



# The link between organizational learning culture and customer satisfaction

## Confirming relationship and exploring moderating effect

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### Abstract

**Purpose** – The aim of this paper is to develop a theoretical framework and conduct an empirical study across different service sectors to investigate the inter-relationships between organizational learning culture, employee job satisfaction and their impact on customer satisfaction. It also aims to examine an individual-level variable (educational level) to see if it exerts possible moderating effects on the aforementioned relationships.

**Design/methodology/approach** – A structured questionnaire was used to collect data from employees in three companies that belong to different service sectors (port, supermarket and automobile repair service). A sample of 437 usable questionnaires from first line employees was collected. Regression analysis, including a moderated mediation analysis, was used to examine the relationships.

**Findings** – The results confirmed the mediating role of employee job satisfaction on the relationship between organizational learning culture and customer satisfaction. In addition, this study empirically supported the premise that the indirect effect of organizational learning culture on customer satisfaction via employee job satisfaction will be stronger when employee education is at a high level than when employee education is at a lower level.

**Originality/value** – This study highlights that when the employees are supported by their organization's culture, not only are they provided with new knowledge and skills, but they are also more likely to be satisfied by their jobs. This spurs them to offer high-quality services that will satisfy their customers' needs.

**Keywords** Organizational learning culture, Employee job satisfaction, Customer satisfaction, Education level

**Paper type** Research paper

### 1. Introduction

In the current economic conjuncture, delivering high quality and keeping customers satisfied is viewed as critical for survival. This is of particular interest in the service industries, where employees interact in a very personal manner with customers and affect their perceptions of service quality. Thus, skills and capabilities of first-line employees, as well as human resource practices and methods aiming to increase their satisfaction levels, have become very important in service industry. Job skills and satisfaction positively affect employee behaviour during moments of truth. However,



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in a dynamic context, the success of an organization does not depend solely on the current levels of employee skills, capabilities and knowledge, but mainly on their ability to improve themselves on an ongoing basis (Somerville and McConnell-Imbriotis, 2004). The previous ascertainment sparked the concept of an organizational learning culture. This is a culture that significantly contributes to the continuous improvement of a firm, as it facilitates efficient adaptations to challenging environments (Cunningham and Gerrard, 2000), self-transformation (Watkins and Marsick, 1993) and expanded capacity to shape its own future (Senge, 1990). This learning ability to adjust to any initially unforeseen changes in the environment should be the continuing and driving force for all viable organizations. Organizational learning culture has been linked to employee and organizational performance as well as to psychological and economic outcomes.

Research has provided evidence supporting the idea that an organizational learning culture improves employee attitudes, e.g. job satisfaction (Rose *et al.*, 2009). However, according to Rowden and Conine (2005 p. 465) the existing literature needs additional research in order to “[. . .] to further understand this apparently powerful link between workplace learning and job satisfaction. If this powerful link continues to surface in other sectors and larger companies, managers concerned with the level of job satisfaction among their employees may want to encourage more learning opportunities in the workplace”. Egan *et al.* (2004, p. 298) also proposed that “continued efforts exploring the dynamics associated with interactions between organizational learning culture and employee satisfaction, learning, and performance are essential for the ongoing development of research and practice unique to HRD”.

In addition, many studies indicated the impact of organizational learning culture on firms’ financial performances (Skerlavaj *et al.*, 2006; Spicer and Sadler-Smith, 2006, Correa *et al.*, 2007). However, only a few studies have attempted to assess the relationship between OLC and nonfinancial outcomes, such as service quality or customers’ satisfaction. It has been supported that “nonfinancial measures are better predictors of long-term financial performance than current financial measures; they help refocus managers on the long-term aspects of their actions” (Banker *et al.*, 2000, p. 65).

In the light of the previous limited findings and suggestions, this empirical survey seeks to fill this gap in the literature by examining data from three different service industries (port, supermarket and repair automobile service) and providing new insights regarding the mediating role of employee job satisfaction on the relationship between organizational learning culture and customer satisfaction. As Rose *et al.* (2009) noted, some studies have tested the role of job satisfaction as a moderating variable. Some linked organizational learning culture to customer satisfaction, or job satisfaction to customer satisfaction. However, none of these focus on the mediating role of employee job satisfaction on the relationship between organizational learning culture and customer satisfaction. This model highlights that when the employees are supported by their organization’s culture, not only are they provided with new knowledge and skills but are also more likely to be satisfied by their jobs; they are better able to offer high-quality services that will satisfy their customers’ needs. In addition, this study empirically tests the effect of a moderating variable (education level) on the relationship between organizational learning culture, job satisfaction and customer satisfaction.

The paper is divided into five sections. Section 2 presents the conceptual framework and hypotheses of the study. Section 3 describes the implemented methodological frame. The main results of the survey are given in section 4. In section 5, a summary of the main findings, the managerial implications, some limitations and proposals for future research are presented.

## 2. Conceptual background

### 2.1 Organizational learning culture

The organizational learning culture is a type of organizational culture that integrates organizational learning. It “supports the acquisition of information, the distribution and sharing of learning”, and it “reinforces and supports continuous learning and its application to organizational improvement” (Bates and Khasawneh, 2005, p. 99). Aspects of organizational environment, such as climate or culture, have been shown to influence employee job satisfaction as a work-related outcome (Lund, 2003). Harris and Mossholder (1996) consider organizational culture as the heart of human management strategy because of its influences on individuals’ attitudes and outcomes such as commitment, satisfaction, retention, performance, etc. Lund (2003) found that job satisfaction levels varied across different corporate cultural types. In his empirical survey it was found that job satisfaction was positively related to clan and ad-hocracy cultures, and negatively related to market and hierarchy cultures. In related studies, Clark (2001) supported that a bureaucratic culture has a negative influence on job satisfaction whereas Armstrong-Stassen (2004) reported that a supportive culture is positively associated with employee job satisfaction. Wallach (1983) indicated that employee performance and job satisfaction depend on a match between the organizational culture and the characteristics of an individual employee.

Thus, it is expected that an organizational learning culture has a significant impact on job satisfaction. Previous research supported the idea that there is a positive significant link between workplace learning (formal, informal, and incidental) and employee job satisfaction (Rowden and Ahmad, 2000). This survey, conducted in Malaysia targeting small to mid-sized businesses, found evidence that employees with opportunities to develop and learn at their jobs express higher levels of overall job satisfaction. The empirical results also confirmed that the promotion of an organizational learning culture can enhance job satisfaction. Both of these factors influence organizational outcome variables such as motivation to transfer learning and turnover intention. Similarly, Egan *et al.* (2004) found evidence that organizational learning culture has a direct and indirect impact, through the mediator of job satisfaction, on employee turnover intention. They noted that despite the high correlation between the organizational learning culture and job satisfaction, these two constructs tend to be distinct both conceptually and in terms of measurement. Tsai *et al.* (2007), also using both qualitative and quantitative methods, showed that two criteria for job satisfaction (relationship with colleagues and relationship with the family) significantly related to employees’ learning commitment. Mikkelsen *et al.* (2000) found that a positive learning climate reduces job stress and also had a direct and positive impact on job satisfaction and employee commitment. Chang and Lee (2007) conducted quantitative research targeting different industries in Taiwan and found that the operation of learning organizations has a significantly positive effect on employees’ job satisfaction. Chiva and Alegre (2008) provided empirical evidence of the relationship between emotional intelligence and job satisfaction by taking organizational learning

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capability into consideration. A significant positive association was also proposed between organizational learning, job satisfaction and staff empowerment related to after-school programs of the US and Israel (Orthner *et al.*, 2006). Price and Mueller (1981) proposed that one the job facet of general training increases job satisfaction and subsequent intentions to stay.

The impact of an organizational learning culture on a firm's financial performance and overall assessment approaches has received considerable attention in different fields such as management, marketing, accounting, and strategy. For example, Ellinger *et al.* (2002) conducted research that suggests the existence of a positive association between the seven dimensions of the organizational learning culture, as articulated by Marsick and Watkins (1999), and both the perceptual and objective measures of firms' financial performance, explaining 10 percent of its variance. Yang (2003) also found evidence that the measures of these seven dimensions of the learning culture have statistically significant effects on organizational outcomes. Goh and Ryan (2008), using market financial and accounting financial data, showed that learning companies demonstrated stronger performances in financial markets over time as compared to their closest competitors. However, to the best of our knowledge, only a few studies have attempted to assess the relationship between OLC and customer satisfaction. An empirical survey based on a sample of 200 Australian organizations found that learning organization displays a moderate to strong link with three measures of performance (knowledge performance, financial performance and customer satisfaction) at a self-managed work team level (Power and Waddell, 2004). The research, by Hays and Hill (2001), strongly supported the mediating effect of employees' motivation/vision in the relationship between learning through service failures and the customer intent to return to the same hospitality industry.

Linking the previous findings, it is hypothesized that in an organizational learning culture that encourages and supports individual learning and development, the employees can respond more quickly and effectively to customers' needs – thus achieving a competitive advantage that is difficult for competitors to emulate, and easily recognized by customers. Senge (1990) proposed that long-term superior performance depends on superior learning provided by an organization. In learning organizations, much of the training focuses on soft skills such as problem-solving, decision-making, and need analysis – all of which have a direct impact on customer satisfaction.

Therefore, based on the previous literature, this study predicts the following two hypotheses:

- H1.* Organizational learning culture will have a direct and positive effect on job satisfaction.
- H2a.* Organizational learning culture will have a direct and positive effect on customer satisfaction.
- H2b.* Organizational learning culture will have an indirect and positive effect on customer satisfaction through job satisfaction.

### *2.2 Job satisfaction and customer satisfaction*

It is argued that a worker's level of job satisfaction can be used as a measure of a worker's relative utility on the job and, as such, is an important indicator of a worker's

attitude and behaviour. Specifically, it has been confirmed that employee job satisfaction has an important influence on customer satisfaction. Satisfied employees tend to be more productive, provide better services to customers, and hence, can significantly enhance business profitability (Pantouvakis and Bouranta, 2013). The cycle of success, proposed by Schlesinger and Heskett (1991), suggests that satisfied employees will deliver high service quality. In a similar vein, the service-profit chain establishes a relationship among profitability and growth due to customer loyalty and satisfaction – which is, in turn, due to services provided by satisfied employees (Heskett *et al.*, 1994). Vilarés and Coelho (2003) proposed a reformulation of the ECSI model, establishing that perceived employee satisfaction, loyalty, and commitment have an important impact on perceived product quality and perceived service quality. Apart from the aforementioned studies, there are other empirical studies that have tested the relationship between employee job satisfaction and customer service quality to service businesses (Gil *et al.*, 2008; Schlesinger and Zornitsky, 1991). Nonetheless, it should be pointed out that some studies claim that the measurement of customer satisfaction should be based exclusively on the interactive quality, since employees cannot affect customer satisfaction in regard to physical quality; that is determined by the administration and budget. More specifically, Snipes *et al.* (2005) proved that some job satisfaction facets, such as satisfaction with customers, satisfaction with benefits and satisfaction with the work itself, may have a larger effect on service quality than others. Their study focused on items that represented the employee-related aspects of service quality.

Taking into consideration the previous review on the relationship between job satisfaction and customer satisfaction, this study predicts the third hypothesis:

*H3.* Job satisfaction will have a direct and positive effect on customer satisfaction.

The conceptual framework of this study, as summarised in hypotheses *H1*, *H2* and *H3* is depicted in Figure 1.

The present study aims also at exploring the moderating effect of employees' education on the relationship between organizational learning culture, job satisfaction and customer satisfaction. Usman *et al.* (2011), based on the empirical findings of their research, concluded that “educational level of the employees plays a significant role in developing the professional attitude and behavior of employees [...] supports employees and provides platform for quality learning and behavior modification with an increasing performance and creativity” (p. 1689). Rebelo and Gomes (2011) found that employees with higher levels of schooling tend to be more sensitive and predisposed to learning in the workplace. Thus organizations with a more highly educated workforce tend to have greater orientation toward learning. These observations are explored in *H4*.

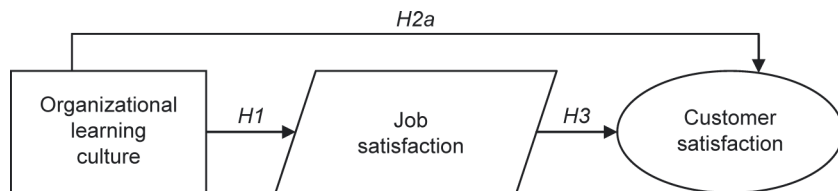


Figure 1.  
Conceptual framework of  
the study

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- H4. The organizational learning culture's effect on customer satisfaction will be mediated by employee job satisfaction, and this relationship will be moderated by employee educational level. Specifically, the indirect effect of organizational learning culture on customer satisfaction via employee job satisfaction will be stronger when employee education is high than when employee education is low.

### 3. Methodology

#### 3.1 Measures

The questionnaire consisted of 21 items split into three survey instruments that measure organizational learning culture, job satisfaction, and customer satisfaction. The ideal OLC is supposed to have certain dimensions ranging from ten (Philips, 2003) to five (Senge, 1990). Watkins and Matkins (2003) put forth a framework (DLOQ) to identify seven action imperatives of an organizational learning culture. DLOQ has served as a theoretical base for this study. The cultural characteristics of DLOQ are summarised as follows: continuous learning, inquiry and dialogue, team learning, embedded systems, empowerment, connection to environment, and strategic leadership. The measurement of organizational learning culture was based on a shortened version of the DLOQ, originally developed by Watkins and Marsick (1997). This version includes only seven items, one from each dimension, and is useful for "understanding the complex relationships between organizational learning culture and a number of other organizational variables" (Yang, 2003, p. 160).

The measurement of job satisfaction was based on the Job Satisfaction Survey (JSS) instrument (Spector, 1985). The nine-dimensional construct is based on pay, promotion, supervision, fringe benefits, contingent rewards, operating procedures (required rules and procedures), co-workers, the nature of the work, and communication. This instrument was chosen because it was developed specifically for use in service organizations. The measure asks employees how each of the nine facets affected their perceived job satisfaction. The core question was "how satisfied are you with [...]?". Respondents were asked to rate their degree of job satisfaction on a seven-point Likert scale ranging from "extremely dissatisfied" to "extremely satisfied".

Customer satisfaction was measured with five items, based on Lam *et al.*'s (2004) instrument. The items in these two instruments took the form of a seven-point psychometric Likert scale (anchored on 1 = "strongly disagree" through 7 = "strongly agree").

The wording of all items, along with the statistical analysis, appears in Appendix 1 (see Table AI). The self-administrated questionnaire also included a series of questions related to the demographic characteristics of the sample.

#### 3.2 Sample

As explained in a previous section, this study was conducted with a focus on three companies from different service sectors (port, automobile service repair and supermarket). The service settings were chosen based on Schmenner's (2004) typology. He divided the landscape of services into four quadrants (service factory, service shop, mass service and professional service), framed by the degree of variation in the customization and interaction and relative throughput time. Thus, the port belongs to the service factory (low degree of variation – low relative throughput time), the automobile repair service (high degree of variation – low relative throughput time) to

the service shop and the supermarket to mass service (low degree of variation – high relative throughput time). The fourth quadrant, which refers to the professional service (high degree of variation – high relative throughput time), was not represented in the sample, as it refers to a very specific target of services.

The sample represents employees and supervisors and is considered to be representative when taking into account ranges of age and gender. The questionnaire was given only to first-line employees who were identified from the HR department database. A cover letter was included in the mailing to all sample members, explaining the purpose of this academic study, along with the questionnaire and a return envelope addressed to one of the authors. Participants were assured of total confidentiality and anonymity. A sample of 463 questionnaires from the contacted employees was collected, of which 26 were excluded because they provided answers that were uniformly positive or negative (skewed responses). Hence, the usable questionnaires were 437 from the three services: port ( $n = 168$ ), supermarket ( $n = 130$ ) and repair automobile service ( $n = 139$ ). Analyses of variance (ANOVA) showed significant differences among the service sectors regarding the three measurement variables of job satisfaction ( $F = 16.717, p = 0.000$ ), customer satisfaction ( $F = 13.088, p = 0.000$ ) and organizational learning culture ( $F = 16.760, p = 0.000$ ). Specifically, employees in automobile repair services have higher levels of organizational learning culture ( $M = 4.68, SD = 1.08$ ), perceived higher level of job satisfaction ( $M = 4.71, SD = 0.99$ ) and provide better services to their customers ( $M = 4.92, SD = 1.05$ ) than those in the port ( $M = 4.01, SD = 1.35, M = 4.39, SD = 1.00, M = 4.29, SD = 1.04$  respectively) and than those in the supermarket ( $M = 4.17, SD = 1.31, M = 3.91, SD = 1.25, M = 4.54, SD = 1.08$  respectively). These notable differences may be a reflection of the diverse nature of these service settings.

## 4. Results and discussion

### 4.1 Assessing the dimensionality of the instruments

Following the descriptive analysis of the data, an exploratory factor analysis (EFA) was carried out for each instrument (organizational learning culture, job satisfaction, and customer satisfaction). The factor analysis used principal components analysis to extract the factors. A varimax rotation was used to improve the interpretation.

As displayed in Appendix 1, the factor analysis of organizational learning culture instrument, revealed a one-dimensional factor that explains 57.5 percent of total variance, a satisfactory result in the context of social science research (Hair *et al.*, 2006). Turning next to job satisfaction, the factor analysis revealed one factor accounted for 57.8 percent of the variance. Finally, the items of the customer satisfaction instrument loaded on one factor, which explained 64.1 percent of the variance. The Kaiser-Meyer-Olkin index and the Bartlett test of sphericity provided satisfactory results.

### 4.2 Assessing the reliability and validity of the instruments

In order to check the reliability of the measurement instruments, the Cronbach's alpha of the scale was calculated (Cronbach, 1951). The test of reliability for each of the instruments (see Appendix 1) provided alphas that exceeded the acceptable cut off point of 0.70 (Nunnally, 1978).

The measurement of the concepts was based on previously developed instruments, so that content validity was assured. Convergent validity was tested calculating the

average variance (AVE) extracted by each factor (Fornell and Larcker, 1981). The results verify the convergent validity of the measurements, indicating that the variance for each factor exceeds the proposed cut-off point of 0.5 (see Appendix 1). Examining the discriminant validity of the instruments, it was found that the square root of AVE was greater than the coefficient, which demonstrated discriminant validity between the constructs.

4.3 Testing the proposed model

The linear regression approach proposed by Baron and Kenny (1986) was used to test the mediation model, which is presented in Figure 1. Based on their approach, a regression analysis was conducted and the significance of the coefficients was examined in order to accept or reject the hypotheses. First, customer satisfaction is the dependent variable, and organizational learning culture the independent variable. Second, job satisfaction forms the dependent variable, and organizational learning culture the independent variable. Third, job satisfaction adds to learning culture and regresses with customer satisfaction.

The results, which are presented in Table I, indicated that organizational learning culture is directly and positively related with job satisfaction, confirming *H1*. Organizational learning culture also directly and significantly influences customer satisfaction at the  $p$  value  $< 0.000$  level, and therefore, *H2a* is supported. *H3* contends that employee job satisfaction is positively related to customer satisfaction. This hypothesis is supported at the 0.000 level. However, the results indicate that while organizational learning culture ( $r = 0.68, p < 0.000$ ) is significantly related to customer satisfaction, the  $\beta$  value is smaller ( $r = 0.42, p < 0.000$ ) after the addition of the mediator. To check whether this reduction is significant, the Sobel test was used (Sobel, 1982). The results of this test ( $z = 14.94, p = 0.000$ ) confirm that job satisfaction exerts a mediating effect. However, the effect of the organizational learning culture on customer satisfaction, controlling for job satisfaction, has nonzero coefficients. Thus perfect mediation cannot be claimed. Based on the previous partial mediation, *H2b* is supported. For exploratory and generalization purposes, the proposed model was also assessed on the disaggregated service industry samples (port, supermarket and automobile repair service). The results were similar to those reported for the overall sample (see Appendix 2, Table AII).

*H4*, which referred to moderated mediation, was examined through the use of three multiple regression analyses using the procedure outlined by Muller *et al.* (2005). According to this approach, the steps which follow should be followed:

- the dependent variable (customer satisfaction) is regressed on the independent variable (organizational learning culture), the moderator (employee education)

Y	Job satisfaction	Customer satisfaction	Customer satisfaction
$R^2$	0.59	0.46	0.51
$F$	625.98*	15.75*	223.27*
Beta-Organizational learning culture	0.77*	0.68*	0.42*
Beta-Job satisfaction			0.33*

Notes: Betas reported are standardized values. \* $p < 0.000$

**Table I.**  
Results of regression equations for the overall model



and the product-term of the independent variable and the moderator (organizational learning culture x employee education);

- the mediator (job satisfaction) is regressed on the independent variable, the moderator, and the product-term of the independent variable and the moderator; and
- the dependent variable is regressed on the independent variable, the moderator, the product-term of the independent variable and the moderator, the mediator and the product-term of the mediator and the moderator.

The product-terms were calculated using standardized scores in order to reduce the collinearity between the product-terms and their constituents. The results of the moderated mediation analysis, using employee educational level as a moderated variable in the mediated model, are presented in Table II.

The three first conditions proposed by Muller *et al.* (2005) are met; the fourth one is met marginally. Specifically, a. an organizational learning culture significantly predicts customer satisfaction (1st condition), b. the relationship between customer satisfaction and the OLCxE product-term is not significant (2nd condition), c. an organizational learning culture significantly predicts job satisfaction (3rd condition) and d. the JSxE product-term significantly predicts customer satisfaction (4th condition). As we can see, the JSxE product-term has low power, which means that it is likely to yield a non-significant interaction effect when, in fact, there is one. To further examine the moderating effect of job satisfaction on the relationship between organizational learning culture and customer satisfaction, employee educational level was split into groups (low and high), and the difference in the correlation between job satisfaction and customer satisfaction for the two groups was examined using Fisher's Z-transformation technique. The low group ( $n = 274$ ) consisted of participants who earned high school diplomas or college-associate degrees, while the high group ( $n = 163$ ) consisted of participants with bachelors' or post-graduate degrees. Although job satisfaction has a significant positive correlation with customer satisfaction for both groups (low group  $r = 0.43$ ,  $p = 0.000$  and high group  $r = 0.52$ ,  $p = 0.000$ ), Fisher's technique revealed a significant difference between these two groups ( $Z = 8.97$ ,  $p = 0.03$ ). Taking the previous findings into consideration,  $H4$  was supported.

Predictors	Equation 1 (criterion CS)		Equation 2 (criterion JS)		Equation 3 (criterion CS)	
	<i>b</i>	<i>t</i>	<i>b</i>	<i>t</i>	<i>b</i>	<i>t</i>
Organizational learning culture (OLC)	0.68	19.05***	0.78	24.99***	0.45	8.32***
Education (E)	0.01	0.39	0.05	1.69	0.01	0.12
OLCxE	-0.02	-0.53	0.04	1.16	0.10	1.76
Job Satisfaction (JS)	-	-	-	-	0.30	5.65***
JSxE	-	-	-	-	-0.16	-2.90***

**Note:** customer satisfaction=CS

**Table II.**  
Least squares regression  
results for moderated  
mediation by educational  
level

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## 5. Conclusions and managerial implications

The present study supports the mediating effect of job satisfaction between organizational learning culture and customer satisfaction. This mediation model seems to have general applicability across different types of service firms, as it was tested in three different service settings (port, supermarket and automobile repair service). Specifically, it was found that the ability of a service industry to satisfy its customers is directly and indirectly associated, through employee job satisfaction, with its continuous ability to effectively and efficiently respond to environmental stimuli. These findings are in line with the results from previous studies which have supported step by step the relationships between organizational learning culture, job satisfaction, and ultimately customer satisfaction. Specifically, researches showed that organizations focusing on employee education and viewing the on-going development of their employees as priority increased employee job satisfaction (Rowden and Conine, 2005; Egan *et al.*, 2004, Chang and Lee, 2007). According to Vilares and Coelho (2003) perceived employee satisfaction had an important impact on perceived product quality and on perceived service quality since it is difficult for dissatisfied employees to deliver services that satisfy their customers (Rogers *et al.*, 1994). The moderating role of employee job satisfaction between OLC and work performance (Rose *et al.*, 2009) or organizational performance (Egan *et al.*, 2004) has also been supported. However, this study reveals the direct and indirect impact of job satisfaction and an organizational learning culture to customer satisfaction. This finding yields a qualitative indicator of factors that contribute towards customer satisfaction. Qualitative measures are more beneficial than quantitative or subjective indicators since these latter indicators reduce the speed of feedback, which is especially important in a rapidly changing business environment (Eccles and Philip, 1992).

In practice, the previous results mean that HR managers in the service industry should pay a good deal of attention to the recruitment process, selecting not only employees with suitable skills and experience but also individuals eager to become better and better through learning. Learning employees are a valuable asset in any organization as they make the effort to continuously improve their competencies that can benefit the organization. Next, those employees with ability to learn new techniques and obtain new skills should be encouraged to participate in company training courses. In order to benefit from individual learning, organizations should create an environment that promotes and supports learning. Thus, HR departments should be committed to long-term employee development, giving them the opportunity to continue to grow and add to their knowledge. People should be encouraged to learn new skills and not be punished for making mistakes – which in this context are seen as part of the learning process. As part of this mentality, the service companies should gather information and review their situations in relation to the industry and the environment in which they are operating. Information on changes at every level would help them to be proactive rather than reactive. Communication channels should be open in order to prevent negative results including missed opportunities, delays, and customer complains, etc. With effective communication supervisors maintain good human relationships in the organization and encourage the flow of ideas or suggestions from employees. The development of “feedback loops” for employees and customers reveal new ideas to the organization and uncover problems.

In the service management era, empowered and informed people on almost every level of the hierarchy are in a favourable position to contribute and assist with process

change that is required for success. Senior management should further take the necessary actions to improve the whole system, communicate their actions among employees and seek employee participation and involvement. Consequently, aspects such training, reward and recognition, and motivation aiming at increasing satisfaction, skills and capabilities of employees, should be at the forefront of any successful service company's current vision, plans and strategies. Employees' training will not only increase their efficiency and productivity but also lead to improved employee satisfaction. Skilled and satisfied contact personnel should provide better service to customers, especially during the service encounter process or during a critical incident.

An important contributor to organizational learning culture is leader behaviour. Organizational leadership should continuously seek to follow better practices, follow technological change, hear and understand customer and employee needs. It is impossible to have OLC in an organization if its leader does not demonstrate in practice his/her learning values. In addition, organizational leadership should promote employee self-development, support application of knowledge, and encourage the development of synergistic teams that provide a safe environment for the employees.

In addition, the moderated mediation results displayed educational level-related differences in the relationships within an organizational learning culture, and levels of job satisfaction and customer satisfaction. It was found that educational level plays a significant role in the mediation model. Therefore, HR managers should keep this in mind while recruiting new employees, opting for those employees who have appropriate educational backgrounds and display a thirst for new knowledge, and new skills and increased competencies. Educated employees usually have open minds and are more willing to adopt new norms and rules. In this manner, a learning organizational culture, which to a great extent resides in peoples' minds, thoughts and behaviour, is more likely to exist in an organization with educated employees.

As with any research, this study has certain limitations that should be taken into consideration when interpreting the results. Future studies should also investigate other psychological and contextual factors, beyond job satisfaction, that may affect the relationship between organizational learning culture and customer satisfaction. Other mediator variables, such as employee customer orientation or employee commitment, may be added to the analysis and yield further insights into "LO-customer satisfaction relationship" results.

As noted in the methodology section, data from employees was used as a surrogate measurement of customer satisfaction. It was based on the assumption that the perceptions of employees and customers about customer satisfaction tend to be identical, especially for repeat services. Although the empirical findings indicate that the two groups of employees and customers have similar views about employee perceptions of customer satisfaction (Johnson, 1995; Schneider and Bowen, 1985), it would be advisable to examine the relationships in the model on dyadic data (e.g. by asking employees and customers to rate customer satisfaction).

Another limitation of this study is the fact that all of the constructs were measured at one point in time, essentially from a static perspective. It may be worthwhile to study the proposed model over time in order to take into account the dynamics of employee and consumer perceptions.

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Descriptor	Mean	Std Dev	Factor loading
<i>Organizational learning culture</i> ( $\alpha = 0.85$ , AVE = 0.57)			
KMO = 0.89, $p = 0.000$			
My organization makes its lessons learned available to all employees	4.15	1.56	0.89
My organization recognizes people for taking initiative	4.19	1.62	0.87
In my organization, leaders continually look for opportunities to learn	4.33	1.55	0.79
My organization works together with the outside community to meet mutual needs	4.47	1.41	0.79
In my organization, teams/groups revise their thinking as a result of group	4.42	1.47	0.71
In my organization, people are rewarded for learning	3.65	2.17	0.61
In my organization, people spend time building trust with each other	4.023	2.50	0.56
<i>Customer satisfaction</i> ( $\alpha = 0.86$ , AVE = 0.64)			
KMO = 0.84, $p = 0.000$			
Overall, the service of OLP comes up to customers' expectations	4.57	1.30	0.87
Overall, OLP is a good company for customers to do business with	4.51	1.29	0.86
Overall, customers are very satisfied with their relationship with OLP5	4.44	1.52	0.78
Overall, OLP treats its customers very fairly	4.60	1.38	0.74
In general, the customers are very satisfied with the services offered by OLP	4.72	1.23	0.74
<i>Job satisfaction</i> ( $\alpha = 0.91$ , AVE = 0.58)			
KMO = 0.90, $p = 0.000$			
How satisfied are you with ...			
Your supervisor(s)	4.32	1.53	0.82
Your opportunities for promotion with this organization	4.38	1.52	0.81
Your fringe benefits	4.48	1.44	0.81
Your fellow workers	4.24	1.48	0.80
Your work itself	4.70	1.46	0.77
The level of communication you have with others	4.29	1.45	0.76
Our salary or wages	3.99	1.53	0.75
The contingent rewards	4.02	1.62	0.69
The operating procedures	4.71	1.46	0.60

**Table AI.**  
Measurement items with descriptive statistics, Cronbach  $\alpha$  and factor loadings

Y	Job satisfaction	Customer satisfaction	Customer satisfaction
<i>Port</i> ( $\alpha = 7.46, p = 0.000$ )			
$R^2$	0.52	0.47	0.48
F	176.16*	151.58*	78.75*
Beta-Organizational learning culture	0.72	0.69	0.15*
Beta-Job satisfaction			0.58**
<i>Repair automobile service</i> ( $\alpha = 14.94, p = 0.000$ )			
$R^2$	0.49	0.47	0.70
F	132.13*	121.14*	159.72*
Beta-Organizational learning culture	0.70	0.69	0.21**
Beta-Job satisfaction			0.68*
<i>Supermarket</i> ( $\alpha = 8.48, p = 0.000$ )			
$R^2$	0.73	0.40	0.44
F	347.70*	87.38*	51.19*
Beta-Organizational learning culture	0.86*	0.64	0.31*
Beta-Job satisfaction			0.39*

Notes: Betas reported are standardized values. \* $p < 0.000$ , \*\* $p < 0.01$

**Table AII.**  
Results of regression equations for each service industry



#### **About the authors**

Angelos Pantouvakis was born in Athens, Greece, in 1962, and he studied Civil Engineering at the National Technical University of Athens, receiving an MEng in 1985. He continued his studies at the Nottingham Business School, UK, where he received a Master's in Business Administration (MBA) in 1987. He did his PhD at the Judge Business School, University of Cambridge and received this in 1997. He has spent more than 20 years in the professional arena in Greece and abroad in the services sector industries (with leading consulting firms (Deloitte & Touche, HAY), in banking (ALFA Bank, NATWEST) and the health care and maritime sectors.) He is, at present, Assistant Professor in the Department of Maritime Studies at the University of Piraeus. He has published in the field of services marketing in many outlets such as *Managing Service Quality*, *Total Quality Management and Business Excellence*, *Journal of Targeting, Measurement and Analysis for Marketing*, *Maritime Policy and Management*, etc. He was awarded the Best Commented paper award from Emerald (*MSQ*) in 2011. Angelos Pantouvakis is the corresponding author and can be contacted at: [angelos@pantouvakis.eu](mailto:angelos@pantouvakis.eu)

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