust and Huang (2012) indicates that the relationship between productivity and service quality is likely to be contingent on a number of industry conditions, such as the degree of market concentration, profit margins and even price. These possible moderators call for further attention in future research.

Third, our results indicate that there is still a considerable amount of unexplained variance of job resources in endogenous latent variables. This may imply the presence of other measures of job resources such as autonomy (Salanova *et al.*, 2005) and organisational mission fulfilment (Karatepe and Aga, 2016). According to Bakker and Demerouti (2007), autonomy, along with social support, is an important work resource for FLEs that predicts employees' psychological well-being and behaviour. In spite of the complexity of the hypothesised model, we are unable to include other possible antecedents that may influence employee self-efficacy, such as personality and motivation (Gist and Mitchell, 1992). Future research can integrate these variables into the model and test how they interact with all considered determinants of resources in this study. It would also be interesting to determine how the resources available to FLEs are linked to service recovery performance, as suggested by Karatepe (2012).

Fourth, we highlight the JD-R model and theories of self-efficacy and COR to demonstrate that resources play a crucial role in motivating FLEs not only to enhance their productivity but also to satisfy customers. Additional study could delve into the interaction effect between job demands and resources in meeting organisational goals, considering that job demands constitute another aspect of the JD-R model. Further study using a longitudinal dataset could be conducted to examine the lagged effects between constructs (Xanthopoulou, 2009).

Lastly, our study is conducted in an eastern, highly collectivist society in which the communication style is indirect, context specific and nuanced. Given that such society is hierarchical, communications between employees are influenced by ones' formal status. A "customer is always right" mindset also prevails, thereby pushing FLEs to give priority to satisfaction over productivity. Hence, replication studies in western, individualist cultures should be undertaken.

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